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Role & Constructivist Competencies Of An Online Instructor: Elements Of An Online Course

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ROLE AND CONSTRUCTIVIST COMPETENCIES OF AN ONLINE INSTRUCTOR: ELEMENTS OF AN ONLINE LEARNING COURSE

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DEDICATION

To my daughter, Marshele Parker. Your love, support, and sacrifices made this journey possible. I hope I'm a role model of what can happen when you pursue and believe in your dreams.

To my deceased parents, Mr. and Mrs. Harvey Anderson. Your guidance and unconditional love provided me with a solid foundation to believe that anything is possible.

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CHAPTER 1
INTRODUCTION

Distance education programs, sometimes called online learning, web-based instruction, and e-learning programs, has evolved into the preferred model for how we educate and develop the skills of learners in the 21st century (Aragon & Johnson, 2002). The traditional role of an instructor was focused on creating an effective learning environment in a physical classroom setting. Transfer of these critical skills to a virtual online learning environment in higher-education institutions is needed to remain a vital entity of knowledge. As we progress into the 21st century, the role of an instructor is moving from that of transmitter of information to facilitator of information because of the advancement in technology capabilities for instructors (O'Neil, 2006). The instructor (sometimes called a facilitator) is the catalyst and bridge to creating an effective online learning environment. This new asynchronous learning environment requires that instructors search for creative methods to engage and promote higher-level thinking in their students. "The setting in which learning occurs is being altered dramatically by new technologies, and this has implications for instructor competencies" (Klein, Spector, Grabowski, & de la Teja, 2004, p. 7). In an online learning environment, the instructor's most important role is to model effective teaching methods, accept responsibility for discussion tracks, contribute knowledge and insights, weave together various discussion threads and course components, and maintain group harmony in a virtual environment (Rohfeld & Hiemstra, 1995). Online programs based in higher education, specifically those focused on adult learners, are transforming how and why we educate our communities. According to Aragon & Johnson (2002), "Students who participate in online programs are able to learn at their own pace through courses delivered online that are accessible 24 hours a day from anywhere in the world" (pp. 425).

This study will focus on online instructors who facilitate in an asynchronous learning environment populated by adult learners who attend institutions in higher education. Institutions are asking how we can transition instructors into the role of constructivist facilitators of information while building their online competencies. This question is explored by defining the criteria for success based on core and functional (unique) competencies focused on creating a stimulating and engaging online learning environment.

Background

In the United States, online learning for students has evolved from a single course taken in a blended format to a curriculum of online courses offered by various profit and nonprofit universities. This evolution of access to higher learning has provided a new platform for how we hire, train, evaluate, and assess faculty within higher education. New pathways are developing for career advancement within online learning. Pathways or career opportunities that traditionally led to tenured positions in higher education no longer automatically lead to an administrative position or promotion. Previously, a career path for a faculty instructor was determined by number of publications, student feedback, academic tenure, and internal performance evaluation systems. Presently, there is no clearly defined career pathway for an online instructor in higher education. Instead, career opportunities for faculty are based on a defined set of qualifications that are assessed by an institution. In this new paradigm, faculty members are expected to perform as facilitators of knowledge. As online learning gains wider acceptance in higher education, there is increasing awareness of the facilitative roles of instructors in virtual space (Flood, Guthrie, Liu, Mkamwa, Armstrong, O'Regan & MacCurtain, 2008).

According to Simonson, Smaldino, Albright, and Zvacek (2000), the following are new tasks required of online instructors, along with their defined roles:

- *Instructional Developer*: An instructor is now required to create learning activities organized around demonstrable learning outcomes embedded in course components, including course delivery mode, pedagogy, content, organization, and evaluation (Simonson, et al., 2000).
- *Facilitator*: An instructor must select the media to deliver courses, and programs will be pedagogically effectual, accessible to students, receptive to different learning styles, and sensitive to the time and technology limitations of the students (Simonson, et al., 2000).
- *Instructional Designer*: Distance-learning courses are planned to meet the needs of students within unique online learning contexts and environments (Simonson et al., 2000).
- *Organizer*: Online learning is most effective when there is careful planning and consistency among courses (Simonson, et al., 2000).
- *Evaluator:* Online courses must be periodically reviewed and evaluated to ensure quality, consistency with the curriculum, currency, and advancement of the student learning outcomes (Simonson, et al., 2000).
- *Effective Communicator/Social Collaborator*: An instructor must reiterate key principles and respond to a student’s request for clarification. An effective instructor communicates class structure, responsibilities, and resources before the class begins, and fosters communication and collaboration among classmates (Huer & King, 2004).

The above tasks and roles determine the types of skills and knowledge required for an online instructor. The online instructor who struggles to balance these roles and tasks is likely to transition back to a traditional classroom environment (Berge, 1995). The skills required of an online instructor have been identified by various researchers through a clear definition of the instructor's role and associated competencies. These competencies focused on a pedagogy model that allows an instructor to use questions and probe for student responses based on discussions linked to critical concepts, principles, and skills (Berge, 1995). Instructors are now taking a different approach to creating a rich learning environment by using problem-based instructional strategies to build critical-thinking and problem-solving skills in learners (Baran, 2011). This constructivist approach has shifted the role of an online instructor from that of facilitator of information to enabler of knowledge. As institutions have evolved in providing an enriched learning environment, they have learned that a successful online experience is enhanced when an online instructor empowers a learner to take ownership of the learning experience (Kim, 2006). This transition from a lecture method to an interactive and engaging learning environment is best experienced using a constructivist approach (Jonassen, 2000). This constructivist approach to learning has created a new dynamic for online instructors. Accordingly, accreditation systems once based on institutional enrollment, certifications of faculty, internal training and development programs for faculty, and state (local) regulations now rely on assessment and performance management systems that clearly define the standards and competencies for an effective faculty (instructor) at a higher-education institution. These competencies will determine tenure as well as pay and performance standards for faculty (online instructors). As the industry moves toward a pay-for-performance system for online instructors, the required competencies and associated performance standards have been identified by various researchers and organizations (Klein, et al., 2004; Treacy & Baltunis, 2011; Phillips & Merisotis, 2000). These standard competencies enable institutions to align how they hire, train, reward, and promote their faculty members. Competencies have been identified, researched, and validated for online faculty due to the emergence of online learning, but what has not yet been developed is an updated competency model that defines a constructivist approach to online learning.

IBSTPI Study

In 1998, IBSTPI published the first set of instructor competencies (Hutchison, Stein, & Shepherd, 1988). These competencies were reviewed and tested by a group of practitioners and academics in the field of instructional design and training. This initial competency model by IBSTPI focused on the traditional role of an instructor in a face-to-face setting (Klein, et al., 2004). In 2004, IBSTPI updated this competency model to reflect the current trend in the field toward online learning. In 2006, IBSTPI conducted a study that identified the specific competencies for instructors who taught in a distance education program. IBSTPI identified 20 such competencies, which were then reviewed by 18 experts in the field identified as subject matter experts (SMEs). Face-to-face interviews were conducted with SMEs who were asked to read over the competency and performance statements prior to interview. During the interviews, participants were guided through the list and asked to rate the competency statements for their relevancy and usefulness according to a four-point scale. Quantitative results were summarized, resulting in 54 performance statements describing the instructional activities of a distance education instructor. These performance statements were rated by 148 instructors in terms of importance, frequency of performance, and time spent on each task (Darabi, Sikorski, & Harvey, 2006). A significant part of this study was the job task analysis, in which participants were asked the amount of time spent on a task, importance of the task, and perception of the outcomes of tasks when used in an online course. The SMEs identified the required skills for each performance statement for each competency. After compilation of the competencies and associated performance statements, a web-based questionnaire was created and delivered to 148 multinational instructors teaching an online course. A portion of the instructors (49) completing the questionnaire had a military background. Ninety-six instructors identified themselves as currently not working in a military environment. Three instructors did not reveal whether they worked in a military environment. Analysis of the data reflected the significant characteristics of teaching in a distance education program along with the technical and logistical requirements. The results reflected the tasks most frequently performed by distance education instructors. Task 1: Instructors engaged in course content development. Task 2: Shared information and learning resources with students. Task 3: Ensured that students achieved instructional objectives. Task 4: Maintained expertise in subject matter and instructional techniques. Participants also identified the most important tasks as follows: (a) Review course for accuracy, (b) Ensure that learners attain learning objectives, (c) Make changes as needed to maintain accuracy of course material, and (d) Maintain expertise in the subject area. This study also reflected the amount of time distance education instructors spent on certain tasks: (a) Providing feedback to learners, (b) Using discussion questions to promote higher-order thinking skills, (c) Providing direction for completing assignments. This study validated online instructor competencies but also revealed that the most important tasks performed by an online instructor are not necessarily the tasks that require the most time (Darabi, et al., 2006). This study concluded that interaction sets the tone for the entire course and obtains optimal performance from students (Palloff & Pratt, 2001). Based on the results of this study, a distance education instructor should employ appropriate presentation strategies, facilitate engaging discussion threads, and provide timely feedback (Darabi, et al., 2006). This study also had a significant impact on recruitment, assessment, selection, and training of online instructors by validating the competencies for online teaching. Distance and online education plays an important role in broadening educational access and increasing higher-education opportunities. The success, however, for any online learning centers around a core resource of supportive, participating faculty who provide quality instruction (Tabata & Johnsrud, 2008). A key barrier noted by online instructors to providing quality instruction is the lack of clearly defined competencies linked to compensation models (Flood, et al., 2008).

Traditional Online Instructor's Role

"A competency is the knowledge, skill or characteristic required to effectively perform within an organization" (Lucia & Lepsinger, 1999, p. 4). As instructors transition their learning environments to an online structure due to globalization, changes in the role of an instructor/faculty, rapid advances in technology, and competitive structure of higher educational institutions, the demand for online instructors becomes increasingly important (Sawyer, 2010). This role is evolving into that of an adult learner who functions as a coach and mentor in an online environment (Baran, 2011). Traditionally, an instructor's classroom role was focused on using pedagogical techniques to create a stimulating learning environment. In an online learning environment, instructors have to change their teaching approach to create an engaging class experience (Anderson, 2001). This has changed the role of an online instructor to facilitator and instructional designer, requiring a heightened "teaching presence" in an asynchronous environment. Anderson has defined teaching presence as the design, facilitation, and direct instruction of cognitive and social processes

(Gorsky & Blau, 2009; LaPointe & Gunawardena, 2004; Russo & Benson, 2005). In higher-education institutions, the process of identifying highly qualified online instructors is conducted through an ad-hoc process of trial and error. Most online instructors are selected based on their success in a traditional classroom environment. Such a process assumes that an effective face-to-face instructor is a highly qualified online instructor (Sjogren & Fay, 2002). This common mistake made by administrators creates a gap in how quality instruction is delivered, materials are developed for an online course, and how faculty is rewarded for successfully delivering an online course. This error in selecting quality faculty is coupled with inadequate training and mentoring for new online instructors. Limited training and mentoring is provided by higher-education institutions for online instructors. According to iNACOL, standards for a quality online learning program faculty are provided with opportunities to develop professional skills through mentoring, professional development, and technical assistance (Pape & Wicks, 2009). Most institutions provide supplemental training for online faculty through webinars, podcasts, and videos. This supplemental material is intended to provide online faculty members with developmental opportunities to increase their knowledge and competencies. A trend in online learning is to offer faculty the opportunity to obtain various levels of certification based on years of experience, pedagogical knowledge, and desire to progress in the field of higher education. These levels of certification provide online instructors with the ability to participate in a formal training program focused on building their knowledge of various instructional strategies and media to engage online learners in the learning process.

Institutions of Higher Learning

In our global society, online learning is becoming the catalyst for creating healthy competition between institutions of higher learning. Learners now have a cafeteria of institutions that offer online courses to address the growing demand for flexibility, convenience, and acceleration in obtaining a college degree. Practically all college students will experience some form of online education (Sener, 2010), with the majority able to take online or blended degree programs in their chosen field of study. In education, there is plenty of short- and long-term pressure on academic institutions to increase retention and improve graduation rates. Online education has been growing for the past seven years at 10 times the rate of higher education (Sener, 2010). This growth is contributing to the pressure to expand online programs and improve the quality of instructional learning events and online instructors. When searching for ways to decrease the costs of instruction, institutions often consider using "cheap labor replacing expensive labor" as a substitution, thus affecting the online instructor's role and competencies (Berge & Collins, 2000). When institutions consider building an online learning platform, the last consideration is the cost structure involved in building the skills and abilities of faculty to perform the key tasks required to be successful in their new role. According to Sjogren and Fay (2002), the costs of developing online programs fall into four categories: course design, course delivery, faculty development, and student support. Course design involves the ability of online instructors (faculty) to apply a systematic approach using an instructional design methodology that includes designing course objectives, identifying relevant resources, designing activities and exercises based on performance objectives, and measuring comprehension of the course content. These course materials are sometimes created by a group of instructional designers hired by an institution but are more often designed by faculty with a background in the subject material (known as subject matter experts) but lacking the foundational knowledge of course design and development. According to Ehmann and Hewett (2005), instructors cannot directly transplant their understanding, strategies, and skills from face-to-face to online teaching environments.

Costs of an Online Learning Platform

The infrastructure costs of teaching instructors to create course materials need to be included in the costs of doing business in an online learning platform through ongoing faculty development. Institutions must understand that good instructional design is a costly investment. Creating courses that use technology appropriately—that is, for its contribution to learning rather than as “eye candy”—is difficult (Sjogren & Fay, 2002). Second, the cost of developing an online learning management system to support the infrastructure of a quality online program should be seen as an investment in the institutional support needed for faculty to be successful in creating a quality online learning program (Sjogren & Fay, 2002). Institutions must assume responsibility for effectively creating a quality environment by investing in the infrastructure, technology, and competencies of online instructors to remain competitive. A core challenge most institutions face will be the need to invest in the human capital required to retain quality online instructors and boost enrollment while achieving academic and accreditation standards in an online learning environment. Institutions are faced with a new paradigm for offering quality career development opportunities, mentoring, and coaching along with career paths that excel to nontraditional roles within a university.

RESEARCH PROBLEM

Problem Statement

This study will confirm that the heart of a quality online program as a defined (unique) set of core constructivist competencies (behaviors) focused on the professional development of an online instructor. This assumption or hypothesis is based on personal observations while teaching an online course and related studies, concluding that a quality online learning experience is primarily due to an effective online instructor. This study will address the following problems that exist within online learning: (a) Current competency models focus on technical and organizational competencies for an instructor, not the competencies required for creating a quality, learner-focused online learning experience (b) Online instructors are assessed on creating an engaging learning environment but are not given the proper knowledge and skills to create instructional strategies and methods for a quality online learning environment (c) The evolving role of an online instructor has created a difference in perception of the required competencies for an online instructor. In this study, the research problem will focus on how we (e.g., organizations, institutions, universities, etc.) transition instructors into this role as (constructivist) facilitators of information while building their competencies to be effective online instructors in a quality learning environment. To understand this paradigm shift, additional research is needed on the constructivist competencies for an online instructor, identification of the importance of these unique competencies for an online instructor, and impact on proficiency levels of an online instructor. In this study, online instructors will validate and classify competencies that support their success in an online learning environment based on constructivist principles. Second, online instructors will rank the frequency and importance of these competencies. Finally, we will evaluate the differences in perceptions of these competencies based on an online instructor’s discipline, sector, educational level, and experience.

PURPOSE OF STUDY

The purpose of this study is to identify the unique competencies for an online instructor
who utilizes pedagogy and constructivist principles in an online asynchronous learning environment.

RESEARCH QUESTIONS

This study will attempt to address these problems by examining the unique role(s) and constructivist competencies for an online instructor. Second, the research will explore the differences in perception of these competencies based on sector, educational level, and years of experience.

The research questions examined in this study are as follows:

1. What are the roles and constructivist competencies of an online instructor?

   a. How frequently are these competencies used by an online instructor in an online course?

   b. How important are these competencies for an online instructor in producing a quality online course?

   c. Are there perceived differences in importance and frequently used competencies based on field of study, sector, educational level, and years of experience?

DEFINITION OF TERMS

Competencies. For this study, competencies are the foundational building blocks for defining the success of an individual within a role. Competencies are based on what a person does; they are behavioral and observable (Barbazette, 2006).

Competency model. A competency model is an integrated set of competencies required for excellent performance (Lucia & Lepsinger, 1999).

Constructivism Approach. The constructivism approach seeks to actively engage learners in meaningful projects and activities that promote exploration, experimentation, construction, collaboration, and reflection of what learners are studying (Johnson & Johnson, 1994).

Constructivist Learning Environment. In a constructivist learning environment, the instructor's role is transformed into a new role as a learner (Baran, 2011). This creates an opportunity for the transfer of "perceived" power to occur between an instructor and a learner. Students are free to question and express their own opinions, create their own meaning, share control of the classroom, and develop positive attitudes toward learning (Shirvani, 2007).

Constructivist Online Instructor. A constructivist online instructor is an individual who facilitates, mentors, and guides a learner through the learning process by creating an engaging, introspective, participatory learning environment.

Online Instructor. An online instructor is an individual who facilitates a synchronous or asynchronous course in an online learning environment.

Online Learning Environment. An online learning environment is an asynchronous or synchronous learning environment that is accessed through an online portal.

SIGNIFICANCE OF RESEARCH

It is important to examine this issue as technology continues to evolve and as institutions move to meet that growing demand (Kim, 2006). Additional data are needed to better understand how well institutions prepare instructors for facilitating online courses. It is important to prepare faculty as the need increases for online instructors because of technological advancements, and globalization, that institutions will need instructors who can transition courses from traditional classroom to an online environment (Kim, 2006). Jeremy Polk (2006) states, “It is the teachers’ responsibility to grow as practitioners, stay current in their field and continually evolve as professionals” (pp. 23). Instructional technology constantly evolves and transforms to meet the needs of its community. This community includes performance consultants who focus on exploring approaches to improving organizational and individual performance. Competency development is an organization development intervention that provides insight into improving an organization’s effectiveness (Waddell, Cummings, & Worley, 2008). This intervention enables a performance consultant to examine human behavior within an organizational system while creating new mental models for how an instructor teaches, learns, and evolves as an instructor (Wiesenberg & Stacey, 2005). In a constructivist learning environment, an instructor must become a learner of new knowledge and define instructional strategies (e.g., problem solving, critical thinking) that will work in an online learning environment. An online instructor is faced with a new tool kit of instructional and learning strategies that will enhance the quality of the online learning experience for the learners. This will ultimately improve instructional technology by enabling learners to take responsibility for their learning process while building a platform for instructors to be evaluated and paid based on the competencies required for their position in higher education. Pay-for-performance systems typically have been utilized in business and industry to establish a baseline for performance systems.

Higher Education

In higher education, the shift is occurring from need-based compensation to performance-based incentive packages for online instructors (Longanecker, 2002). The link between competencies and pay-for-performance systems will enable an institution to design its internal performance systems based on the requirements for a position versus the number of students enrolled in a course. Competency-based systems also have the potential to redistribute the power relationship between an instructor and a learner (Voorhees, 2001). In a constructivist learning environment, the instructor is transformed into a new role as a learner. In higher education, this is a dramatic shift from how institutions have trained, rewarded, and compensated instructors in the past. This will create new opportunities in the field of instructional technology based on systems that enable an online instructor to grow, learn, and develop in a constructivist learning environment. As higher education seeks to maintain revenue growth and sustain a competitive advantage, the need for quality instruction is a critical component of remaining viable in the 21st century for an institution. Despite the growth in online learning, literature is lacking on teachers' roles and competencies in online transformative learning and constructivist learning environments (Baran, 2011). A significant increase is expected in the number of online instructors who facilitate via the Internet.

Impact to a learner

The pathways to learning no longer lead automatically to traditional institutions of higher education (Voorhees, 2001). The evolution of online learning will affect how a learner and instructor interact in an online learning environment, transform the activities and assessment strategies used in an online course, and change the approach used to create a learner-focused learning environment. This will have a significant impact on the premise of a learner-focused learning environment. Learners will be increasingly accountable for their own learning needs, will be required to develop strategies for interacting with peers and instructors, and will create new paradigms for how they learn in a constructivist environment. Instructors will need to adjust their instructional strategies to facilitate in an online learning environment. Previous instructional methods used by online instructors focused on completing administrative tasks, being a subject matter expert in a chosen discipline, and navigating an online environment. A study conducted by Clark (1983) suggested that the instructional methods used by an asynchronous online instructor might result in different levels of learning. This study will expand the role of an online instructor to focus more on building learner interaction, creating a social community, designing and developing engaging instructional materials, and coaching, along with mentoring technology-savvy learners in a constructivist environment. This will require the skills and behaviors (competencies) for an online instructor that differ from previous competency models used to train, assess, evaluate, and coach online instructors. It will also redefine the application of constructivist theory in an online learning environment. We will see strong links between constructivist, transformative, and traditional learning theories (Baran, 2011).

CONCEPTUAL FRAMEWORK

A different approach to classroom facilitation that creates an environment that is based on constructivist principles. In a constructivist learning environment, the instructor must create an atmosphere that engages active discussion and promotes critical thinking skills while building a social online community. It necessitates the instructor’s commitment to understand the learning needs of each student, create a classroom structure that can easily be navigated, develop activities and simulations that support the learning objectives, and measure comprehension through quizzes and tutorials. The instructor’s role in adult learning is guided by a constructivist perspective in which adult learners create their own knowledge and learning is learner focused rather than instructor centered (Palloff & Pratt, 2001). This focus on the learner actively engaging in the transfer of knowledge requires that the instructor “lose control” of the learning environment. Emphasis needs to be on student-centered learning that promotes ownership of the learning experience. Greening (1998) suggested, “A learner’s ownership occurs when active learning and a regard for students’ prior constructions follow quite naturally” (p. 25). The design of this “constructivist” learning environment is best created through project-based activities. Constructivist learning environments must be designed to engage the learner in complex thinking exercises that require reasoning and investigation of the problem (Greening, 1998). The student must construct ideas to make sense of the situation. Modern constructivist learning environments are technology based, engaging learners in meaningful interactions. The emphasis is learners who interpret and construct meaning based on their own experiences and interactions (Sellers, 2001). Moore (1989) distinguished between the various types of interaction that can occur in an online learning environment, defining them as learner-teacher, learner-content, and learner-learner. Moore believed the most difficult challenge in an online learning environment was creating the learner-to-learner interaction. Learners can interact with other learners through team projects, assignments, and discussions and they can exchange ideas on topics related to the course (Vrasidas, 2000). An instructor poses real-life problems that students use as a basis for asking directive, thoughtful, open-ended questions. If educators are to adopt a constructivism approach, they are challenged to adapt, practice, and change instructional design strategies to actively engage learners in meaningful projects and activities that promote exploration, experimentation, construction, collaboration, and reflection of what these learners are studying (Johnson & Johnson, 1994). Good online courses involve problem-based projects that seek to maintain active engagement of the learner (Sjogren & Fay, 2002).

Constructivist Instructional Strategies

The constructivist approach to learning requires that a learner be engaged in the learning process and pursue learning with a passion. Thus learners are not passive, simply receiving, memorizing, and recalling information, but rather are actively engaged in thinking, synthesizing, understanding, and applying information in an environment that allows the learners to control their own knowledge and beliefs (Cunningham & Duffy, 1996). This can be created only with motivated learners who are willing to engage in class discussions and take ownership for their learning. A constructivist learning environment is best facilitated through the practice of problem-based learning (PBL). PBL is an instructional strategy used to engage a learner in the learning process and prepare students to be better problem solvers (Richey, Klein, & Tracey, 2011). According to Hoffman and Ritchie (1997), PBL is “a student-centered pedagogical strategy that poses significant contextualized, real world, ill-structured situations while providing resources, guidance, instruction and opportunities for reflection to learners as they develop content knowledge and problem-solving skills” (p. 97). This approach (practice) is best facilitated by an instructor who poses a problem based on a situational learning outcome. The problem is used as a catalyst for understanding complex problems, identifying root causes, and building knowledge transfer to other problem situations (Hmelo & Evenson, 2000). The online instructor has three main roles in PBL, according to Ramsay and Sorrell (2007). First, an online instructor facilitates development of the questions learners ask about the problem being investigated. Second, an online instructor assists learners in locating and understanding appropriate references and resources. A problem-based instructor serves as a coach in identifying relevant professional journals, articles, associations, and resources to assist in clarifying possible solutions and alternatives to a problem. Finally, an online instructor facilitates creation of the final products or proposed solution. Jonassen (2000) believed that problem solving should be viewed as an activity that engages the cognitive components through concepts, rules, and principles. Jonassen (1999) identified individual differences among learners that mediate problem solving, including general problem-solving skills; familiarity with the problem type; domain knowledge; structural knowledge; cognitive and metacognitive processes; and affective, motivational, and volitional factors. According to Savery and Duffy (2001), instructional principles linked to the constructivist approach include the ability to anchor all learning to a larger task or problem that supports the learner in taking ownership for the problem or task. This constructivist approach according to Savery and Duffy (2001) allows a leaner to realize the construct of knowledge and how it evolves through social negotiation and validation of individual understandings based on the design of authentic tasks. These authentic tasks allow a learner to reflect and transfer this knowledge to a complex learning environment that is designed to support and challenge the learner's thinking, test ideas and mental models against alternative views and contexts. The practice of using problems to facilitate knowledge is best used when a facilitator solicits problems with a learner and uses those problems to stimulate discussion and create engaging class activities in an online learning environment (Duffy, Lowyck, & Jonassen, 1993).

Constructivist Learning Environment

Shirvani (2007) suggest that creating this type of learning environment is facilitated by allowing students to freely question and express their own opinions, create their own meaning, share control of the classroom, and develop positive attitudes toward learning. This type of learning environment is best facilitated by an instructor who seeks to maximize student interactions through rich discussion forums, provides frequent feedback, seeks mutual respect from students, and values diverse opinions from all learners (Shirvani, 2007). This environment also encourages students to think independently and build high-level critical-thinking skills.

Pedagogy Approach

A pedagogy approach has been utilized extensively in most classroom settings. In a pedagogy learning environment, an online instructor uses questions and probes for student responses that focus discussions on critical concepts, principles, and skills (Berge, 1995). Berge believed that distance-learning courses will be carefully planned to meet the learning needs of students while providing a unique online environments that builds social communities and networks (Berge, 1995). According to Berge (1995), in a pedagogy learning environment, an online instructor must provide clear course objectives relevant to content and activities, maintain flexibility in the online learning environment, encourage active participation from all participants, maintain a nonauthoritarian style of facilitation, use an appropriate tone, define expectations in the course syllabus, limit expectations during the first two weeks of class, summarize assigned readings, promote social networks and conversations, create unifying discussion threads, and utilize effective classroom strategies. Additional research states that institutional and monetary support (rewards) for the pedagogical competency of online instructors would most significantly affect the success of their online programs (Kim, 2006). A learner-centered pedagogical approach designed by Giani and Schroeder (2004) emphasizes the importance of student activation through an action-oriented approach. In this type of learning environment, learning takes place through student collaboration with peers on complex tasks. Along with a problem-solving approach to learning is supporting theories linked to usage, having a learner construct new mental models in an online learning environment. The connectivism theory is based on the ways an instructor designs and develops online course material using technology and digital information focused on allowing a learner to apply this information by connecting the dots. To prepare learners for the digital age, a connectivism model allows an instructor to incorporate technology and digital information that supports an online learning environment (Siemens, 2005). Siemens believed that educators should be able to adapt existing learning theories for the digital age using the principles of connectivism to guide the development of effective learning materials. According to Siemens (2005), the foundation of the connectivism model is focused on allowing the learner to explore and retrieve current information from long-term memory and create new mental models. Learners are also required to identify relevant information from unimportant information. Making this distinction from existing knowledge to new knowledge enables a learner to acquire new information and make the connection to a new situation. In the connectivity model, learners realize that information is collected from many sources, including the Internet, web pages, pod casts, journal articles, and periodicals. Finally, learners acquire knowledge on an ongoing basis. Knowledge is constantly changing and is not limited to a physical classroom. Jonassen (1999) was instrumental in identifying the core principles of a constructivist learning environment. In a constructivist learning environment, knowledge is constructed and co-constructed with an instructor, a learner, and the online community. In a constructivist environment, it is assumed that knowledge cannot be transmitted through traditional methods; rather, instruction consists of experiences that facilitate knowledge (Jonassen, Carr, & Yueh, 1998). Jonassen (1999) designed a model that illustrates the components required for a successful constructivist learning environment.

Figure 1. Constructivist Learning Environments

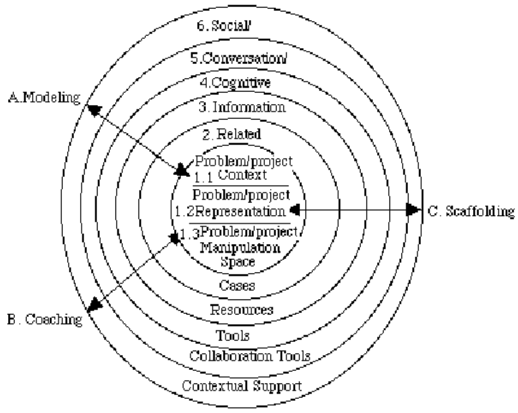


Figure 1. Jonassen, D. H. (1999). Designing constructivist learning environments. *Instructional design theories and models: A new paradigm of instructional theory*, *2*, 215–239.

Designing a Constructivist Learning Environment

Jonassen's design model (1999) presents the essentials components for a constructivist learning environment, which include a problem or project that the learner attempts to solve. The focus of a constructivist environment is the presentation of the problem to the learner through various collaborative tools, cases (stories), resources, and activities as presented in Jonassen's design model. Several authors have presented various tools and activities for an online learning environment that support the development of a constructivist learning environment. Bonk and Zhang (2008) depicted these activities in a R2D2 (read, reflect, display, do) framework for the design of online learning environments and activities. This framework is focused on what instructors can do to enable learners to perform (activities) while learning in a constructivist environment (Bonk & Zhang, 2008). The activities are enabled through collaborative cognitive tools (e.g., online portals, blogs, e-books, video conferencing, electronic portfolios) based on the learning preferences of a learner. Cognitive tools are generalizable computer tools intended to engage and facilitate specific kinds of cognitive processes (Kommers, Jonassen, & Mayes, 1992). Jonassen believed that these cognitive tools help learners elaborate on what they are thinking and engage in meaningful learning (Jonassen, 2000). The author also believed this partnership between cognitive tools and the learner will enable learners to articulate what they know, reflect on what they learn, support the internal negotiation of meaning making, and develop personal representation of new knowledge (Huang, 2002). The R2D2 framework complements Jonassen’s design model because the four stages of the R2D2 model are based on introducing a variety of learning activities that support the various problem-solving stages. Problem-solving stages used in an online environment evolve from acquiring knowledge, reflecting on knowledge, displaying concepts, and practicing new knowledge (Bonk & Zhang, 2008). Jonassen’s (1999) design model also represents the complex roles of an online instructor and acknowledges that the role of an instructor is to model, coach, and build new mental models based on existing references (called scaffolding). The role of an online instructor in a constructivist learning environment also relies on the instructor as a consultant, guide, and resource provider (Markel, 1999). The instructor enables learners to control their learning through the usage of cognitive tools, collaborative discussions, and guided practice with the assistance of a constructivist facilitator. In this type of environment, “some learning takes place beyond the instructor’s scope, for example, in discussions and collaboration with peer learners" (Huang, 2002, p. 31). Another supporting function of an online instructor (facilitator) is to find ways to promote collaborative learning through reflection and social negotiation. The social interaction that occurs in an online learning environment is critical to the development of learners as they process new knowledge, solve complex problems, and collaborate on solutions. According to Jonassen (1994), creating a social negotiation environment can foster reflective response and support collaborative construction. This interaction in an online learning environment improves a student's negotiation, interpersonal, and social skills. In this collaborative environment, it is still the role of the instructor to monitor the quality of learning and peer discussions (Westera, 1999). Another critical role of an online instructor in a constructivist learning environment is that of a designer. In a constructivist designer role, the online instructor is focused on creating a learning environment rather than instructional sequences (Jonassen, 1994). The development of this learning environment should focus on providing real-world, project-based case studies, scenarios, and labs as a part of the learning experience. Instruction should be anchored in real-world problems and events—issues that may be appealing and meaningful to adult learners (Bostock, 1998). This requires engagement of the adult learner in the design process. Learners can actively participate in the design of an online course by offering recommendations on course objectives, prerequisites, grading requirements, and instructional materials (Huang, 2002). As a result, an online instructor will gain buy-in from the learners while building knowledge and social connection. These core attributes of an online instructor (facilitator) are the foundation of Jonassen's design model. The adaption of these design principles and cognitive tools reflects the transformation required of a learner and online instructor (facilitator) in a constructivist learning environment. This transformation occurs through a learning theory called transformative learning.

Transformative Learning Theory

Transformative learning (Dirkx, Mezirow, & Cranton, 2006) is the process of effecting change in a frame of reference. According to Mezirow (2000), frames are the structures of assumptions through which we understand our experiences. When online instructors facilitate an online course, they are presented with various learners who come with various “frames” that construct their thoughts, experiences, knowledge, and beliefs (Mezirow, 2000). These “frames” enable a learner to make certain connections to new and existing information. When an online instructor challenges these frames, this enables a learner to bridge existing frames and create new frames. How does an online instructor use this approach when facilitating an online course? The transformative learning theory provides a framework that analyzes an instructor’s learning processes while teaching online (Baran, 2011). According to Mezirow (2000), the transformative learning theory is a way to problem solve that enables an instructor to define or reframe a problem to promote critical-thinking skills in a learner. This learning theory is focused on providing insight and reflection through solving problems. The transformative learning theory was first explored in 1991 by Mezirow through the construct of three focused assumptions: centrality of experience, critical reflection, and rational discourse (Taylor, 1998). Taylor believed that a learner is transformed and empowered through the learning process (Taylor, 1998). During this transformation process, a learner is empowered to become an independent (autonomous) thinker by negotiating his or her own values, meanings, and purpose rather than instinctively acting on the thoughts of others (Mezirow, 2000). This acknowledges that learners are accountable for their own growth and development in an online learning environment and sets the stage for how online instructors can frame (construct) their classroom setting. The use of transformative learning theory is grounded in three fundamental constructs for an online instructor: a) online instructors are viewed as adult learners, b) transformative learning occurs through critical reflection and problem solving, c) transformation occurs as an online instructor facilitates an online course using pedagogy principles (Baran, 2011). These constructs are foundational to how an online instructor must evolve from being a delivery channel for new knowledge to a facilitator of higher-order thinking through critical-thinking and problem-solving instructional strategies. These instructional strategies enable a transformation in the learner and the online instructor. A problem-based learning (PBL) environment is one in which students learn through meaningful problems, actively construct mental models, co-construct with peers, and develop self-directed learning skills in the process (Yew & Schmidt, 2012). PBL starts with a problem that is co-constructed by a group of learners facilitated by an instructor. This problem evolves through reflection and discussion in a collaborative learning environment. This group of learners is allowed to explore possible solutions, generate alternatives, and identify additional possibilities for further discussion (Schmidt, Van der Molen, Te Winkel, & Wijnen, 2009). The purpose of this exercise is to explain the problem and collaborate through teamwork on generating possible solutions. This dialogue seeks to incorporate prior knowledge and build new mental constructs. PBL consists of three phases: initial problem analysis, self-directed learning, and the reporting phase (Barrow, 1998). Problem solving is an instructional strategy that an online instructor can use to “transform” a learner’s mental construct.

Problem-Based Learning

Problem-based learning (PBL) is a pedagogical approach used for designing instruction. Problem-based learning is driven by an instructor presenting challenging open-ended problems with no one right answer. Problems are context driven, student work is self-directed, and teachers adopt the role of facilitators who guide the learning process. PBL is focused on having students apply knowledge to new situations. It is an instructional strategy that develops critical thinking and creative skills in a learner, improves problem-solving skills, and improves motivation and transfer of knowledge to new situations (Hmelo-Silver & Barrows, 2006). An important component of utilizing PBL as an instructional strategy is the ability of an instructor to encourage and create a collaborative learning environment (Yew & Schmidt, 2012). This problem-based approach to collaborative learning is best described as a constructivist learning environment (Schmidt, Loyens, Van Gog, & Paas, 2007). The wide range of communication strategies available to support online presentations—the use of graphics and visual tools such as “whiteboards,” threaded discussions, real-time as well as asynchronous exchanges, and other community-building communications—can provide more interaction than is possible in most conventional classrooms (Sjogren & Fay, 2002). This transformation of the online learning environment has created a need for a new set of skills and competencies for an online instructor.

IBSTPI Competency Model

In a study conducted in 2003, the International Board of Standards for Training, Performance and Instruction (IBSTPI) identified the competencies and performance statements for various instructional roles. A follow-up study conducted in 2006 applied and validated the competencies for an online (distance) educator. Competencies and performance standards were identified by IBSTPI for a distance education instructor. These performance standards were rated by 148 instructors in terms of importance, frequency of performance, and perception of relative time on task to perform the identified competency (Darabi et al., 2006). The purpose of this study was to explore the recruiting, selecting, and training practices for an online instructor. The founders of IBSTPI believed that competencies have a rightful place in learning and organizations (Spector, 2007). The IBSTPI role focused on validating knowledge, skills, abilities, attitudes, capabilities, and tasks focused on competency development. IBSTPI created a vision for how an instructor and instructional designer should function in a specific role based on a defined set of performance standards. The IBSPTI competency model consisted of three main components—domains, competencies, and performance standards associated with each competency. The IBSTPI model is primarily focused on the competency statements that describe the behavior of the individual performing a specific role. Performance statements were not intended to dictate how to perform a specific task or procedure but rather reflect how to recognize competent performance (Klein et al., 2004). IBSTPI made a series of attempts to revise standardized competencies for instructional designers (Klein et al., 2004). IBSTPI initially distributed the competencies into the following domains: (a) professional foundations, (b) planning and preparation, (c) instructional methods and strategies, (d) assessment and evaluation, and (e) management. These competencies were globally validated through a three-year study involving extensive literature reviews, numerous focus group discussions, and large-scale international questionnaires (Klein et al., 2004). This list was subsequently updated, and the latest model has these competencies placed in four domains: (a) professional foundation, (b) planning and analysis, (c) design and development, and (d) implementation and management. IBSTPI identified detailed performance standards within each competency domain. See Appendix A for a detailed list of IBSTPI competencies (Klein et al, 2004). These competencies will set the stage for this study and are the foundation for defining sets of constructivist competencies.

Institute for Higher Education Policy

In 2000, the Institute for Higher Education Policy, sponsored by the National Education Association (NEA), identified 24 benchmark standards required for a quality online learning environment. These benchmark standards represent the strategies required for a quality online learning program currently used across universities and campuses and were determined by actively studying distance education programs at several universities (Kogan & Hanney, 2000). Six institutions participated in this study that validated the benchmark required for a quality online (distance education) program. A case study approach was used to determine whether these six universities incorporated the recommended benchmark standards in their policies and procedures as well as whether they make a difference in the quality of an online program and how important they are in an online learning program. The list of benchmark standards is provides below:

Institutional Support Benchmark Study

The Institutional Support Benchmark study provided the standards for an environment conducive for maintaining a quality online program (Kogan & Hanney, 2000).

- A documented technology plan that includes electronic security measures (e.g., password, protection, encryption, back-up systems) is in place and operational to ensure quality standards and the integrity and validity of information.

- The reliability of the technology-delivery system is as failsafe as possible.
- A centralized system provides support for building and maintaining the distance education infrastructure.

The Course Development Benchmarks (Kogan & Hanney, 2000) identified standards for course development for an online course as follow:

- Guidelines regarding minimum standards are used for course development, design, and delivery while learning outcomes
- Instructional materials are reviewed periodically to ensure they meet program standards.
- Courses are designed to require students to engage themselves in analysis, synthesis, and evaluation as part of their course and program requirements.

The Teaching Learning Benchmarks (Kogan & Hanney, 2000) study provided the standards for using pedagogy principles when teaching, focused on collaboration, interactivity, and modular learning as follow:

- Student interaction with faculty and other students is an essential characteristic and is facilitated through a variety of ways, including voicemail and email.
- Feedback on student assignments and questions is constructive and provided in a timely manner.
- Students are instructed in the proper methods of effective research, including assessment of the validity of resources.

The Course Structure Benchmarks (Kogan & Hanney, 2000) identified policies and procedures that support the learning process. Those standards are identified below:

- Before starting an online program, students are advised about the program to determine the following:

  (a) Whether they possess the self-motivation and commitment required in a distance-learning environment

  (b) Whether they have access to the minimal technology required by the course design

- Students are provided with supplemental course information that outlines course objectives, concepts, and ideas; learning outcomes for each course are summarized in a clearly written, straightforward statement.

- Students have access to sufficient library resources, including a virtual library accessible through the World Wide Web.

- Faculty and students agree on expectations regarding times for student assignment completion and faculty response.

The Student Support Benchmarks identified the student services found on a college campus. Students receive information about programs, including admission requirements, tuition and fees, books and supplies, technical and proctoring requirements, and student support services (Kogan & Hanney, 2000).

- Students are provided with hands-on-training and information to aid them in securing material through electronic databases, interlibrary loans, government archives, news services, and other sources.

- Throughout the duration of the course/program, students have access to technical assistance, including detailed instructions regarding the electronic media used, practice sessions prior to the beginning of the course, and convenient access to technical support staff.

- Questions directed to student service personnel are answered accurately and quickly, with a structured system in place to address student complaints.

The Faculty Support Benchmarks identified standards to assist faculty in teaching an online course. Those standards are as follow (Lewis-Snow & Farris, 1999).

- Technical assistance in course development is available to faculty members, who are encouraged to use it.
- Faculty members are assisted in the transition from classroom teaching to online instruction and are assessed during the process.
- Instructor training and assistance, including peer mentoring, continues through the progression of the online course.
- Faculty members are provided with written resources to deal with issues arising from student use of electronically assessed data.

The Evaluation and Assessment Benchmarks (Kogan & Hanney, 2000) identified standards to evaluate a distance learning program. Those standards are as follow:

- The program's educational effectiveness and teaching/learning process are assessed through an evaluation process that uses several methods and applies specific standards.
- Data on enrollment, costs, and successful innovative uses of technology are used to evaluate program effectiveness.

- Intended learning outcomes are reviewed regularly to ensure clarity, utility, and appropriateness.

These benchmark standards were based on proven research that online education is the most prevalent technology and fastest growing in distance education (Lewis-Snow & Farris, 1999).

CHAPTER 2
REVIEW OF THE LITERATURE

Introduction

In instructional development, the basic ADDIE model is used as the foundation for conducting an analysis of training needs, designing and developing training, implementing training, and evaluating the effectiveness of the training. Joe Harless was a key influence in the field in determining that the ADDIE model may have missed asking key questions upfront to determine the root cause of performance problems (Harless, 1987). Harless believed that a training needs assessment is just one output of a front-end analysis (Lee, 1988). Thus, the term front-end analysis (FEA) was defined as a procedure that seeks solutions by asking, “What are the symptoms and indicators that a problem exists? What are the performance deficiencies indicated by the data? What is the relative value, in dollars, of solving the problem?” (Harless, 1973, p. 230). This series of questions is focused on getting to the root cause of the performance and making recommendations for the right solution and intervention. The work that Harless developed on FEA has made a significant impact on how we view organizational problems and related human performance issues. The goal of front-end analysis is to diagnose performance problems and identify appropriate remedies (Lee, 1988). Front-end analysis is focused on the performance analysis, cause analysis, and intervention selection phases in the HPT model. To avoid unnecessary training, practitioners should conduct a front-end analysis and ask various questions to help determine the nature of the performance problem and find root causes (Harless, 1973). Harless believed that a front end analysis should be conducted by asking a series of questions to prevent unnecessary activities, costs, and a “training” solution that would not correct the performance deficiencies (Harless, 1987).

According to Harless, front-end analysis (FEA) is problem solving applied to human performance—a series of analytical and decision-making steps that leads to plans for overcoming deficiencies in human performance (Chyung, 2008). Harless was the first to use the term “front-end analysis” (FEA) and believed that front-end analysis is all about money and about how to spend money in ways that will be most beneficial to the organization and the performers in that organization (Chyung, 2008). The concept of Front-End Analysis had never been explored or introduced in HPT until Harless examined the data associated with the needs-assessment process. Harless believed that the nature of performance problem dictates the type of solution. If you have a true training problem, training is the proper solution; if not, you identify the appropriate intervention, depending on the performance problem. This analysis is conducted through a series of “smart questions” that focus on determining the root causes of performance problems (Lee, 1988). Harless was instrumental in developing a noncomputerized expert system for trainers, called the accomplished-based curriculum development system (ABCD). ABCD is a set of rules, procedures, and decision tables designed to guide a novice trainer/HPT through a series of tasks related to job/tasks analysis (Lee, 1988).

Performance Improvement

Various models exist for examining how we improve the performance of organizations, processes, and individuals. A relevant model that addresses performance improvement from an organizational development approach is the Behavior Engineering Model. Thomas Gilbert was the creator of the Behavior Engineering Model (BEM). Thomas Gilbert believed that causes of performance problems were rooted in either the environment or individual performers (Dean &

Ripley, 1997). Gilbert (1978) was instrumental in establishing the field of Human Performance Technology (HPT). Until this point in our history, other theories in the field focused only on behavior, not performance. Gilbert was the first theorist to focus on human performance from a systematic perspective to change human behavior, generating accomplishments valued by the organization (Chyung, 2008). Gilbert's primary contributions include authoring human performance improvement models and his own work on creating a cause analysis model, in which he publicly broke away from behaviorism and helped, found the International Society for Performance Improvement (Marker, 2007). Gilbert believed that two variants exist that support performance improvement: the individual performer and the environment. Gilbert supported the notion that performance analysis should be viewed from the role of the individual performer and the work environment. Gilbert, an engineer by trade, used specific ratios and formulas to support his perspective called "Worthy Performance" (Chyung, 2008). Gilbert also developed a Behavior Engineering Model (BEM), a tool focused on changing work environment variables such as information, resources, incentives, knowledge, capacity, and motives to raise individual performance—based on his 20 years of work using performance engineering in organizations (Marker, 2007). Gilbert's Behavior Engineering Model identified the relationships between the causes of poor performance and identified potential interventions to address these performance gaps. Even though the BEM is a powerful tool for collecting data on individual worker behaviors and general organizational factors, it does not take into account the environmental levels at which performance problems may be occurring (Marker, 2007). Thomas Gilbert's Behavior Engineering Model (BEM) focuses on process improvement. Gilbert has a matrix that goes beyond the behavior to the success of internal actions needed for the conclusion of individual and organizational performance inconsistencies.

Figure 2. Behavior Engineering Model

	Information	Instrumentation	Motivation
Environmental Supports	*Data* • Relevant and frequent feedback about the adequacy of performance • Descriptions of what is expected of performance • Clear and relevant guides to adequate performance	*Resources* • Tools and materials of work designed scientifically to match human factors	*Incentives* • Adequate financial incentives made contingent on performance • Nonmonetary incentives • Career-development opportunities
Person's Repertory of Behavior	*Knowledge* • Systematically designed training that matches the requirements of exemplary performance • Placement	*Capacity* • Flexible scheduling of performance to match peak capacity • Prosthesis • Physical shaping • Adaptation • Selection	*Motives* • Assessment of people's motives to work • Recruitment of people to match the realities of the situation

Source: Gilbert, 1978, p.88

Systems Approach

Eventually, the focused shifted to individual performers and their role within an organization. This systems approach to organizational development has enabled a performance consultant to examine all of the barriers to optimal performance. Performance consultants consider every organization as a system where all of the components are related (Pershing, 2006). In this systems approach, a performance consultant examines the parts of a system through a detailed analysis and makes recommendations based on the interconnectivity of the people, objects, processes, external constraints, and resources available (Richey et al., 2011). This analysis can take on many forms to correctly identify the performance needs and gaps. In the sequential flow of the systems approach, synthesis is the next stage that involves the design of the new system so the identified problem can be solved. This synthesis occurs by either establishing new relationships between existing parts or identifying new parts and creating relationships between them (Richey et al., 2011). This systems approach has relevance to how people, processes, objects, constraints, and resources are utilized within an organization. In higher education, the interconnectivity exists between instructors and institutions in how instructors are hired, execution of ongoing training and development, design of curriculum, and perception of behaviors required for a quality learning environment (Diamond, 1989). The term “performance-based learning” is defined as a framework for learning systems that seek to document that a learner has attained a given set of competencies to perform a job function (Voorhees, 2001). The performance-based competencies model is conceptual and allows for identifying the knowledge, skills, and abilities required to become proficient at a set of given tasks or job specifications. At the foundation of a competency model are the behaviors and traits for a given role. These behaviors are supported through the development of practical experience that leads to acquired knowledge, skills, and abilities to perform certain tasks on the job. The acquisition of skills, knowledge, and abilities provides the foundation for assessment of competencies through demonstrated performance of behaviors. This conceptual framework for assessing performance standards for an online instructor gives institutions the ability to set standards for hiring, training, evaluating, assessing, and terminating faculty members. These standards will also enable a baseline of accreditation practices that can be implemented consistently across institutions. The review of the literature related to this study includes research in the general area of online learning, distance education, competency models, and constructivist learning. The literature for this review was found using robust library databases (e.g., ERIC and ProQuest) to search for scholarly journals, peer-reviewed journals, business and trade publications, and professional journals in online learning and education along with information from iNACOL, IBTSPI, and Sloan Consortium publications. The subjects covered in this review include the role of an online instructor, competencies for an online instructor, rationale for additional research, and trends in higher educational institutions for growing online learning programs. The *Handbook of Human Performance Technology* defines Human Performance Technology (HPT) "as the study and ethical practice of improving productivity in organizations by designing and developing effective interventions that are results-oriented, comprehensive, and systematic" (Pershing, 2006, p. 6). In examining how a performance consultant applies the practice of performance improvement, a consultant is focused on being results-oriented by understanding how to create value using a systems view. HPT is a "systematic approach to improving productivity and competence, uses a set of methods and procedures, and a strategy for solving problems-for realizing opportunities related to the performance of people" (Pershing, 2006, p. 9). HPT is focused on improving the productivity and competence of individuals who operate within an organization or open system. This study addresses the role of an instructor within a viable system called an organization or institution of higher education. Within an organization, an online instructor plays an important role in the success of this dynamic system. Most institutions and studies haven't addressed the performance gap between the competencies required of an online instructor and those required of an instructor to create a quality online learning experience. This gap can create a significant difference when hiring a highly qualified instructor, obtaining state and federal certification standards, and maintaining student retention. Identification of the competencies required in a constructivist learning environment is linked to establishing a quality online learning environment. These competency standards are viable to the health of an institution struggling with professional development, selection and hiring, performance appraisal, and certification standards. This systems approach to examining the whole rather than the sum of its parts is critical to performance improvement within an organization.

Historical Perspective of Online Instructor Roles

Berge was instrumental in defining the role of an online instructor, believing that technology was secondary to the development of quality materials in an online learning environment (Berge, 1995). The author focused on the role of an online instructor as an instructional designer. “It is a combination of technologies and media that provide an environment rich in various opportunities for interaction that the designer can use, provided the strengths and limitations of each are taken into consideration” (Berge, 1995, p. 2). Berge also believed that a rich online environment was created through the levels of interaction stimulated by the instructor. Berge focused on two types of interactions: interaction with content and the ability of a learner and instructor to interact with each other. Berge believed that interaction between an instructor and learner was independent of time and place (Berge & Collins, 2000). For example, an online instructor could create a discussion thread for students to reply to base on a specific (linked to a performance-based objective) topic. A learner would reply to this thread and create a stimulating and engaging discussion with other students regardless of whether the instructor were available to stimulate this conversation. The discussion is driven by the interaction of rich content and stimulating conversation between learners and an online instructor. Berge (1995) concentrated on the design of the course content to promote a stimulating learning environment, stating, “Designers of online instruction need to be aware that the higher the content density of the materials to be learned, the more self-pacing becomes the responsibility of the learner” (p. 22). Berge initially created four categories that identified the role of an online instructor: pedagogical, social, managerial, and technical (Berge, 1995).

Table 1. Classification of Online Instructor Roles (Berge, 1995)

Role variations of an online instructor	*Competencies*	*Defined by Berge*
Pedagogical Role	*Critical Thinking skills* Intellectual; Task	Certainly, some of the most important roles of online discussion moderator/tutor revolve around the duties as an instructor. The instructor uses questions and probes for student responses that focus discussions on critical concepts, principles, and skills.
Social Role	*Building Relationship skills* Building social networks and communities in the online learning environment	Creating a friendly, social environment in which learning is promoted is also essential for successful facilitation in an online learning environment. Berge suggests that "promoting human relationships, developing group cohesiveness, maintaining the group as a unit, and other ways of helping students work together in a mutual cause," are all critical to success of any online learning activities.
Managerial Role	*Organizational skills* (organizational, procedural, administrative)	This role involves setting the agenda for the conference: the objectives of the discussion, the timetable, procedural rules and decision-making norms.
Technical Role	*Technologically Savvy* Manage technology an online learning environment	The instructor/facilitator must make students feel comfortable with the system and the software that the learning session is using. The ultimate technical goal for the instructor is to make the technology transparent. When this is done, the student will concentrate on the academic task at hand.

Berge was limited in his ability to link these roles to clearly defined competencies that an organization can use to measure performance. The author updated his research to include barriers and organizational capabilities for distance education. Berge understood the shift from instructing to learning and the impact on the role of an online instructor, realizing that this change affects the expectations, roles, and responsibilities of learners, instructors, and managers as an organization builds its infrastructure and capability to develop a quality online learning program (Berge, 2008). Berge’s study sets the foundation for future research in competencies for online instructors in higher educational institutions. Supporting this perspective of the role of an online instructor were Rohfeld and Hiemstra (1995), whose definition of the role of an online instructor was to model effective teaching and accept “the responsibility of keeping discussions track, contributing special knowledge and insights, weaving together various discussion threads and course components, and maintaining group harmony” (p. 91). This perspective clearly held the online instructor accountable for creating a rich online learning environment by stimulating discussion conversations and building social communities. This requires strong facilitation skills and the ability to create social interaction and engage students. As universities progressed toward learning in an asynchronous learning environment, proposed a new role for online instructors (Coppola, Hiltz & Rotter, 2002). Coppola, et al. (2002) believed that facilitating in this asynchronous environment (vs. a traditional classroom) created a new paradigm for an instructor. In an asynchronous learning environment, the emphasis is focused on activities that encourage group (team) learning in a collaborative manner, focused on a just-in time approach. This role shift encourages students to look upon their interactions with their peers as a valuable resource for learning (Coppola, et al., 2002). Conversely, in a traditional classroom, students are encouraged to attend class lectures focused on memorizing course materials just-in-time for a quiz or assessment. Coppola was instrumental in leading a research study that focused on the transforming the role of a traditional instructor to that of a virtual (online) instructor in a classroom setting. In this study, Coppola found that a major source of student satisfaction and high level of interaction is greatly influenced by the role of the instructor (Coppola, Hiltz, & Rotter, 1998). Coppola was drawn to this research due to the increase in universities offering “diplomas at an accelerated pace” using a virtual learning environment. Coppola closely examined the University of Phoenix, a for-profit institution, and its approach to creating a virtual learning environment leading to changes in how instructors were transformed from a traditional instructor to an online instructor. This evolution was phrased as a “Sage on the Stage” to “Guide on the Side” (Coppola, 1997, p.1). Coppola identified the role of an instructor as cognitive, affective, and managerial (Coppola, et al., 2002). In a cognitive role, an online instructor is focused on the mental processes of learning, information storage, and thinking to a deeper cognitive structure of learning. In an affective role, online instructors relate to their influence and relationship with a learner and the tools needed to build an intimate learning environment. In a managerial role, an online instructor is focused on managing course content, creating an effective course structure, and monitoring the student interaction needed to develop a quality online learning environment. In these various roles, the persona of the instructor changes to fit a Socratic pedagogy learning environment focused on a multidimensional role (Coppola, et al., 1998). The focus on developing a quality online learning environment led Coppola to examine the role of an online instructor and the variables (technology) that influence learner satisfaction. Coppola focused on the role of the online instructor and learner satisfaction, which he proved is linked to active interaction of both learner and instructor. This interaction needs to be facilitated by instructors who function in their affective role (influencer), cognitive role (mental processes), and managerial role (administrator). According to Coppola (1997), the role of instructor has to change based on the introduction of technology and distance education in an online learning environment. Kirby and Driscoll (1997) confirmed that various factors (knowledge, attitudes, course design, and communication) influence the role of an online instructor. Modifications are needed for the role of an instructor to accommodate this new medium (Kirby & Driscoll, 1997). The role of an online instructor was further defined by Goodyear, Salmon, Spector, Steeples, and Tickner (2001) in a joint study with University of Lancaster and IBSTPI. The authors identified the central role of an online instructor during class interaction as a process facilitator, advisor/counselor, assessor, resource provider, content facilitator, technologist, and metacognition facilitator. The peripheral role of an online instructor can be described as a designer, researcher, co-learner, manager/administrator, researcher, and co-learner in an online learning environment. These roles are classified as *central* roles in facilitating interaction during an online class session or *peripheral roles* as prior or after interaction in the online learning environment. Williams & Hellman (2004) was instrumental in conducting a study that identified the 13 roles and 31 general competencies and role specific competencies. Williams identified the role of a distance education instructor as a change agent and trainer. He believed limited research existed to support the development of an instructor’s role; thus institutions and instructors would benefit from competencies being identified through further research (Williams, 2003). Williams was focused on validating a previous competency study by Thach in 1994 that identified the roles, outputs, and competencies for distance education professionals. Thach (1994) focused on the role of 100 instructors in the United States and Canada and identified four roles as important to a distance education program. Those roles include administrator, instructor (facilitator), instructional designer, and technology expert (Thach, 1994). The author's competency model focused on the technical and communication skills needed for a distance education instructor. Thach (1994) and Piskurich and Sanders (1998) identified the evolution of learning technologies and noted the need for new competencies and further study of roles and competencies. Williams used Thach's research as a foundation for his study, which focused on expanding the knowledge base of an online instructor's role by examining their perceptions of what roles and competencies are important and how these roles changed over time due to the evolution of technology (Williams, 2003).Williams believed that the initial step in creating a successful professional development program was identifying the competencies to perform functions and outputs of major roles (Williams, 2003). Williams based his research on a theoretical framework found in human resource development that prescribed competencies required for acquisition of skills, knowledge and attitudes required to produce performance in the workplace (Williams, 2003). Williams recognized the importance of student interaction in an online learning environment and noted the work of Moore in his study. Moore's quality analysis model (1989) based on interaction requires three levels of participation in an online learning environment. This interaction between participant and learning materials, between participant and expert, and among participants is critical to a quality online learning environment. Flottenmesch (2000) supports this premise that interaction is needed to measure the effectiveness of a learning environment. A learner's perception is key to the involvement or lack of involvement and interaction provided by an online instructor. This perception underlines the importance of effective professional development giving an online instructor confidence to facilitate an online course and effectively build student-to-student interaction (Anderson, 2001). A key study developed by Northrup (2001) identified a framework of strategies to facilitate interaction via five interaction attributes: (a) interaction with content, (b) collaboration, (c) conversation, (d) interpersonal interaction, and (e) performance support. Williams (2003) understood that the interaction between the student and teacher is needed to create a rich, interactive learning environment while using technology as an enabler to facilitate learning. According to Dede (1990), this type of technology-mediated interactive learning environment supports the direct interaction needed in an online course. Williams recognized that this type of interaction was core to the role of an online instructor. Williams defined four major dimensions for categorizing teacher roles and competencies in virtual learning environments. The roles defined by Williams (2003) include (a) communication and interaction, (b) instruction and learning, (c) management and administration, and (d) use of technology (Williams, 2003). Williams used the Delphi technique to structure the group process and capture the perceptions of online instructors.

Characteristics of an Online Instructor

The characteristics of a professional online instructor are defined in terms of not only the instructor's familiarity and knowledge of technology but also the attitudes that the person holds, as well as their knowledge of instructional design using an inclusive teaching strategy (Savery, 2005). Savery (2005) conceptualized a model that identifies the characteristics of a successful online instructor. This conceptual model, called VOCAL, is focused on an online instructor being a vocal/visible, organized, compassionate, analytical individual who leads by example. In the VOCAL model, visibility is closely linked with social presence (Fabro & Garrison, 1998). “Social presence is a measure of the feeling of community that a learner experiences in an online environment” (Tu & McIsaac, 2002, p.131). As a result, social presence is linked to attitudes, motivation, social interaction, and social equality, according to Gunawardena (1992). It’s important to understand that the presence of the instructor, not the technology, is what facilitates the learning process (Tammelin, 1998). Social presence is most evident by the amount of interaction between the instructor and learners in an online learning environment. In an online learning environment, low social presence leads to a high level of frustration, critical attitude toward the effectiveness of an instructor, and lower level of affective learning (Baker, 2010). An online instructor can create an effective online learning environment by creating a social forum that provides the opportunity to build social relationships and community interaction. This is a key characteristic of online instructors and demonstrates their ability to create a positive learning environment. The ability to create a positive learning environment is also demonstrated when an instructor creates a structured forum by posting assignments in a timely manner, providing feedback frequently and often, engaging in active and reflective class discussions, creating robust activities and exercises to measure comprehension, and providing clear expectations and guidelines for successful class experience (Savery & Duffy, 2001). According to Chickering, Gamson & Poulsen (1997) a quality undergraduate learning experience encourages student and faculty interaction, encourages cooperation among students, encourages active learning, gives prompt feedback, emphasizes time on task, communicates high expectations, and respects diverse talent and ways of learning.

Constructivist Learning Environment

A key aspect of a constructivist learning environment is the ability of an instructor to encourage social interaction, facilitate active discussion, and promote social negotiation on focused concepts. Participation through threaded discussion is a key tool used by an online instructor to encourage a learner to construct knowledge. Another tool used to facilitate social interaction is small-group activities. Small groups of two or more learners participate in activities that promote collaboration on assignments, case studies, and lab work. Johnson and Johnson (1994) identified five essential components of a small-group collaborative learning experience: (a) clear, positive interdependence among students; (b) regular group evaluation; (c) interpersonal behaviors that promote each member's learning and success; (d) individual accountability and personal responsibility; and (e) frequent use of appropriate interpersonal and small-group social skills. According to Rovai (2003), "Collaborative learning is achieved when the group agrees on a product that represents a synthesis of each learner's contribution" (p. 9). Group work is best constructed through a process of discussion and interaction with peers and experts (Harasim, 1989). The usage of constructivist principles in an online environment is a practice and philosophy of learning enabling an instructor to use key design and facilitation techniques that encourages learners to take ownership of their learning experience (Kurt, 2011).

Constructivist Approach

A constructivist approach is focused on the learning, not teaching, that an instructor brings to an online course (Rovai, 2003). A constructivist learning environment is learner focused, where active learning and collaboration are promoted by the instructor. According to Barr and Tagg (1995), higher education is shifting from providing instruction (teaching) to producing learning (learning). Rovai (2003) stated, “Teaching at a distance is not just about using technology, it is also about perfecting a pedagogical art for effective online learning” (p. 12). In a related study conducted by Rovai (2003), conclusions stated that an online course designed and delivered using constructivist epistemology can be highly effective and result in a satisfying distance learning experience. Constructivist epistemology emphasizes that learners generate their own rules and mental model, which they use to make sense of their experiences (Kurt, 2011). As a result, learning is focused on adjusting a student’s mental model to accommodate their experiences. This construction of knowledge is best facilitated by an instructor who has acquired the proper training and competencies to achieve a quality online learning experience. In creating this enhanced learning environment, we need to research best practices for facilitating this engaging learning environment. A noted researcher, Wilson (1996), understood how to design instructional case studies to support a constructivist learning environment. The competency model created by Wilson (1996) focused on using complex problem solving that enables an instructor to design instructional materials that promote critical thinking skills in a learner. Wilson’s competency model also applied the constructivist design principles of using well-structured or ill-structured problems and case-based reasoning to design course materials that support and challenge the learner’s thinking through reflective questions, metaphors, and problem-solving scenarios (Wilson, 1996). This study is based on the premise that the role of an online instructor has evolved into a learner-focused facilitator instead of an instructor who translates information. This role has impacted the virtual learning environment and competencies required of an online instructor. A change in the nature of this constructivist learning environment calls for a new set of competencies for an online instructor vs. a face-to-face instructor. Virtual teaching and learning requirements are not limited to knowledge and experience (Guascha, 2009b); rather, they include a set of complex actions including the knowledge, abilities, and attitudes required for successful completion of a series of tasks, called competencies (Guascha, 2009b). For example, a study conducted by Williams (2003) was very limited in scope (100 participants) and added two additional roles based on instructor perceptions. Williams acknowledged that further research was needed on the distinct roles and competencies of an instructor at various types of higher education institutions using different instructional delivery models (Williams, 2003). During this literature review, studies such as, Coppola (1997), Salmon (2004), Smith & Berge (2009), Varvel (2001), and Williams (2003) focused on a pedagogy approach to the competencies defined for an online instructor. Few instructors have identified the constructivist competencies for an online instructor, such as, Hannafin, Hannafin, Land, and Oliver (1997) identified the constructivist course design skills of an online instructor. The authors believed that the constructivist approach emphasized a different kind of method and approach rooted in the epistemological framework (Hannafin, et al., 1997). This constructivist approach to learning should be based on a grounded learning systems approach that an instructional designer would use when developing an instructional event (Hannafin, et al., 1997). This utilization of a theoretic approach to design can also be related to the fundamental skills needed for an online instructor when designing for a constructivist learning environment. This required skill set will assist an online instructor in synthesizing and applying various theoretical constructs needed as a 21st-century online instructor. When examining the current virtual learning environment, the role and competencies of an online instructor have changed based on technology, global influences, learner preferences, and competition. This evolution of the function and purpose of an online instructor has transitioned from subject expert to performance coach (Coppola, et al., 2002). Online instructors are required to actively engage in interaction with students, administration, and colleagues (other online instructors) to facilitate and learn the dynamics of teaching in an online learning environment. This is not the traditional approach to how instructors are trained and developed to facilitate an online course. The competency models identified in this study focused on a defined set of core behaviors used to assess performance in a traditional online class environment. The requirements defined in an active and engaging online environment require a new set of competencies. This engaging and interactive learning environment is focused on learners being accountable for constructing their knowledge through a process, facilitated by a constructivist instructor. This environment is constructed when an instructor actively engages in the learning process by designing interactive course materials and facilitating discussion threads that encourage various forms of interaction among the learner, their peers, and the instructor. Researchers identified in this study argue that instructors in a virtual environment should encourage creative thinking or the strategic and meaningful building of knowledge (Guascha & Espasa, 2009a). Few researchers have identified the competencies required to facilitate this type of online learning environment. The identification of a core set of constructivist competencies would set the standards for certifying online instructors and building a collective body of knowledge and experience for potential online instructors. According to Baran (2011), studies of online teacher roles and competencies are important because they provide information about how online teachers might be trained and supported, along with factors affecting the design of online learning environments. Baran (2011) also agreed that limited literature exists on teachers' roles and competencies for instructing online. Additional research is needed on the competencies required for a self-directed learner given the evolving focus of an online learning environment (Hong & Jung, 2011). As we advance in understanding the competencies and the role of an online instructor, we also come to understand the gaps that exist in the literature. The current literature focuses on the social interaction and collaboration as the main components of a quality online learning environment. As stated by Moore (1989), social interaction at three levels is required for a quality online learning environment; learner to learner, learner with material, and the learner to instructor. Moore's quality analysis model (1989) is based on three levels of interaction in an online learning environment. This interaction between participant and learning materials, between participant and expert, and among participants is critical to a quality online learning environment. Moore (2004) concluded that facilitating interaction among learners raises the quality of an online learning environment. Flottenmesch (2000) supported this premise that interaction in measuring the quality of an online learning environment is critical to a quality online learning experience. This learned perception is critical to the involvement or lack of involvement and interaction provided by an online instructor. This perception has underlined the importance of effective professional development giving an online instructor confidence to facilitate an online course and effectively build student-to-student interaction (Anderson, 2001). A key study developed by Northrup (2001), identified a framework of strategies to facilitate interaction via five interaction attributes: (a) interaction with content, (b) collaboration, (c) conversation, (d) intra-personal interaction, and (e) performance support. A competency framework provides the support to build the skills and knowledge required of online instructors to use a robust delivery system effectively (Kenny, Quealy & Young, 2002). What these previous studies lack is the measurement for how an instructor is held accountable in creating this robust interaction and using innovative practices in an online environment. A competency framework with classifications sets the stage for measuring interaction and core professional standards of an online instructor.

Evolving Competencies for 21st century

Isavea (2007) concurred that the pedagogy competencies of the 20th century are not sufficient for the competencies required in the 21st century. We must remain competitive to ensure that we meet the academic and professional standards through certification, professional development, and a quality learning environment, as detailed in the problem statement. As the learning environment has evolved, the competencies for an instructor have also evolved. Yuksel (2009) concluded that the achievement in online learning depends on instructors acquiring new competencies that are required to work with students online. This evolution must include an upgrade in competencies that focus on a constructivist approach to teaching and learning in an online course. We must define what an online instructor will “look like” in the 21st century. This definition is best characterized by a defined set of core competencies for an online instructor. A challenge, as noted in the literature, is the lack of a competency classification structure due to the number of factors that influence competencies, source of competency structure, and link to cognitive psychology discipline based on a set of core actions (Isavea, 2007). As found in the previous literature, researchers have classified competencies quite differently based on approach, foundation of study, and definition of a competency. Very few competency models exist that are theoretical in nature. Most competency models have used the skills, knowledge, and abilities as the core construct, thus relying on actions to measure achievement of behaviors. What if we looked at competencies from an instructor's perception and experience? What do instructors need to be successful in an online course based on their perceptions and experiences? If we approach competency development based on proficiency levels (novice, practitioner, expert, consultant) we can define the job requirements for standards at each level. Another study by Bigatel, Ragan, Kennan, & Redmond, 1987 identified the spectrum of competencies required for an online instructor as a study for future consideration. This study focused on framework for professional development programs. The authors provided this study as an approach for how institutions might measure and assess individualized competencies to match disciplines, teaching styles, and learner characteristics (Bigatel et al., 1987). In this study, the researchers concluded that ultimately a set of metrics should be defined to measure individual online instructor preparation against a defined set of behaviors that lead to online teaching success. Bigatel et al. (1987) recommended a follow-up study to address the core competencies for not only the beginner online instructor but also the seasoned or expert online instructor. According to Baran (2011), studies of online teacher roles and competencies are important as they provide information about how online teachers might be trained and supported, along with factors affecting the design of online learning environments. Baran (2011) also agrees that limited literature exists on teachers' roles and competencies for instructing online. Wilson (2004) created a four-level proficiency model that enables an institution to address gaps in performance and staff development. This proficiency model is used to build a competency framework focused on faculty development in teaching online. This proficiency model has limited influence on the current pedagogy competency models created by established researchers in the field of online learning Berge (2008), Spencer (1997) and Salmon, 2000). Previous competency models focused on pedagogy principles that initially supported the inception of an online learning environment. Based on the challenges that a 21st-century instructor faces (e.g., constructivist design, robust interactivity, learner-centered exercises), the employed approach must be able to measure proficiency at various levels to align competencies and developmental opportunities and to address performance gaps.

Institutional Support for Competency Development

This has led to a significant amount of work needed by institutions to create a career development plan with defined competencies for online instructors. Most institutions lack a foundational training and mentoring program that supports the growth and development of an online instructor from beginner (novice level), practitioner, expert (mentor) and consultant levels. The current approach to training and development for an online instructor is attendance at a quarterly virtual faculty meeting to discuss policies and procedures with very little focus on improving behaviors needed to be successful in an online learning environment. This approach to competency development has given instructors very little of the support needed to ensure that a learner is proficient in achieving learning objectives. Next, in the studies presented in the literature, the majority of research is based on anecdotal evidence and intuition without any guiding conceptual framework or strong empirical support for assessing or developing the competencies of a learner or online instructor (Hong & Jung, 2011). Competency frameworks exist in assessing company managers, employees, instructors, and instructional designers (Klein et al., 2004; Richey et al.,

2001) but not online instructors. As the online industry moves toward creating a learner-centered environment, a competency framework must be developed to achieve a quality online learning experience. According to the literature, a significant role of an online instructor is to create instructional materials that reinforce desired performance behaviors on core content. According to Fink (2003), “Faculty knowledge about course design is the most significant bottleneck to better teaching and learning in higher education” (p. 23). Core design and development is fundamental to creating engaging and interactive activities for an online course. If online instructors lack these core skills to create an engaging and interactive learning environment, there will be a significant decrease in course interactivity and participation. Several educators advocate the learner-centered approach in education that focuses on construction of knowledge, which is preferred in educational settings (Chaijaroen, 2008). These core skills (behaviors) significantly impact the instructional strategies and methods used in creating an online course. Institutions must address this skill gap through mentoring, faculty workshops and competency development standards and opportunities.

Institutional Training

Institutions have approached faculty development based on levels of need and readiness levels of academic staff (Andrews & Klease, 1998). A three-stage approach allows an institution to enable rapid changes to faculty through a change model and provide faculty development opportunities to support delivery of the right mix of skills and knowledge (Wilson, 2004). This four-level model allows an institution to address gaps in performance and staff development. A description of this model is presented in three levels. Level 1 is defined as a novice or beginner instructor. This online instructor lacks the teaching experience to proficiently manage the technology required in an online learning environment but can effectively communicate and build learner rapport (Stacey, 2004). An institution would approach this level by offering operational training, short seminars, guest speakers, and mentoring from an exemplary colleague. The next level (Level 2) is defined as an advanced beginner with some experience teaching in an online environment (Stacey, 2004). Institutions provide activities focused on instructional design, management skills, student interactivity, and learner reflection along with minimal constructivist tools and strategies. Level 3 is defined as an instructor who provides innovative teaching strategies and experiments using robust constructivist strategies and tools such as case studies, problem-solving strategies, group activities, robust discussion threads, and complex forms of interactivity. Level 4 is defined as a competent and proficient instructor who is a role model for other instructors. This instructor acts as a staff development consultant and resource for internal training programs. A robust competency framework is needed to support a competent instructor at each level of development. The foundational core competencies should be identified in this certification program along with functional competencies. How might we define a certification process? The core of an online instructor certification process would involve the successful completion of a standardized test along with demonstrated performance of key functional competencies. The knowledge test can consist of short-answer items as well as problem scenarios to which the individual is asked to respond (Klein, et al., 2004). The performance test would consist of a demonstration of core and functional competencies through an instructor's portfolio (Klein, et al., 2004), review of the instructor's class forums and chat sessions with learners, and an annual performance evaluation of core and functional competencies by an independent/mentor instructor. This certification process might be conducted semiannually depending on how the online instructor is rated. Initial training and ongoing professional development of an online instructor are a critical component to ensuring consistency in an asynchronous learning environment. Online instructors must receive incremental feedback through a progress report and of course questionnaires on their progress in achieving proficiency at key competencies. Kabilan (2005) recommended online professional development programs aimed at motivating instructors; enhancing instructors' skills, knowledge, and ideas; and improving interactive competence in an online learning environment. This study recommended an online professional development program that gives instructors the opportunity to collaborate and share best practices for creating a robust learning environment. It has become apparent that successful online teachers require a unique set of competencies. There is a persistent opinion that people who have never taught in this medium can jump in and teach an online class. A good classroom teacher is not necessarily a good online teacher (Davis & Roblyer, 2005). Technology continues to change how instructors teach and how students learn (Klein, et al., 2004). This transformation of competencies and skills required for an online instructor will require a certification and a consistent standard across universities along with a standard competency framework that is robust to meet the professional development needs of a 21st-century instructor based on constructivist principles and design.

Competency Models

Competency models have set the standard for how individuals and organizations improve their effectiveness within society. Several studies have explored the evolution of competency models and their impact on human performance improvement as an intervention. Competency models can be used as an effective tool for student recruitment and selection; to develop curricula and other teaching materials; as a coaching, counseling and mentoring tool; as a career development tool; and as a behavioral requirement benchmarking tool (Yeung, Woolcock, & Sullivan, 1996). Competencies are behaviors that distinguish effective performers from ineffective ones (Dalton, 1997). Dalton believed that certain motives, traits, skills, and abilities are attributed to people who consistently behave in specific ways in a given role. A competency model is meant to illustrate these motives, traits, skills, and abilities as a set of desired behaviors for a particular job, role, and position at a proficiency level (Dalton, 1997). According to Richey, Fields, and Foxon (2001), competency defines the critical way in which competence is demonstrated, whereas competence is the state of being well qualified. McLagan (1989) believed that competencies are the internal capabilities that individuals bring to the job that are expressed as a broad spectrum of behaviors.

The International Board of Standards for Training, Performance and Instruction (Klein et al., 2004) defines competency as

> A set of related knowledge, skills and attitudes that enable an individual to effectively perform the activities of a given occupation or job function to the standards expected in employment. (p. 14)

For this study, competencies are the foundational building blocks for defining the success of an individual within a role. Competencies are based on what a person does; they are behavioral and observable (Barbazette, 2006). A competency model implies that a set of behaviors is predictive of an individual who is likely to be successful in a particular role. Competency models have been used as the benchmark for assessing the performance of individual contributors within an organization. Several studies have examined the usage of competency models as an integrated set of competencies required for excellent performance (Lucia & Lepsinger, 1999). The two most common approaches used in most studies focused on a role and position within an organization or a one-size-fits-all approach (Mansfield, 1996). The primary approach used in competency modeling is based on role definition with associated competencies. This role-based approach enables an organization to define the competencies required to assess and evaluate a performer, determine appropriate reward and recognition systems, and promote an employee based on achievement of performance standards. Most organizations are using competencies to distinguish the difference between an average and best (high achiever) performer. This allows organizations to recruit employees, understand gaps in performance reviews, and develop succession plans based on updated competency models. According to Lucia and Lepsinger (1999), a good competency model provides a common framework and allows pieces of performance and workforce management to be integrated into a coherent system.

Competency Modeling

McClelland (1973) was a pioneer in the field of competency modeling, using a specific methodology to build competency models associated with analysis of a job or position. McClelland's approach focused on identifying expected business challenges, conducting critical interviews for evidence of effective and ineffective performers, and validating the competency model (Dalton, 1997). This methodology sets the stage for how competency models have evolved over the years. The first competency models were developed for a single job, sometimes called a role-based competency model (Mansfield, 1996). This traditional approach focused on conducting a series of interviews, direct observations, and focus groups with top performers and documenting skills, knowledge, and abilities in a competency model. This competency model typically included 10–20 traits or skills with a definition and a list of specific behaviors that described effective performers and how to achieve effective results (Mansfield, 1996). Once a competency model was designed, a competency assessment questionnaire was created to validate the competencies for a performer, supervisor, and peers (Mansfield, 1996). A resource guide was developed to assist performers in creating their development plans using a defined competency model. Eventually, after the launch of competency models, training was provided to receive guidance on the implementation of the competency models. This process was laborious and could cost an organization hours of human labor in development, planning tasks, and implementation. Given the short shelf life of a competency model, this approach could be repeated several times within a year. Thus, a one-size-fits-all approach was taken in competency modeling. This approach focused on developing one set of competencies for a broad range of jobs (Mansfield, 1996). In a one-size-fits-all approach, a common model is created for a given population. Senior management reviews and revises the model to ensure it reinforces the organization's mission and values and aligns with the culture. The foundation of this competency model could be an internal survey or questionnaire generated by an external consulting firm. This approach enables an organization to generate a comprehensive competency model that is reflective of the population's (target group) needs and is linked to an organization's mission, objectives, and values. This approach also ensures that individual contributors are assessed by a consistent set of standards. Most one-size-fits-all competency models don't reflect the breadth and depth of a given job based on the tasks required for superior performance. Usually additional training is needed to ensure consistent application of competencies for a defined role. As noted by Mansfield (1996), a common competencies approach ignores technical skills and knowledge, which are a key consideration in matching individuals to available job assignments. A third alternative approach to competency modeling that is emerging is a multiple-job approach to competency development. This approach starts with a core set of competencies, and defined roles are "mapped" to individual jobs by performers. This mapping creates a profile that enables a consistent model based on actual job performance. This profile will be used to evaluate, train and develop, coach, and mentor employees and identify any performance gaps for online instructors. This approach is often used in larger organizations and enables an organization to create classifications of competencies (technical/nontechnical), job families (groups of roles for a position), and proficiency levels (novice, practitioner, expert) that address critical skill gaps on an ongoing basis. A more targeted approach has been used by American Society for Training and Development (ASTD) and International Board of Standards for Training, Performance and Instruction (IBSTPI) for competency modeling. ASTD has championed the development of various competency models for trainers, Human Performance Improvement (HPI), and training professionals. Bernthal (2004) conducted a key study launched by ASTD that provides a competency framework for learning professionals. This framework was intended to establish a standard process for competency modeling with defined inputs, deliverables, and outputs (Bernthal, 2004). Each competency included a definition and a list of key actions for success. A core wheel (visual of competency model) was created that illustrated areas of expertise (AOEs) and a business strategy that identified drivers of business performance. The competencies, AOEs, and roles defined in this ASTD competency model pinpoint the behaviors, knowledge, and critical responsibilities for workplace learning and performance professionals (Bernthal, 2004). A needs assessment and a detailed review of the literature were conducted by ASTD. Second, detailed interviews were conducted by more than 100 subject matter experts in the field. Third, a validation of the competency model was conducted with 2,000 professionals who rated competencies, areas of expertise, and roles in terms of importance of effectiveness based on their current job role. The rating used a five-point Likert scale to rank the importance (Bernthal, 2004). This study focused on eight emerging trends that will affect learning and performance improvement professionals.

IBSTPI Competency Model

IBSTPI conducted a complementary study in 1988, publishing multiple versions of its common book titled *Instructor Competencies: The Standards*. This publication focused on the emerging role of face-to-face instructors who facilitate instructional events and classroom discussions, conduct assessments, and provide feedback to students (Klein et al., 2004). This competency model focused on the instructor being the primary source of information in a traditional classroom. In 1993, IBSTPI recognized that technology began to impact the role of a face-to-face instructor. An updated version of *Instructor Competencies: The Standards* was published to include competencies for distance learning (commonly called eLearning) instructors. This revised competency model focused on the technical competencies required for an online instructor. IBSPTI recognized that the use of technology to facilitate interaction between instructor and learner changed the role and paradigm of an online instructor (Klein, et al, 2004). According to the authors, the "updated IBSTPI instructor competencies reflect developments in teaching and learning and use of online and blended delivery systems" (p. 2). The main purpose of this revised competency model was to provide a guide for applying these competencies in a face-to-face, online, or blended (hybrid) setting. As in previous versions, IBSTPI wanted to provide recommendations to organizations on applying these competencies for professional development, selection and hiring, performance reviews, curriculum development, and certification testing (Klein, et al, 2004). This revised competency model appears to satisfy the requirements for an instructor operating in a traditional classroom setting or in synchronous or asynchronous learning environments. The IBSTPI board acknowledged that students require guidance on how to interact in asynchronous discussion settings and that the skills required to facilitate threaded discussions are quite different from those required in face-to-face settings; both student and instructor require new skills to effectively engage in meaningful interaction (Klein, et al, 2004). The IBSTIPI board recognized that few training programs exist that provide foundational training for these new skills and decided to update competencies for face-to-face settings while developing a new set of competencies for online settings. During a review of literature and practice, the board concluded that that the competencies for online instructors were not substantially different from the competencies for instructors in face-to-face settings, and the competency development efforts continued with the 2004 study (Klein, et al, 2004). It acknowledged that in the future, instructors will be required to facilitate in various settings that will require new technologies and instructional approaches. This assumption that instructor competencies can be applied to a variety of settings is still true. What has changed is the role and instructional strategies needed to facilitate a progressive learning environment for a more demanding learner in a synchronous or asynchronous setting. The IBSTPI competency model served as a construct for the development of the constructivist competency model for this study. See Appendix A for the IBSTPI competency model (Klein, et al, 2004).

Business & Industry Competency Models

This evolution continued with Markus, Thomas-Cooper, & Allpress (2005) in a New Zealand study that examined the assumptions and measurements associated with competency models. This research was fundamental in defining the evolution of competencies from an education, psychology, and business approach. As defined by Markus et al. (2005), each approach has a different outcome, measurement, and audience. Competencies approached from an education perspective are focused on credentials linked to the knowledge, skills, and abilities required to perform a role. In an educational perspective, we focus on the mastery of standards to achieve a level of proficiency. The psychological perspective is focused on motives and personal traits, as defined by McClelland (1973), required for job success. McClelland (1973) defined competencies as a generic body of knowledge, skills, and motives required for superior performance on the job. In the business world, competencies are viewed as a collective body of knowledge that builds the effectiveness of the organization (Hamel & Prahalad, 1989). Markus et al.'s (2005) study acknowledged that whether an educational, psychological, or business approach was used to define competencies, a competency model is a minimum requirement for categorizing competencies. The authors believed "a competency model should provide an operational definition for each competency and sub-competency together with a measurable or observable performance indicators or standards against which to evaluate individuals" (Markus et al., 2005, p. 118). This competency model should include role definition, competency descriptions, tasks required for performance, and indicators. In this study, an in-depth analysis was conducted on the perceived value and investment of designing competency models to improve overall effectiveness of an organization through its most valuable resources: humans. This study mentioned several issues with the development of competency models; first, construct validity. Several studies have examined competencies and sought to obtain agreement from managers, administrators, and experts in defining the core competencies required for a specific role. This lack of agreement represents how competencies and competency models should be used for hiring, training, promoting, and rewarding employees in order to set a baseline standard for performance. The next issue is focused on content validity of competencies. The following questions need to be addressed when conducting a study on competency models. Do competencies represent a sample of the total population? Are described competencies accurate by user population? The underlying assumption of a competency model is that individual outputs represent the organization (Borman & Motowidlo, 1997). A researcher will face content and face validity issues despite subject matter experts and systematic information gathering methods (Markus et al., 2005). This study also mentions the complexity of competency models by examining their depth or breadth of competencies. A universal competency model is recommended that clearly defines a competency and the role for a given population with a list of simple to complex competencies (Thompson, Stuart, & Lindsay, 1997). The next issue deals with clearly defining the measurement of competencies. Very few competency models identify performance indicators that clearly describe the performance standards for various roles within an organization. This challenge is resolved when a competency model describes the competencies from simple to complex, according to Thompson et al. (1997). Another challenge identified in this study was the validation of competencies prior to implementation. According to Markus, et al., (2005), validation is important because competencies describe normative behaviors that explain how to enhance organizational effectiveness. This study also recognized that only a handful of studies investigated the link between competencies and job performance. Additional longitudinal and multiple baseline studies were recommended as a follow-up to examine the effect of implementing competency models overtime to help clarify their effectiveness (Markus, et al., 2005). This study also recommended that the perceived benefits are clearly defined to address the recruitment and selection process, performance management systems, and development and communication. The study concluded that competency models are an enabler of skill development if the model addresses the role and technical competencies, which most don't describe (Markus, et al., 2005). The authors believed that "a technical competency model provides greater value and benefit to an organization leading to greater identification, acknowledgment and capitalization of individual differences, thus building creditability, capability and commitment within an organization" (Markus, et al., 2005, p. 125). In a separate survey, Chiabaru (2000) noted that 80% of the executives believed that the ability to attract, select, and retain the best people will be a key business driver for competency development by the end of the decade. According to Markus, et al., (2005), it is clear that competencies are used as a tool to promote, develop, and access behaviors associated with job performance, thus creating a sense of urgency to improve the validity of competency models. Using this literature review as a base for future research will enable us to define the certification standards for a quality online learning experience in the 21st century, thus enabling future research as technology and learners evolve in their online experience.

Business Competency Models

In corporate America, competencies are used to align performance and determine behaviors to be rewarded and recognized during the annual evaluation process. If an employee is lacking a core set of skills and behaviors according to a defined competency model, a development plan is created to address any skill gaps. This approach to competency development is lacking in the field of online learning. A set of core competencies is clearly lacking in determining a baseline for proficiency for an online instructor. If a core competency model exists, it is based on skills used in a traditional face-to-face classroom environment. This model doesn't take into account the dynamics of a self-directed learner who has access to multiple social media tools on various technology platforms. Fundamental problems are the definitions used to describe the competencies and the approach to determine whether an individual is competent to perform a job or task. According to Klemp (1980), a competency is defined as any attribute of a person that underlines effective performance; a job competency is simply an attribute related to doing a job effectively. Competent workers have the knowledge and skills they need to perform their job at a proficient level. The majority of definitions used in the literature focus on the knowledge, skills, abilities, and attributes required for a certain level of proficiency or success within a role. Parry (1998) defines a competency as the knowledge, skills, and attitudes that define the core abilities required for successful performance in a given job. Individuals are classified as competent if they can perform a task effectively within an organization (Lucia & Lepsinger, 1999). Performance is defined by a set of core standards with a defined outcome demonstrated through the ability to perform a cohort of skills in real situations (Parsons & Capka, 1997). According to the literature, demonstration of a task determines whether an individual is competent or proficient. It appears that what an individual does (performance) should be based on a defined set of standards (competency model).

Critical Competencies for Online Teaching

Chickering, Gamson & Poulsen (1987) conducted an evaluation study that identified the seven principles for good practice in undergraduate education. This study identified and categorized the critical competencies for online teaching success from the perspectives of experienced online faculty and professionals (Bigatel, et al., 1987). This study developed and then applied seven principles of effective teaching that served as an evaluative framework for improving the quality of the face-to-face experience for a learner. These seven principles are (a) encourage contact between students and faculty, (b) develop reciprocity and cooperation between students, (c) encourage active listening, (d) give prompt feedback, (e) emphasize on learning task, (f) communicate high expectations, and (g) respect diverse talents and ways of learning. Graham (2006) evaluated four online courses and applied these seven principles in an online learning environment. These researchers wanted to determine whether these seven principles could be applied to improving the quality of an online course. According to Watwood, Nugent, and Deihl (2009), good online teaching is not different from good face-to-face teaching; thus, incorporating these seven principles foundational to effective teaching. This study validated that three key conditions need to be present for an online course to be effective: (a) faculty must be socially present in the learning forum, (b) a social community must be formed by the students, and (c) students must actively engage in all learning activities. A supporting study was conducted that identified 34 community of inquiry (COI) indicators used to measure the teaching experience in terms of social, teaching, and cognitive presences and student enrollment. This COI framework, based on empirical research, was instrumental in validating a strong relationship between social presences and learning outcomes (Arbaugh, 2005). This study was valuable in establishing the link between the social interaction (students being fully present in a discussion forum) and achievement of course objectives. The theoretical framework for this study was based on the computer-mediated communication environment (Tu & McIsaac, 2002), and the authors confirmed that social presence is a vital element that influences online interaction. These studies provide the foundation for a learner-centered approach to online learning. Interaction is defined in an online course as engagement in the learning process. This is best demonstrated through social interaction, interpersonal relationships, and communication with others (McCombs & Whisler, 1997). The learner-centered framework has been proven and validated in various theoretical frameworks applied to online learning environments. The foundation of empirical research conducted by Chickering, Gamson & Poulsen, 1987 validates that communication; interaction, student engagement, collaboration, active learning, and learner-centered approaches to teaching online can lead to learner satisfaction and retention.

Important Competencies

Williams was instrumental in adding two new roles (change agent and trainer) to the study previously conducted by Thach in 1994. He noted that these roles were important to organizational and individual change (Williams, 2003). Williams concluded that an instructor can “play” multiple roles; therefore, the roles are not linked to job titles. Second, competencies and roles vary depending on the institutional environment related to the distance education program and delivery model. Third, Williams recognized that general competencies (e.g., communication, interpersonal skills) are foundational to entry level roles. Williams thought the competencies identified above functioned as a framework that institutions should use for faculty development. Williams’ study was very limited in scope (100 participants) and focused on validating the existing roles and competencies identified by Thach in 1994. Two additional roles were identified in the Williams (2003) study based on instructor perceptions. Williams failed to take into consideration the evolving role of an instructor and focused on the external skills that institutions could easily correct by implementing faculty development and training programs. He acknowledged that further research was needed on the distinct roles and competencies of an instructor at various types of higher education institutions using different instructional delivery models (Williams, 2003). One of the delivery models introduced by Porter (1997) focused on the usage of technology in an online course. Porter (1997) believed that instructors should be selected for their ability to learn new technologies, flexibility to develop course materials, and desire to acquire new skills when facilitating a Web-based course. Porter’s approach, similar to that of other researchers, focused on the usage of technology and tools to select instructors for facilitating an online course instead of to acquire a set of skills (Williams, 2003). Williams concluded that additional research was needed to determine the level of skills mastery for instructors based on their role. Williams also realized that additional research was needed on the skills, knowledge, and abilities making up the competencies of an online instructor within five years due to the technological changes evolving in the world of online learning.

Table 2. Very Important Competencies (Williams, 2003)

Roles by Williams (2003)	**Competencies**
Administrative Manager	Managerial skills, budgeting skills, marketing skills, strategic planning skills
Instructional Designer	Content knowledge, teaching strategies/models, general education theory, skill with Internet tools for instruction, instructional design for interactive technologies, library research skills, modeling of behavior/skills
Trainer	Training skills (for technology), modeling of behavior/skills, general education theory, teaching strategies/models, skill with Internet tools for instruction, advising/counseling skills
Leader/Change Agent	Modeling of behavior/skills, managerial skills, marketing skills, strategic planning skills, policy-making skills, general education theory
Technology Expert	Computer hardware skills, technology operation/repair skills, skill with Internet tools for instruction
Graphic Designer	Graphic design skills, text layout skills, media attributes knowledge, skills with Internet tools for instruction
Media Publisher/Editor	Skills with Internet tools for instruction, graphic design skills, media attributes to knowledge
Technician	Technology operation/repair skills, computer hardware skills, computer networking skills
Support Staff	Advising/counseling skills
Librarian	Library research skills
Evaluation Specialist	General education theory
Site Facilitator/Proctor	Consensus not reached on any competencies as very important

Aydin in collaboration with IBSTPI, focused on the specialized role of an instructor as an instructional designer. Aydin (2005) believed that the role of an instructor should include the ability to perform tasks similar to the role of an instructional designer. In this role definition, Aydin (2005) believed that an instructional designer should perform the tasks of an evaluator, e-Learning specialist, analyst, and project manager. Smith (2005) identified the 51 competencies required of an online instructor before, during, and after instruction, noting that certain competencies are required prior to the start of a course, during a course, and after the conclusion of a course. The author believed that learner-to-learner interaction is essential to the development of a quality learning environment. Smith attributed the role of a learner similar to that of an instructor that promotes collaborative learning, encourages students-to-learner interaction, and facilitator of knowledge (Smith, 2005). The role of an instructor is seen as that of a collaborator who builds trust and communication within an online learning environment leading to student and instructor interaction. Smith was instrumental in creating the link between instructor competencies and course interaction and in identifying what competencies are required to build a quality online learning experience, defining the role of a learner and online instructor before, during, and after instruction. Smith believed prior to the delivery of a course an instructor should focus on course preparation by explaining the course expectations, responsibilities, and interaction required of a learner in the course syllabus (Smith, 2005). During the course, Smith believed that an instructor should focus on promoting active learning techniques that would assist learners in linking their own personal learning styles to the delivery mode of online learning (Wilson, Bedwell, Lazzara, Salas, & Estock, & Conkey, 2009). Smith did acknowledge the technology competencies required of an online instructor but believed that these competencies would suffer if not linked to learner-to-learner interaction. Smith linked his competencies to the benchmark standards identified by the Institute for Higher Education Policy (National Education Association, 2000). Darabi conducted a study in 2006 that identified 17 tasks most frequently used by a distance education instructor along with associated competencies. Darabi validated that there is a distinct difference in the competencies required for a distance education instructor and those required of a face-to-face instructor (Darabi, et al., 2006). This study supports the competencies required for a learner-centered approach to instruction and the instructor's role as coach and mentor rather than as a facilitator of knowledge (Goodyear et al., 2001). This study was conducted in partnership with U.S. Navy's Navel Education and Training Command distance education program. Darabi's study identified a set of competencies required for an instructor facilitating in a distance education program. Darabi also identified relevant tasks to support the 20 competencies identified from this study. The results of this study determined that the majority of online instructors were less concerned about the usage of technology and more concerned about the course content and materials presented in a distance learning environment and interaction between the instructor and learner (Darabi et al., 2006).

Competencies for an Online Instructor

The majority of instructors believed that the distance education environment was extremely important to a quality online learning course. According to Darabi, interaction is still a relevant and important factor in a classroom environment regardless of whether an instructor operates in a traditional classroom setting or a distance learning environment. Interaction tasks were ranked among the most frequent tasks performed by an online instructor. Darabi didn't limit interaction to that which occurs between a learner and the instructor but also examined the interaction between learners and the course content (Darabi et al., 2006). This study also validated the competencies for satisfactory performance of an online instructor. In correlation with previous studies by Salmon (2000), Palloff and Pratt (2001), and Hong and Jung (2011), this study validated that online instructors need to (a) actively engage learners in the learning process, (b) employ presentation strategies, (c) facilitate productive classroom discussions, and (d) provide timely feedback. The study also concluded that these competencies must be identified by institutions during the initial hiring of online instructors. A balanced assessment of the technical capabilities and instructional components of a candidate should be assessed prior to making a hiring decision of a candidate (Darabi et al., 2006). Once an online instructor is hired, the institution's first priority should be building training that supports the competencies as defined in this study along with partnering with a team of instructional designers to design accurate content and manage the logistics of a distance learning program/course. Darabi thought that implementing a consistent set of standards would reduce turnover of qualified online instructors. Darabi believed that identifying and implementing competencies would improve productivity, recruitment, selection, and training of online instructors (Darabi et al., 2006). Future studies recommended additional research on implications and content of training for distance education instructors.

Competency Standards

In collaboration with the Illinois State Board of Educational Professional Teaching Standards and the National Educational Technology Standards for Teachers, Varvel (2007) identified a set of core competencies. Varvel (2007) was instrumental in defining a competency document for online instructors. Varvel compiled a list of competencies based on a comprehensive literature review that focused on knowledge pertinent for an online instructor (Varvel, 2007). Varvel believed that a competent instructor is the foundation of a quality online program. Varvel provided a clear explanation of competency as follows: “Appropriate prior knowledge, skills, and abilities in a given context that adjust and develop with time and needs in order to effectively accomplish a task and that are measured against a minimum standard” (Varvel, 2007, p. 2).

Varvel (2007) described a *competent instructor* as an individual

> [w]ho effectively and efficiently accomplishes a task (instructs) in a given context (digital distance education) using appropriate knowledge, skills, attitudes, and abilities that have adjusted and developed with time and needs. These individuals are who is sought after for instructing online courses. (p. 2)

Varvel believed a competency model reflects the knowledge, skills, abilities, and attitudes that need to be articulated and organized in order to assess an instructor’s competence in a given context (situation). Varvel focused on moving beyond the acceptance that a quality face-to-face instructor could transfer those same skills to an online learning program (Varvel, 2007). Varvel’s institutions had failed to speak to the quality of an online program by focusing on the instructors and courses offered and moving to defining the competencies (plan for success) for an online instructor. Varvel focused on utilizing his competency model as a professional faculty development plan for online instructors, a guide for institutions to design quality programs, and an enabler to assist in the future design of online programs for potential educators interested in facilitating online courses. This focus on being performance based supports the need for establishing a competency system that validates how instructors are trained, evaluated, and assessed (Varvel, 2007). Varvel also explained that the primary issue facing a competency-driven program is the institutional mind-set about the primary usage of competencies (Varvel, 2007). Most institutions use competencies to hire and retain instructors. Varvel believed that competencies are used to set expectations and goals for an online instructor. These expectations and goals are helpful in providing direction and understanding in their roles. A list of competencies gives institution guidance in developing a quality online program, but other factors, such as, experience, teaching position, social and professional networks, publications, research, and student learning and satisfaction, are important factors in producing quality faculty (Varvel, 2007). Varvel also considered other factors that contribute to a successful teaching experience. These factors include course design, student variables (prior knowledge, online learning experiences, intrinsic motivation, etc.) and technological aspects (Varvel, 2007). According to Varvel, if the right combination exists at the right time, both the learner and online instructor would experience a mutually beneficial online class experience. Thus, the linkage to a combination of competencies is required to be a successful online instructor. In Varvel's approach to competency development, he believed that the "more competencies that an instructor possesses, the higher the propensity that courses instructed by that instructor will result in positive outcomes for a greater number of students" (Varvel, 2007, p. 4). Varvel qualified his competency approach by noting that the goal of online instructors is not to exceed 80% of competencies in order to be considered qualified but rather to determine their personal best in using the competencies they possess and strive to improve the competencies lacking based on a personal development plan (Varvel, 2004). Varvel believed that intrinsic motivation was a key contributor to the success of an online instructor when developing a personal development plan based on a set of core competencies. This motivation, along with institutional support, provides the foundation for successful implementation of a quality online program based on a core set of instructor competencies. Varvel classified competencies as ancillary or preferred attributes rather than as absolute or core requirements to effectively instruct learners in an online course (Varvel, 2004). According to Varvel, an online instructor is exemplary if he or she possesses these excellent attributes beyond the norm. The remaining competencies are considered core to being an effective online instructor. Spector and de la Teja (2001) identified competence as a state of being well qualified to perform an activity, task, or job function. The authors conducted research on the evolving role of an online instructor by clearly defining a common platform for competencies being linked to learning environment and activities. Spector (2007) focused on establishing standards for how we assess and certify online instructors by defining the tasks associated with the role of an online instructor. Spector understood the tasks required for an online instructor vs. those required for a traditional classroom instructor (Spector & Anderson, 2000). Spector and de la Teja (2001) understood that the previous research in online learning focused on moderating chat forums and technical skills. Spector realized that facilitating an online learning environment required formal training and a unique set of competencies. Spector began to realize that the transfer of a set of skills from a traditional classroom to an online learning environment didn’t guarantee a successful class experience for the learner. Spector (2007) believed that preparing instructors to teach online involved preparing them to execute a variety of roles and associated competencies. At this point in the literature, institutions were experimenting with how to transfer the experiences of established faculty from a traditional face-to-face setting to an online learning environment. It wasn’t clear how an institution could take a traditional classroom experience with its dynamics, discussions, course materials, and logistics and transfer that same experience to an online course. Most institutions haven’t properly prepared their faculty for this transition. Spector understood this transition and focused on the development of competencies and certification of online instructors (Spector, 2007). Spector understood that the evolution of technology forced institutions to clearly define the role of an online instructor, develop robust training programs, and provide ongoing mentoring and coaching for online instructors (Spector, 2007). In a 2009 study, Bawane and Spector identified a comprehensive list of roles required for an online instructor.

Table 3. Role of Online Instructor (Bawane & Spector, 2009)

	Role	**Description**
1	Professional role	▪ Comply with ethic and legal standards
		▪ Communicate effectively
		▪ Update knowledge
		▪ Demonstrate commitment and positive attitude
2	Pedagogical role	▪ Design instructional strategies
		▪ Develop appropriate learning resources
		▪ Implement instructional strategies
		▪ Facilitate participation among students
		▪ Sustain students' motivation
3	Social role	▪ Maintain a cordial learning environment
		▪ Resolve conflict
		▪ Refrain from undesirable behavior
		▪ Promote interactivity within the group
4	Evaluator role	▪ Monitor group and individual progress
		▪ Assess individual and group performance
		▪ Evaluate course/program
5	Administrator role	▪ Manage time and course
		▪ Demonstrate leadership qualities
		▪ Establish rules and regulations
6	Technologist role	▪ Access various technologist resources
		▪ Select appropriate resource for learning
		▪ Develop different learning resources
		▪ Suggest resources to students
7	Advisor/Counselor role	▪ Suggest measures to enhance performance
		▪ Provide guidance based on student needs
8	Researcher role	▪ Conduct research on classroom teaching
		▪ Interpret and integrate research findings in teachings

The conclusion of this study and results implied that rankings of identifying competencies assist in providing guidelines for developing efficient and relevant competency-based teacher training programs and essential development of each role by an instructor. The focus of a study by Bawane & Spector, 2009 examined the curricula and training programs being developed for online instructors in India, Indonesia, and elsewhere.

Core Competencies

In 2001, Spector and de la Teja identified the core competencies for an instructor (moderator) in an asynchronous and synchronous learning environment. This study created the foundation for how institutions started to develop the core skills required to operate in an online learning environment. Spector and de la Teja (2001) believed that in an online asynchronous discussion, an instructor would need to (a) allow learners time for reflection, (b) keep discussions alive on a productive path, and (c) archive and organize discussions. Spector believed that different skills were required for asynchronous vs. synchronous learning environments. In a synchronous environment, Spector (2009) said that an instructor (moderator) must (a) establish ground rules for discussion, (b) animate interactions with minimal instructor intervention, (c) determine how any text messages are enhancing or distracting learners, and (d) perceive any cultural differences in this synchronous learning environment. Bawane and Spector believed that universities didn’t take into consideration the link between roles, competencies and tasks performed by an online instructor (2009). Future study was needed on the kind and level of expertise required among instructors to perform their roles. Salmon (2000) was instrumental in grouping competencies into categories for an e-Moderator. Salmon identified an e-Moderator (mediator) as a group of trainers and teachers who work with online learners (Salmon, 2003). The author focused on using computer-mediated conferencing (CMC) as an approach for an online instructor. CMC requires that e-Moderators have a range of expertise and skills to maintain an engaging online learning environment. The key difference between a “regular” online instructor and e-Moderator instructor in a CMC environment is the difference between those who see online as based on instruction and transmission and those who see the learner’s experience as central to learner construction (Salmon, 2000). Salmon believed that the role of an online instructor is to promote human interaction and communicate through modeling, conveying, and building of knowledge and skills. Thus, performing the tasks as an e-Moderator requires a new set of competencies. Salmon believed that successful online learning was dependent on teachers developing new competencies and their potential to inspire learners to a new level of learning, independent of the technology (Salmon, 2000). Salmon based his study on the application of e-Moderator concept within an open university. Salmon's approach was to coach and mentor online instructors in the practice of collaborating in an online environment. Salmon was convinced that online instructors have moved beyond using word counts within discussion postings to gain interaction and are focused more on best practices for creating a quality online environment. Salmon was influenced by the work of Dirckinck-Holmfeld (2002), who classified four generations of online learning environments: 1st generation as Computer Conferencing in an asynchronous environment, 2nd generation as Web-based asynchronous (including hyperlinks and multimedia resources), 3rd generation as using more synchronous communication, and 4th generation as looking to the future (including virtual reality and mobility for the learner). Salmon believed most online instructors operate in the 1st and 2nd generations of online learning. Salmon believed that e-Moderator instructors needed to operate using 3rd- and 4th-generation approaches to online learning. To adapt to this "new" approach in an online environment, an instructor must provide new insights and technical skills to balance managing administrative and social skills (Salmon, 2003). The author believed that we have mastered the concepts of time, motivation, quality of support and training as key factors in a quality learning environment but now must focus on operating successfully in the online learning environment. This evolution calls for training and development of a new type of online instructor (e-Moderator) with a new set of competencies.

Classification of Competencies

Salmon (2003) identified a classification schema for these competencies as (a) Understanding of the online process, (b) Technical skills, (c) Online communication skills, (d) Content expert, and (e) Personal characteristics. This classification of competencies for an online instructor has given this researcher a platform for future research on the e-Moderator competencies required for a quality online learning environment. This classification is one of a few schema used to categorize competencies. In 2007, Isavea conducted a study on the classification schema for instructor competencies. This study concluded that researchers have outlined a number of roles and competencies for online instructors. The identification of roles and competencies has provided the field with a detailed description of how the role of an instructor has evolved and changed over the years. We've seen the role evolve from an instructor who follows a process for carrying out administrative tasks, building a cohesive social environment, and completing technical tasks required by an institution to an instructor who provides an environment based on coaching, modeling, and construction of knowledge facilitated by the learner and instructor. This evolution has created a wide range of competencies required for creating a quality online learning experience. This diversity of studies has provided institutions with a range of competencies to use as a platform for hiring, training, evaluating, and developing professional development programs for online instructors. With this diversity comes an inconsistency in the application of standards for producing future online instructors based on undefined certification standards.

Table 4. Classification of Competencies

Researcher(s)	**Classification of Competencies**
Houston and Howsam (1972)	Cognitive; Affective; Performance; Consequence/product; Explorative
Salmon (2000)	Understanding process; Technical skills; Online communication skills; Content expertise; Personal characteristics
Reid (2002)	Technical knowledge; Content expertise; Process facilitation; Evaluation; Course management
Klein et al. (2004)	Professional foundations; Planning and preparation; Instructional methods and strategies
Shank (2004)	Assessment and evaluation; Management administrative; Design; Facilitation; Evaluation; Technical
Richey, Fields, Foxon, Roberts, Spannaus & Spector (2001)	Professional foundation; Planning and analysis; Design and development; Implementation and management

Competency Models (Why the need?)

Why should we create competency models for any role? According to Bock and Ruyak (2006), competency models develop a useful and effective training plan that determines what training is offered to build the skills of employees, giving an organization the opportunity to grow the internal capability and prepare for the future. A key challenge most organizations face is the retention of the intellectual capital of its employees if they decide to transfer, relocate, or take another job opportunity. This challenge is best approached through succession planning and development of the core skills needed to keep the organization effective, efficient, and competitive in the marketplace. A competency model also defines the expectations for performance and the criteria for success within an organization (Bock & Ruyak, 2006). Competency models are the foundation for most performance evaluation systems and should align with how employees are rewarded and recognized. A competency model creates a business approach to professional development and serves as a strategic tool for managing talent within an organization. Competency models ensure that every employee is measured by the same standards based on the needs of the organization. These needs drive the human resources required to maintain an operational standard for evaluation within an organization. Employees don’t have to wonder whether they’re being evaluated based on subjective data; rather, they are assessed based on valid competencies required to perform the job. A standard competency model builds a culture of accountability focused on giving employees the opportunity to shape their own destiny based on individual skills, knowledge, and desire to perform the job. Finally, a standard competency model improves feedback within the internal performance management system linking competencies, behaviors, developmental opportunities, and rewards within the organization. A defined competency model allows an organization to clearly define the standards for success and expected behaviors. Given the benefits of a competency model, how would we define someone who is successful as an instructor? Varvel (2007) described a competent instructor as an individual

> [w]ho effectively and efficiently accomplishes a task (instructs) in a given context (digital distance education) using appropriate knowledge, skills, attitudes, and abilities that have adjusted and developed with time and needs. These individuals are sought after for instructing online courses (pp. 393).

This research study attempts to focus on establishing a set of competencies for an online instructor by examining the minimum performance standards required for a learner-focused learning environment. These standards are not intended to provide a checklist of requirements but aim to establish a level of performance for an instructor concentrated on developing a quality learning experience focused on the learner in a constructivist learning environment. These standards will eventually provide a benchmark to ensure a quality learning environment for institutions focused on improving retention, developing quality online instructors, and producing graduates capable of competing in a global society.

Changing role of an online instructor

Gunawardena (1992) stated: “I had to change my role from that of teacher at the front of the classroom and the center of the process to that of a facilitator who is one with the participants and whose primary role is to guide and support the learning process. The result was a course designed as a learner centered system based on dialogue and cooperation among students” (p.61). Palloff and Pratt (1999) declared that the use of online learning in higher education reveals the development of a new paradigm of education. In this paradigm, the instructors are no longer seen as the bearer of all knowledge; they are now considered facilitators for students taking online courses. Students can now explore the course content collaboratively or pursue their own related interests. There is no longer a necessity for courses to take place at a specific time and location. Sellers (2001) wrote that traditional classroom teachers served as the initiator of all classroom activities, and as such, they were responsible for students' learning opportunities. Online learning is ultimately student centered and student-driven. The online environment encourages student-centered learning in which intellectual acquisition replaces the didactic force of the teacher as the main impetus of learning (Sellers, 2001). According to Klein et al. (2004), the instructor is the catalyst and bridge to creating an online learning environment. This new asynchronous learning environment requires that an instructor search for creative methods to engage and promote higher-level thinking in their students. The setting in which learning occurs is being altered dramatically by the influence of technology and the Internet, affecting the competencies required for an online instructor. A supporting study by Stodel, Thompson, and MacDonald (2006) examined social presence as an important factor in creating an effective online learning experience. These recommended changes to the COI framework enhanced the importance of using diverse technologies to include communications and social presence (Stodel et al., 2006). How are these skills documented for an online instructor? Competency models are used to document the knowledge, skills, and abilities required for a role or position.

Table 5. Summary of Literature Review

Table adapted and updated from Baran (2011)

Summary of Literature Review

Researcher	Theory	Study	Impact/Instructor Role Definition
Berge, 1998	Pedagogical Theory	Role(s) of Online Instructor	Initial definition of online instructor roles (Pedagogy, Social, Manager, Technical)
Goodyear et al. 2001	Pedagogical Theory	Main roles that online instructors perform	Panel of experts to validate roles and competencies (Facilitator, Advisor, Counselor, Assessor, Technologist, Designer, and Manager)
Anderson et al. 2001	Pedagogical Theory	Teaching Presence in an online (virtual) environment	Conceptual framework for teaching presence (Instructional Designer)
Coppola et al. 1998, 2002	Cognitive Theory	Role of Online Instructor	Captured changing role of an online instructor (cognitive, affective, managerial role)
Varvel 2001	Pedagogical Theory	Developed a competency model for online instructors	Developed competency profile for a program
Williams, 2003	Pedagogical Theory	Role and specific competencies	Validated literature and competencies using Delphi techniques (Designer, Teaching strategies)
Salmon 2004	Pedagogical Theory	Role of eLearning Instructor	Validated roles through focus groups and interviews
Egan and Akdere 2005	Pedagogical Theory	Identified technology related competencies for an online instructor	Technology-related competencies
Aydin et al. 2005	Pedagogical Theory	Roles, competencies and resources for online teaching in Turkey (Assessment competencies)	Large study focused on online mentors (Content expert, instructional designer, materials producer)
Darabi et al. 2006	Pedagogical Theory	Validated online instructor competencies	Validated competencies with experts in academia, military and business and industry
Smith & Berge, 2009	Pedagogical Theory	Updated role definition and competency model	Revised role definition for online instructors and related competencies (Informal, Collaborative, Reflective Learning, User generated content)
Bawane & Spector, 2009	Pedagogical Theory	Validated competencies with experts	Role of online instructor (professional, pedagogical, social, evaluator, administrator, technologist, advisor, counselor, and researcher)
Guascha et al. 2009b	Pedagogical Theory	Developed competency model (higher education)	Study identified skills/competencies that university teachers consider they need to develop or improve
Baran et al. 2011	Transformative Learning Theory	Critical analysis of roles and competencies for online teachers	Introduced Transformative Learning Theory to support competencies for an online instructor (Critical Thinking, Reflection, Problem-Solving)

SYNTHESIS OF ONLINE INSTRUCTOR COMPETENCIES

Why should we focus on using a constructivist approach to develop a quality online learning experience? In 2002, Sikora and Carroll conducted a study of 60,000 students on the quality of their online learning experience. Study results reflected that approximately 40% of high-achieving college students were dissatisfied with their distance education courses. The majority of students' questionnaires noted dissatisfaction with lack of prompt or clear feedback from the instructor and with ambiguous instructions on the course website and emails received from the instructor (Sikora & Carroll, 2002). According to Koymen (1989), "There is a need for a theoretical base for teaching effectively in distance education to help the instructor design and develop course materials and pedagogy principles from a constructivist view" (p. 247).

Constructivist Principles

Constructivism is a practice rooted in cognitive psychology that is focused on individuals "constructing" their own knowledge based on their realities, experiences, interactions with others, and maturity level (Rovai, 2003). This constructivist view is based on the learner being an active processor of information, not passive as denoted in a behaviorist approach (Rovai, 2003). A current view of constructivism that is learner focused seeks to build the realities of a learner through a process of communication, and construction of new paradigms through social negotiation (Bedwell & Salas, 2008). This type of learning is best reflected in an online learning environment through the use of instructional strategies focused on using open-ended questions to prompt critical thinking skills and building reflective moments of discovery. Jonassen (1994) was an initial researcher who suggested that constructivism should be applied to a learning environment and proposed a constructivist design model. Jonassen's design model focused on the following elements: a) knowledge construction, not memorized replication of material; b) presentation of authentic tasks focused on real-practical application for a learner; c) reflective thinking and practice of new knowledge; and d) construction of knowledge through social negotiation (p. 35). This design model presented by Jonassen best reflects the evolution of an online learning environment. This constructivist approach has changed the role of the learner and instructor when applied in an online learning environment.

Constructivist Online Instructor

A constructivist instructor is now an active collaborator who monitors and facilitates learning, coaches and encourages discussion, and builds social communities. Jonassen's (2004) design principles focused on making a clear distinction between a traditional classroom setting and a constructivist learning environment and serve as a guide for how to design a constructivist learning environment given the right problem construct, cognitive tools, and collaborative facilitator. Jonassen's design model enables an online instructor to coach, mentor, and scaffold existing knowledge into a learner who is empowered to explore, create, and practice new techniques based on the usage of constructivist principles. This also enables the role of the instructor in a constructivist learning environment to change based on needs and circumstances within each class (Rovai, 2003). During a course, an instructor could be a knowledge expert and provide answers to a student's inquiries, but this role is balanced with competing roles as a collaborator, mentor, coach, designer, and tutor.

Learner's Role

What is the learner's role in a constructivist learning environment? The learner is now an active participant who engages in rich discussion with the instructor and peers and who seeks to build knowledge through reflection, discovery, and practice of new concepts. Hong & Jung (2011) conducted an empirical study that identified a set of competencies for a distance learner. The focus of this study was to develop a list of competencies, conducted through Behavioral Event Interviews, with successful distance learners. A phased approach was used to identify, validate, and cluster competencies of an adult learner. The focus of identifying these competencies for an online learner was to provide institutions with practical guidelines for learner support and retention measures and to help distance learners improve their completions rates (Hong & Jung, 2011). This study was instrumental in determining that few studies exist that identify the competencies of online learner. The majority of research is based on anecdotal evidence and intuition without any guiding conceptual framework or strong empirical support for assessing or developing the competencies of a learner or online instructor (Hong & Jung, 2011).

Competency Models & Competencies

Competency frameworks exist in assessing company managers, employees, face-to-face instructors, and instructional designers (Klein et al., 2004; Richey et al., 2001) but not online learners and constructivist online instructors. As the online industry moves toward creating a learner-centered environment, a competency framework must be developed to achieve a quality online learning experience. The results of this study concluded the following: (a) A set of competencies and their relative importance enhances the literature and empirical study of online learning (b) Identification of competencies for an online learner contributes to the development and improvement of learner support programs. (c) Study helps to inform and improve a competency research methodology by using a three-phased approach involving qualitative and quantitative methods. Based on this study by Hong and Jung (2011) the role of an online instructor is becoming a catalyst to a quality online learning experience. This has changed how an instructor designs a course based on a combination of pedagogy and constructivist principles. It has also changed how an instructor facilitates, assesses, and rewards learners for their participation, practice, and construction of knowledge in an online learning environment. According to Fink (2003), "Faculty knowledge about course design is the most significant bottleneck to better teaching and learning in higher education" (p. 23). This statement reflects a shift in how an instructor designs, plans, and facilitates an online course. This foundational knowledge will impact the design of the performance (instructional) objectives, activities, and related exercises and assessment strategies created for an online learning course. This shift has created a new set of competencies required for an instructor who is focused on producing a quality online learning experience for an adult learner. This presentation of materials, according to Merrill (1994), is when an instructor tells, shows, illustrates, or demonstrates a realistic detailed example for a learner. Merrill (1994) believed that the design of a distance education program calls for special instructional design methods and interactions. Collis (1996) called this "pedagogical engineering" based on the instructional changes required to support an online (distance) education program. As previously stated in this research, it is a serious misconception to believe that an instructor can take material delivered in a traditional classroom environment to an online learning environment. According to social constructivism, an online instructor should present any course materials embedded in the social context itself (Bedwell & Salas, 2008). Bedwell believed that a third-generation model should exist for stimulating a learner in this type of learning environment. Bedwell and Salas (2008) believed that as instructors we should focus on inspiring learners to piece together information based on their experiences, and the experiences of others, into meaningful schemes that can easily translate into improved performance (Bedwell & Salas, 2008). This collaborative environment is evident when an instructor designs a course that engages and stimulates a learner by creating materials based on authentic problems with supporting details and examples (Jonassen, 1994). Berge (1999) acknowledged that interaction is a key aspect of designing an online course. This instructional design approach through the initial design and eventual facilitation of a course is a core skill that the majority of online instructors do not possess. Modern constructivist learning environments are technology based in which learners engage in meaningful interactions. The emphasis is learners who interpret and construct meaning based on their own experiences and interactions (Sellers, 2001). This interaction is best illustrated when an instructor challenges the learner’s thinking through reflective questions, metaphors, and problem-solving scenarios. An instructor must be trained in how to design these reflective (open-ended) questions, metaphors, and problem-solving scenarios. As a result, interaction should be driven more through the design of a course and less as an afterthought during course execution. A competency model is the best catalyst for transforming the skills of an online instructor. This common set of competencies (behaviors) would enable an instructor to develop their skills and knowledge and explore application of constructivist principles in an online course.

CHAPTER 3
METHODOLOGY

The purpose of this study is to identify the constructivist competency framework for an online instructor leading to improved performance systems that support the competencies of an online instructor. This chapter will describe the methodology—specifically, the target population, sampling procedures, and validation process for this study. A design-based research approach has been adopted here because it addresses the complex problems in real context in collaboration with practitioners in the field. Design-based research is a series of approaches with the intent of producing new theories, artifacts, and practices that influence learning and teaching in naturalistic settings (Barab & Squire, 2004). According to Van den Akker, Gravemeijer, McKenney, and Nieveen (2006), design-based research holds great promise for enhancing both the theoretical contributions and public value of educational technology research. The design-based research protocol requires collaboration between researcher and practitioner in developing solutions to practical problems in learning environments with the identification of reusable design principles (Wang & Hannafin, 2005). This research study will analyze the literature to create a proposed constructivist competency model. This approach seeks to validate the role and constructivist competencies for an online instructor. Using the literature review conducted in Chapter 2 as the foundation for a proposed constructivist competency model, experts will validate content through a task-matching approach via a survey. Previous studies conducted by ASTD and IBSTPI used an effective and inexpensive approach to collecting data using questionnaires with a large number of professional employees to verify competencies identified through literature reviews, expert interviews, and panel discussions (Hong & Jung, 2011).

Table 6. Sample Methodologies Used to Extract and Validate Competency Models
Competency Development Models (Previous studies)

Competency Development stages	McClelland and Boyatzis (1980)	Spencer (1997)	ASTD (Bernthal, 2004)	IBTSPI (Klein et al., 2004)
1. Collect data	Locate outstanding and average performers	Identify outstanding performers	Needs assessment and data collection	Review of literature and practice
2. Extract competencies and models	Conceptualize competencies	Select outstanding performers	New model development	Competency identification
3. Verify competencies	Find and develop measures for competencies	Data collection via BEI and other methods	Model validation	Validation
4. Modify and complete competencies	Administer tests measuring competencies to a new group	Analyze data and develop competency model	Final refinement and confirmation	Competency revision and final approval
5. Verify model		Verify model		
6. Complete constructivist model		Complete model		

Target Group for Study

The target group for this study will consist of experts (online instructors) who facilitate online courses in an asynchronous learning environment. These experts will consist of a group of ten (10) recognized online instructors in the field based on consulting experience, reputation in the industry, awards received in online learning, successful completion of internal training and certification programs associated with university, facilitation of at least five online courses within the year, and recognition as reputable authors in the field of online learning. These experts will also be selected based on their expertise in mentoring online faculty and experience in facilitating online courses. Experts will be recruited via LinkedIn.

In the second phase of this study, practitioners will be used as participants. Practitioners will consist of a group of online instructors. Practitioners will be sent an invitation via the membership website of International Association for K–12 Online Learning and LinkedIn (discussion forum) for participation in this study. The collective members of iNACOL will have the opportunity to participate in an electronic survey for this study. LinkedIn participants will be recruited and invited via discussion forums established for online instructors. See Appendix B for a sample survey for experts.

Sample Institution

The practitioner participants for this study will be drawn from iNACOL, a nonprofit organization that facilitates collaboration, advocacy, and research to enhance quality K–12 online teaching and learning. This institution represents a diverse cross section of K–12 education from school districts, charter schools, state education agencies, charter schools, research institutions, corporate entities, and other technology providers (Patrick, 2008). iNACOL's primary focus is to identify research needs within the field of online learning and to be an advocate for public policy for online institutions that promote effective online teaching and learning. iNACOL is instrumental in setting quality standards for online instructors. In October 2011, iNACOL published Version 2 of the National Standards for Quality Online Teaching (Treacy & Baltunis, 2011). INACOL organized a team of experts consisting of online teachers, professional developers, instructional designers, researchers, course developers, and administrators to review new standards and new literature on quality standards for an online instructor. The need to update the previous version of quality standards was based on feedback from organizations using standards for professional development and evaluation of online instructors. In Version 2 of the enhanced standards, indicators were divided between what the online instructors should know and what the online instructors should be able to do for evaluation purposes.

A sample from iNACOL (2000 total online instructors) included faculty that instruct online courses representing school districts, charter schools, state agencies, research institutions, corporate entities, and technology professionals. Full- and part-time online instructors were targeted for this study because they tend to make up the majority of online instructors. iNACOL has a partnership with various online schools and universities. Since is it not feasible to reach all member online instructors in the universe, a sampling frame is the iNACOL partnership with the various schools and universities. A staff member from iNACOL will be included to assist in posting an invitation on the faculty membership site. Salkind (1997) recommended oversampling when sending out questionnaires and surveys and stated that the sample size should be increased approximately 40% to 50% to account for lost surveys/questionnaires and uncooperative participants. When using oversampling to obtain a relative sample of the target population, a researcher can use four methods to anticipate a minimum response rate, according to Bartlett, Kortrlik, & Higgins (2001): (a) take the sample in two steps, using the first step to estimate how many additional responses are expected from the second step, (b) use pilot study results, (c) use response rates from previous studies of the same size and population, and (d) estimate the response rate. The researcher will use Cochran’s (1977) sample size formula for this study. Cochran’s (1977) formula is based on categorical data to determine a sample size of the study. A sample size of 100 was calculated based on this formula.

Figure 3. Competency Model Development Stages

	Competency Model Development Stages	# of participants	Time Required for each phase
1	Collect data and analyze via literature	-	6–8 months
2	Extract competencies and create proposed competency model based on literature	-	2 months
3	Validate content of proposed competency model with experts	10	3 weeks
4	Modify model based on expert feedback	-	2 weeks
5	Validate competency model with practitioners	100	4 weeks
6	Obtain and compile results of study based on constructivist competency model	-	2 months

Sampling Strategy

This study will utilize the research (partnership) bank of online instructors at iNACOL as the unit of analysis, thus differentiating perceptions among sector, and experience, as identified in research questions. During the initial stages of study, the researcher will validate content of the proposed constructivist competency model with experts. These experts will represent faculty who have instructed online courses for five years or more, representing school districts, charter schools, state agencies, research institutions, higher education, corporate entities, and technology professionals. Ten (10) consultant/expert participants will be recruited from LinkedIn based on based on criteria used in previous studies. Williams (2003) used a multistep process to determine the criteria of an expert. This resulted in identifying the criteria for an expert as follows: 1) The individual has made a contribution to the field of online learning, 2) has a minimum of five years of experience, 3) is nominated by a peer, and 4) is willing to participate in the study. These expert online instructors will validate the content of the competency model using a task-matching approach. This task-matching approach will ask identified experts to match competencies to the correct category based on frequency and importance of constructivist competencies.

The second group of participants will represent practitioners that include faculty representing school districts, charter schools, state agencies, research institutions, corporate entities, and technology professionals. An electronic questionnaire (via Survey Monkey) will be used to capture data about the proposed constructivist competencies for an online instructor and validate constructivist competencies based on their importance and frequency of use. Because the researcher is using a questionnaire format for this study, an oversampling of the target audience is required. A systematic random sample from a generated membership list of 25–30 schools and universities that represents the target population will be used for selected sampling. The variables that will influence selection will be size of online faculty population, educational level, experience teaching online, field of study, and sector. These variables will be incorporated into the formula used for sample selection. A sample size will be determined using Cochran's (1997) formula. The researcher will estimate the response rate for this study using Cochran's (1997) formula for sample size determination. A sample size of approximately 100 participants will be required for this stage of the study. Participants will be selected using a systematic random sample in which the researcher selects a sample from a generated list of target schools, called the sampling frame (Hesse-Biber, 2010). The researcher will randomly select schools invited to participate in the study (based on an estimate of the sample size needed for Phase 2) from the iNACOL partnership list until the desired participant level is reached. This approach will ensure that the study is a true representation of whole population. Schools identified in partnership with iNACOL will be solicited to participate in the study. A formal proposal will be submitted to each school for review via email.

Research Design

Collection and Analysis Procedures

A review of the literature was conducted to understand what already exists in the literature regarding the role and competencies of an online instructor. A detailed research was conducted on pedagogy and constructivist competencies to uncover previous studies and determine relevance of current study in the field of online learning. Possible sources of information included online journal articles, electronic journals, and case studies based on previous studies. It was determined that limited information was available on the constructivist competencies for an online instructor.

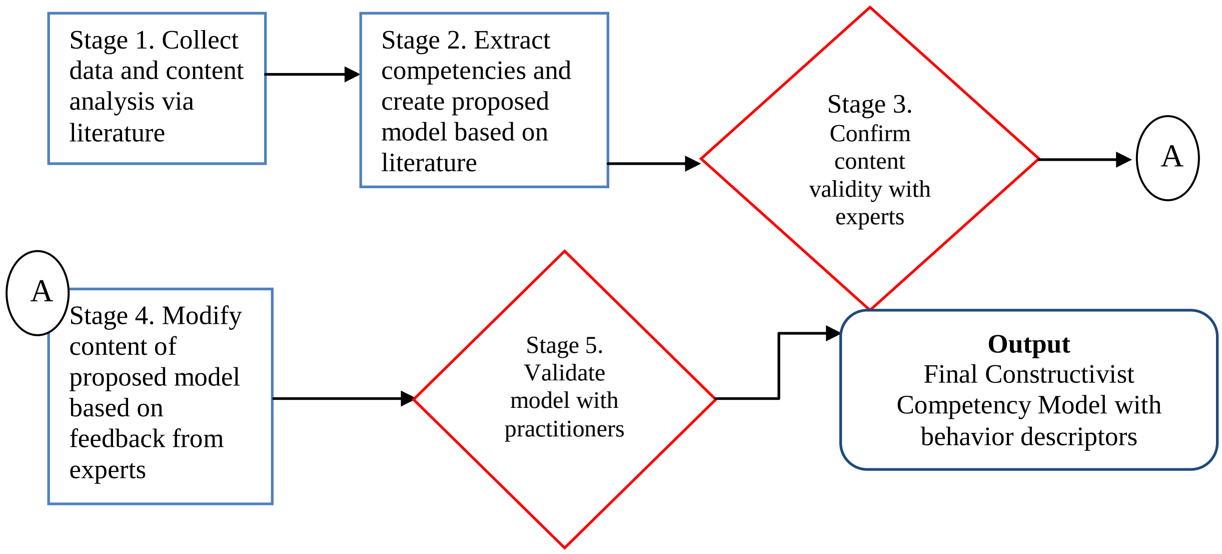
Instruments

The instruments that will be used in this study are a tracking and matching survey for experts and a survey via Survey Monkey for participants. Below is a detailed description of the process to be followed in instrument design and establishing their reliability and validity. See Appendix B and Appendix D for sample instruments for experts and practitioners.

COMPETENCY MODEL DEVELOPMENT STAGES

A structured competency model development process will be used during this study to collect and analyze data and to extract constructivist competencies to create a constructivist model that will be validated, verified, and modified based on feedback from experts and practitioners. This process has been proven and used in previous studies to create pedagogy competency models. Each stage of the process is described in detail on the following pages.

Figure 4. Competency Development Model



Competency Development model explained on the following pages.

Competency Model Development Stage 1

Literature Review and Content Analysis

A review of the literature was conducted to understand what already exists in the literature regarding the role and competencies of an online instructor. A detailed research was conducted on pedagogy and constructivist competencies to uncover previous studies and determine relevance of the current study in the field of online learning. Possible sources of information included online journal articles, electronic journals, and case studies based on previous studies. It was determined that limited information was available on the constructivist competencies for an online instructor. In Competency Development Stage 1, a proposed constructivist competency model is created based on information from the literature review. A detailed representation of the literature focused on the role and constructivist competencies for an online instructor. The data collected describes the constructivist role of an online instructor and the competencies (knowledge, skills, and abilities) required for a quality online learning environment. Data collected included previous studies focused on online instructors operating in an asynchronous or synchronous learning environments, competency development models, and role clarification and competencies for an online instructor. Data were collected from ERIC and ProQuest databases. The data collected was analyzed, synthesized, and compiled into a structured constructivist competency model for an online instructor. Based on the literature, a model was created by extracting competencies from proven constructivist design principles that will be used in Stage 2 of the Competency Model development.

Competency Model Development Stage 2

Identifying Roles & Extracting Competencies

The framework for this constructivist competency model will be Jonassen's design model for constructivist learning environments (Jonassen, 1999). This model identifies the components of a constructivist learning environment. An image of this model is provided below along with proposed constructivist competencies in outer text boxes. This section will illustrate and discuss how competencies were developed for the proposed competency model used in the study.

Figure 5. Constructivist Learning Environments

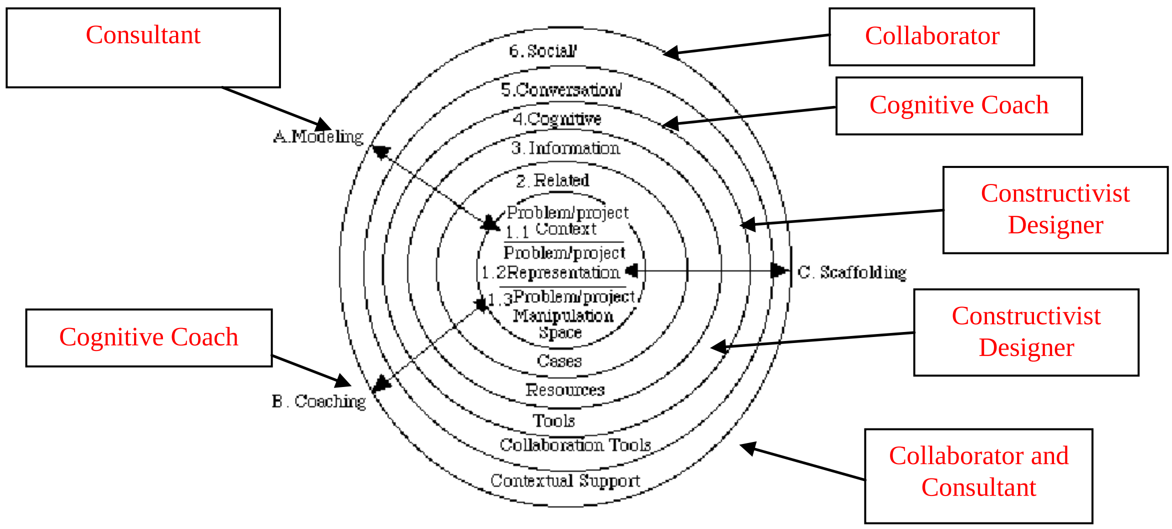


Figure 5. Jonassen, D. H. (1999). Designing constructivist learning environments. *Instructional design theories and models: A new paradigm of instructional theory*, *2*, 215–239.

Jonassen (1999) focused on a problem or project as the focus of a constructivist learning environment. This problem is constructed and developed by an online instructor through the use of scenarios or real-life problems faced by a learner. This problem is best constructed when an online instructor can design and create problem-based scenarios in their role as a constructivist designer. In this role, an online instructor stimulates a learner by creating authentic problems with supporting details and examples (Jonassen, 2004). Based on Jonassen's design model, a list of online instructor roles was created to support the functions and tasks performed by an online instructor. A list of roles with behavior descriptors is provided below:

Cognitive Coach Role

A constructivist consultant is an instructor who can mentor and model constructivist behaviors in an online learning environment by providing examples of desired behavior through overt performance. A Cognitive Coach has the ability to empower learners to interpret and construct meaning based on their own experiences and interactions, thus building new cognitive processes or mental models for a learner. A constructivist designer has the ability to design instructional materials and promote critical-thinking skills in a learner using well-structured or ill-structured problems. As a collaborator, an online instructor would promote learner engagement and interaction through focused discussion threads in a collaborative learning environment. In a constructivist learning environment, an online instructor is expected to mentor and model constructivist behaviors by providing examples of desired performance through modeling. In this study, we've identified this role as a *constructivist consultant*. Jonassen (2004) believed that modeling was best represented when an online instructor used overt performance techniques in a constructivist learning environment. An example of an overt performance technique is reflective learning. According to Cowan (2006), reflective learning (reflection in action) occurs when an instructor presents a concept, models the required or anticipated performance of the tasks, and then allows the students and instructor to reflect or generate a shared meaning or understanding of this concept. Cowan believed this reflection in learning is what makes instructors innovative and robust in their role. In this role as a consultant, the instructor is someone who models by providing relevant and nonrelevant examples to generate discussion and looks to the learners to provide innovative and creative approaches for application. Such an instructor must have the ability to demonstrate a task, model the required performance using a worked example, and allow students to reflect and discuss insights into how they would perform the task. This behavior of emulating a task and allowing for reflection builds the critical thinking and problem-solving skills of learners. They no longer look at a problem as a challenge but see it as an opportunity to learn something new through reflection and robust discussion with peers. The online instructor is modeling an approach to problem solving and learning by offering students the opportunity to reflect and share new insights. In this consultative role, the online instructor is consulting a learner on the best practices using a worked example, but the learners are essentially developing their own knowledge and approach through reflection and discussion. Another key contribution of an online instructor in developing a quality online learning environment is the ability to *coach* a learner in developing and building new cognitive processes. In this role as a coach, an online instructor guides, motivates, empowers, and shapes learners' ability to interpret and construct meaning based on their own experiences and interactions. As a coach, an online instructor must promote learners to take ownership of their learning. An example of this behavior is best demonstrated when an online instructor promotes learners to lead class discussions and summarize main points at the end of a course event. A coach enables learners to build confidence in their ability to manage class activities and achieve course objectives through problem resolution of case studies and scenarios. A cognitive coach must also possess the ability to analyze a learner's performance using cognitive tools and formal assessments. These cognitive tools and assessments can take the form of a job aids, labs, tutorials, and worked examples. A *cognitive coach* is also expected to build a learner's knowledge using scaffolding techniques to build and construct new knowledge.

Consultant Role

In this role as consultant, an online instructor is using existing knowledge to create new mental models that enable a learner to process concepts at a higher level. The instructor uses questions and probes for student responses that build on critical concepts and principles while enhancing critical thinking and strengthening problem-solving skills. An online instructor must challenge a learner's thinking through reflective questions, metaphors, and problem-solving scenarios using scaffolding practices. This guide on the side (Coppola, 1997) enables a consultant to act as a Subject Matter Expert while influencing the learner's thinking process.

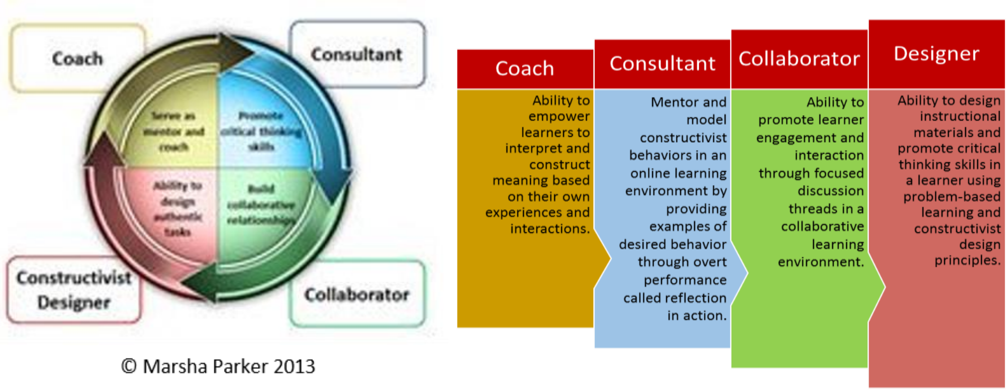
Constructivist Designer Role

An online instructor's role as a constructivist designer utilizes collaborative tools and resources to support the creation of new knowledge for a learner. This construction of knowledge is represented through the construction of defined case studies, practice labs, and social media tools. An online instructor must also provide a supportive and collaborative (social) learning environment to build collaborative relationships that promote learner engagement in an online course.

Collaborator Role

The online instructor's *role as a Collaborator* is based on his/her ability to engage the learner in stimulating class discussion. This can be accomplished through focused discussion questions, collaborative social media tools, and chat forums. In this role, an online instructor builds the construction of knowledge through social negotiation and focused interaction (Jonassen, 2004). This interaction is best demonstrated when an online instructor can function as a collaborator in building conversation and social interaction (Jonassen, 2004) in an online learning environment. Constructivist learning environments seek to engage learners in knowledge construction through collaboration activities that embed learning in a meaningful context and through reflection on what has been learned through conversation with peers (Jonassen, Davidson, Collins, Campbell, & Haag, 1995). This proposed competency model will be based on knowledge, skills, and abilities of online instructors operating in an online learning environment in their role as Consultant, Cognitive Coach, Constructivist Designer, and Collaborator.

Figure 6. Proposed Constructivist Competency Model



*Competencies are core components of the constructivist model aligned to a constructivist role. They are concise statements that provide a general description of each competency based on a set of constructivist skills.

**Each competency is supported by an associated performance statement that describes the behavior for each competency.

Table 7. Proposed Constructivist Competency Model

Roles of an online instructor	**Competencies*	***Performance (Behavior) Statements*
Consultant Role An instructor who can mentor and model constructivist behaviors in an online learning environment by providing examples of desired behavior through overt performance called reflection in action.	*Constructivist skills* Model behavior through reflective learning Mentor in usage of collaborative tools Promote higher level critical thinking skills in a learner	Ability to provide worked examples to solve complex problems by using cues and associations to promote decision-making and reasoning skills. Mentor learners in usage of collaborative tools. Consult with learners on alternative approaches to solve a problem or gain a different perspective on a topic. Ability to demonstrate a task and model performance through a focused activity or worked example. Ability to articulate the reasoning that learners should use when engaged in performing an activity, task, or assessment.

Table 8. Proposed Constructivist Competency Model

Roles of an online instructor	*Competencies*	***Performance (Behavior) Statements*
Coach Role Ability to empower learners to interpret and construct meaning based on their own experiences and interactions, thus building new cognitive processes or mental models for a learner.	*Coaching skills* Serve as a guide and coach to learners Motivator Cognitive Coach	Empower learners to interpret and construct meaning based on their own experiences and class interactions Ability to guide learners by providing substantive feedback Ability to motivate a learner in an online learning environment Model higher-order thinking by formulating questions to probe a learner's comprehension of core concepts Ability to analyze a learner's performance using cognitive tools and formal assessments. Ability to coach a learner using online chat feature.
Constructivist Designer Role	*Instructional Strategies and Methods skills*	Ability to present a problem in a manner that allows the learner to build knowledge

Ability to design instructional materials that promote critical thinking skills in a learner using well-structured or ill-structured problems.	Problem-Solving skills Critical-Thinking skills Use of collaborative tools Comprehension skills Instructional Designer skills	in a reflective and analytical manner Ability to design and create complex scenarios that allow students to make decisions and select alternative methods. Ability to stimulate a learner by creating materials based on real authentic problems using collaborative tools, such as podcasts, blogs, online chats, videos, online games, and simulations. Ability to design instructional materials that enable a learner to build knowledge in a reflective and analytical manner. Ability to design instructional content that can be used to solve a problem or scenario. Ability to adjust learning problems and scenarios based on difficulty and complexity of a learner's ability to comprehend situations

Table 9. Proposed Constructivist Competency Model

Roles of an online instructor	*Competencies*	*Performance (Behavior) Statements*
Collaborator Role Promote learner engagement and interaction through focused discussion threads in a collaborative learning environment. .	*Collaborator skills* Team Building skills Class Dynamics Knowledge Sharing skills Social Negotiation skills Content Expert	Promote learner interaction through focused and engaging discussion threads using authentic tasks in a meaningful context rather than abstract instruction out of context. Generate new ideas that promote critical thinking and problem solving skills in a collaborative learning environment. Ability to create a collaborative online environment through the construction of knowledge and social negotiation. Ability to engage a group of learners in discussion of content that can be used to solve a problem or design a project or portfolio. Ability to promote a social and engaging online learning environment using the online chat feature

Competency Model Development Stage 3

Verify Content of Survey

In Stage 3, expert participants will be given the opportunity to validate the content of a survey that identifies the constructivist competencies based on the literature review in this study. In Stage 3, experts will be asked to complete a mini-survey that will validate the content of the proposed model by ranking important constructivist competencies with defined categories. Stage 3 will ensure that the right competencies have been identified and that classification of competencies and determination of relevance of competencies are accurate based on the perception of experts. Experts will be asked to rank relevance of constructivist and pedagogy competencies. This mixture of pedagogy and constructivist competency will allow an expert online instructor to recognize current pedagogy competencies along with constructivist competencies. Pedagogy competencies were based on existing competencies models identified in the literature review (e.g., IBSTPI). Content validation of the survey will involve experts who instruct online courses. In a previous study conducted by Williams (2003), Williams used a multistep process to determine the criteria of an expert. This resulted in identifying the criteria for an expert as follows: 1) The individual has made a contribution to the field and recognized by an award or organization, 2) has a minimum of three years of experience, 3) is nominated by a peer, and 4) is willing to participate in the study. Demographical information captured in this survey will validate the experience and background of online instructors through their years of experience, publications in the field of online learning, professional certifications, consulting experience, and completion of internal training program at their designated university. Experts will be asked to rank the relevance of each category of proposed constructivist competency model based on the role of an online instructor as consultant, coach, constructivist designer, and collaborator. They will also be asked to identify and rank competencies important to their role as an online instructor. A feedback form will accompany the survey. If the survey results identify any competency statement as irrelevant, this information will be used to revise the competency model. Completed validation surveys will be kept in a locked file cabinet for three years. A form will be used to obtain feedback from each expert. This feedback form will be used to revise and edit the survey. Instructions will be provided to experts for completing this survey. See Appendix B for the complete survey with instructions.

Competency Development Stage 4

Modify Competency Model

In Stage 4, the proposed competency model will be modified based on content validation from experts. This feedback will be used to revise the proposed competency model and provide a comprehensive structure for Stage 5 of the research. Modifications to the survey and proposed model will reflect the realities of the online learning environment along with relevant existing constructivist design principles. This feedback will be used to revise the questionnaire instrument (Survey Monkey) and improve questions and competencies defined in the questionnaire for practitioners as well as implementation in Stage 5.

Competency Development Stage 5

Validate Final Competency Model

The final stage will focus on validating the constructivist competency model with a larger group of online practitioners via an online survey using Survey Monkey. A summary of the study and description of the responsibilities of participants will be posted on iNACOL's membership website. Participants will be solicited to engage in the study based on their interest and willingness to complete the survey. The survey will include a consent form, instructions, description of the study, and the competency model. The online survey consists of an introduction section defining a constructivist learning environment, demographic questions (e.g., role, experience and field of study, proficiency level, and sector), competency model with skill descriptors, and a section to obtain feedback on the survey and capture additional comments. The participants for this stage will be asked to provide information on their role (administrator, online instructor, etc.), years of online teaching experience, and highest degree obtained. The second section will consist of a competency model that identifies constructivist competencies, classification of competencies, performance (behavior) statements, and indicators. Participants will be asked to rank each competency using a Likert scale of 1 to 5 based on importance and frequency of usage for competencies in an online learning environment. A rating scale is most useful when a behavior needs to be evaluated on a continuum (Leedy & Ormrod, 2001). Quantitative ratings of validation study will be summarized to indicate whether competency was relevant and frequently used by an online instructor. This questionnaire will allow the researcher to capture relevant data points, comments, and demographical information about participants. This approach will allow the researcher to finalize the proposed competency model and provide a final published version for future research.

Research Approach

A mixed-methods approach will be used for this research study. A mixed-method design can be described as a combination of quantitative and qualitative research techniques, methods, approaches, concepts, or language into a *single* study (Johnson & Onwuegbuzie, 2004). A mixed approach allows the researcher to examine the links between qualitative and quantitative paradigms. Connelly (2009) believed that a mixed-methods study allows a researcher to draw on the strengths and minimize the weaknesses of both types of studies.

ANALYSIS OF DATA

The purpose of qualitative data analysis is to search for important meanings, patterns, and themes in what the researcher has heard and seen. “Quantitative data analysis is a process that entails (1) Sensing themes, (2) Constant comparison, (3) Recursiveness, (4) Inductive and detective thinking, and (5) Interpretation to generate meaning” (Ruoma, 2005, p. 236).

Data from the online Survey Monkey (practitioners) will be analyzed using inferential analysis. The researcher will review and reflect upon the data in an effort to identify patterns, findings, and recommendations for future research based on research purpose and questions (Ruoma, 2005). This process will produce a list of themes that the researchers will further reflect upon to understand the deeper meaning within the data as well as how the themes and categories of the data relate to the research questions. The resulting themes will then be summarized, and the researcher will review and reflect upon them in an attempt to understand the skills, knowledge, and abilities required to operate in a constructivist learning environment.

Themes will them be documented to a) determine any patterns that may emerge across groups or across themes; b) determine whether and how themes may fit together; and c) determine how the themes may relate to previous research studies. From this process, some themes may stand out as most important, and other categories of data may raise questions meriting further exploration (Ruoma, 2005). Multivariance analysis will be used to analyze these themes and identify the relationship between variables as well as examine the variables in isolation. Good qualitative research is enhanced by efforts to ensure the trustworthiness of the data (Ruoma, 2005). For this study, trustworthiness will be addressed by checking with participants to determine whether information was captured based on their perceptions and whether themes were plausible. The researcher will check data against existing literature thus confirming emerging findings throughout the research (Merriam & Caffarella, 1999; Ruoma, 2005).

Exploratory Data Analysis

Exploratory data analysis (EDA) is used to visually display relationships between variables (Hartwig, 1979). It seeks to understand patterns and relationships between variables. The explanation of these relationships displays information that allows a researcher to gain insight into patterns given the data presented in the study. This unexplained variance in the data will reflect and reveal information that was unknown prior to the study. EDA is about creating a mental model that enables the researcher to bond with the research data to uncover hidden assumptions about a theory (Behrens & Yu, 2003). EDA involves the iterative process of developing a hypothesis and looking for the facts and tenants of constructivist theory. EDA seeks to connect hypothesis formulation and data collection (Behrens & Yu, 2003). This exploration looks for patterns and trends by answering the research questions using a discovery approach to data analysis. The independent variables of the study are the following:

- Years of experience teaching online
- Professional awards and certifications
- Educational level
- Completed training programs
- Number of online courses taught within one year
- Publications or research conducted in the field of online learning
- Online consulting experience
- Field of study
- Current employment status
- Sector or college

Exploratory Data Analysis for this study will focus on examining the relationship between independent variables (frequency and importance) and dependent variables (see list above) and refining the conceptual constructivist competency model for online instructors.

Comparative Data Analysis

Comparative data analysis for this study will focus on examining the comparative relationship between experts and practitioners in their role(s) as a constructivist designer, consultant, cognitive coach, and collaborator during the analysis. This comparative view will identify two labeled groups. Each group will consist of 50 online instructors (practitioners). Group 1 will be labeled iNACOL and Group 2 will be labeled LinkedIn/Other. This comparative data analysis will include identification of factors based on importance and frequency of use related to competencies and roles of an online instructor. Comparative analysis will also explore the components of constructivist theory defined in the conceptual framework in comparison with the data found in the study. The analysis will also identify differences in perception of competencies based on sector, educational level, and years of experience between the comparative groups.

Factor Analysis

A multivariate technique called factorial analysis will be used to explore data for patterns, confirm hypotheses, and reduce many variables to a manageable view of data (Comrey & Lee, 1992). This approach to data analysis will allow the researcher to examine correlating variables, reduce data to identify correlations, and identify categories with similar factors. The factorial process used in this study will (a) determine the factors associated with each constructivist role, (b) extract factors using Principal Axis Factoring, and (c) examine rotation of terminal solutions using Promax with Kaiser Normalization. In this study, the researcher will examine the constructivist roles of an online instructor as a consultant, coach, constructivist designer, and collaborator and determine their variability based on frequency of use and importance of supporting competencies. Each role will be examined and compared for patterns and trends and to gain insight into dependencies within these variables. A pattern matrix will be used to illustrate correlations among and between the constructivist roles and their associated competencies. Factor extraction will be used to determine how many factor constructs are needed to account for the pattern of values found in a constructivist role (Kim & Mueller, 1978).

Table 10. Methodology Table

	Research Questions	Variables	Data Collection	Scale	Data Analysis
1	What are the perceived roles and constructivist competencies of an online instructor?	Constructivist competencies	Survey	Task-matching approach	n/a
a	How frequently are these competencies used by an online instructor in an online course?	Frequency of use	Survey	Ranking	ANCOVA
b	How important are these competencies for an online instructor in producing a quality online course?	Importance	Survey	Ranking	ANCOVA
c	Are there perceived differences in importance and frequently used competencies based on sector, educational level, and years of experience?	Sector Educational level Years of experience	Survey	Classify	MANOVA

Qualitative Analysis

A qualitative analysis was selected for this study based on the perceptions and experiences of online instructors who facilitate in an online learning environment. The attitudes and perceptions of faculty and students are factors that influence the success of an online program (Tanner, Noser & Totaro, 2009).

A qualitative analysis approach supports

> Constructivist paradigm and contends that multiple constructed realities abound,
>
> that time and context-free generalizations are neither desirable nor possible, that research is value bound, that it is impossible to fully differentiate causes and effects, that logic flows from specific to general and that the knower and known cannot be separated because the subjective knower is the only source of reality. (Johnson & Onwuegbuzie, 2004, p. 14)

A qualitative approach allows the researcher to understand the paradigms, realities that are faced in an online environment, and perceptions based on experiences of an online instructor that reflect the competencies of an online instructor. A paradigm may be viewed as a set of beliefs that deal with the ultimate or first principles (Guba & Lincoln, 1994). In this world of paradigms, we look for the participant's worldview. One of these paradigms that support how instructors view the world is the constructivism view (Merriam & Caffarella, 1999). Learners construct meaning through experience in a rich social learning environment. The philosophy of this epistemology is that people assimilate new knowledge by producing cognitive structures that are similar to the experiences they are engaged in (Gold, 2001). As instructors construct these new knowledge structures, it changes how they interact in a learning environment. By examining this constructivism approach, we examine the range of relationships and their connection to theory (Guba & Lincoln, 1994). In a qualitative research, participants are considered active subjects who confer a view to compromise and make up their realities through interaction with others and their social environment (Nicol & Pexman, 1999). According to Patton (1999), a qualitative research refers to people's understanding of the world, how they make sense of the world, and the experiences they have in the world. This study uses in-depth interviews wherein the researcher comes to understand the participant's beliefs, perceptions, and knowledge about a constructivist approach to learning. When exploring the field of online learning, a qualitative study would examine an online instructor's perception and professional behavior (competencies) in a specific online environment. In a qualitative study, the focus is on outcomes in a specific situation (Reaves, 1992). This study will focus on the characteristics of a quality online learning environment facilitated by instructors who possess certain behaviors, traits, educational backgrounds, experience teaching online, and knowledge about constructivist principles. These factors impact a professional (expert) online instructor's knowledge and expertise to understand what will work and what will not work in a constructivist learning environment. These qualities will also give the researcher insight into these practices, principles, and attributes of a quality online learning environment in order to develop a constructivist competency framework for an online instructor. This learner-supported environment is best constructed through structured (behavioral) interviews, observations, and questionnaires. According to Bogdan and Biklen (1998) a researcher selects a study approach because of an interest in understanding a phenomenon in a holistic manner. The literature obtained for this study has primarily focused on applying pedagogy principles to an online learning environment.

Qualitative Analysis

The following question will be addressed during the qualitative analysis of this study:

1. What are the perceived roles and constructivist competencies of an online instructor?

Quantitative Analysis

The quantitative analysis online instructors will be asked to rate the perceived importance and frequency (usage) of each constructivist task. An overall rating will be provided based on importance and usage (frequency) for each constructivist task. Quantitative analysis attempts precise measurement of something, determining facts and figures (Cooper & Schindler, 2006). This study will seek to answer the following subcategorized quantitative questions:

a. How frequently are these competencies used by an online instructor in an online course?

b. How important are these competencies for an online instructor in producing an online course?

c. Are there differences in perceptions of important and frequently used competencies based on sector, educational level, and years of experience?

Surveys will be used during quantitative analysis in which participants' responses are coded, categorized (Cooper & Schindler, 2006). Quantitative analysis will enable researchers to understand the importance and frequently used constructivist competencies. This data will serve as a baseline for ranking and prioritizing critical constructivist competencies for online instructors based on the results of the survey data. This data will give us insight into the competencies required to produce a quality learner-focused learning environment based on quantitative data. This will give researchers the ability to objectively view the results based on analysis of data given the importance and frequency of constructivist competencies.

Research Instrument

Instrument Content and Construct Validity

Golafshani (2003) explains construct validaity as the initial concept or hypothesis that determines which data is to be gathered and how it is be gathered. As part of content validity, experts will be given the opportunity to identify constructivist activities that they perform in an online learning environment. These tasks will be aligned with a standard performance statement that explains constructivist activities in a learning environment. This approach ensures that findings can be generalized to a larger group. The tasks identified are a subset of the performance (behavior) statements validated by resident experts. Experts will be asked to rate the perceived importance and frequency (usage) of each constructivist task. They will be asked to test each question and Likert scale ranking on importance and frequency of competency to ensure applicability for an online instructor and for content and construct validity. Construct validity seeks to validate the instrument based on inferences from participants to ensure it addresses the theoretical foundation of the study (Kimberlin & Winterstein, 2008). Experts will validate that the questionnaire addresses the premise that a quality online course is defined by the constructivist competencies utilized by an online instructor. This premise is captured through the perceptions of experts and practitioners who facilitate an online course. Experts will validate that the overall rating on the questionnaire (importance) for each constructivist performance (behavior) statement will address the skills, abilities, and knowledge for an online instructor. Previous studies have identified this as the best approach for identifying competencies for top performers (Richardson & Swan, 2003; Shea & Bidjerano, 2006; Young, 2006). Content validity will occur when expert online instructors are asked to validate the performance (behavior) statements based on a sample prototype. The performance (behavior) statements should address the knowledge, skills, and abilities of an online instructor functioning in a constructivist learning environment. This prototype will be used as a model for obtaining data from the practitioner population at International Association for K–12 Online Learning (iNACOL).

Reliability of Instrument

Reliability refers to the extent to which the instrument yields the same results over a period of time, repeatedly (Bogdan & Biklen, 1998). Reliability will be tested for this study by allowing expert participants to complete the instrument prototype and questionnaire using Survey Monkey during the initial competency modeling stages. This sample test will be given to experts during Stage 3 of the study. During Stage 5 of the study, practitioners will be given the opportunity to complete the survey. This form of test-retest reliability is measured through a parallel forms procedure in which one administers the same measurement instrument to the same individual (online instructors) under the same conditions after some period of time (Kimberlin & Winterstein, 2008).

CHAPTER 4
FINDINGS

This chapter will describe the findings of this study—specifically, the results of the data analysis. Chapter Four has four main sections: a) classification and identification of primary roles of an online instructor and constructivist competencies, b) practitioners' perception of important and frequently used competencies, c) experts' perception of competencies, d) analysis of research questions, and e) synthesized description of the themes across the experts and practitioners who participated in this study.

INTRODUCTION

The purpose of this study is to identify the constructivist competency framework for an online instructor, leading to improved existing performance systems that support the competencies of an online instructor. This section concludes with a synthesized description of the themes across the experts and practitioners who participated in this study. The following research questions are addressed in this study:

1. What are the perceived roles and constructivist competencies for an online instructor?
   a. How frequently are these competencies used by an online instructor in an online course?
   b. How important are these competencies for an online instructor

      in producing a quality online course?
   c. Are there differences in perceptions of important and frequently used competencies based on sector, educational level, and years of experience?

In this study, a two-phased approach was used to validate the constructivist competencies for online instructors. In the first phase, 10 experts were surveyed to identify the important constructivist competencies for an online instructor. In the second phase, practitioners were surveyed on the importance and frequency of usage of these constructivist competencies.

Study Procedures

Expert participants were asked to complete an online survey that provides a list of competencies (behaviors) expected of an online instructor who facilitates, mentors, and guides a learner through the learning process. This learning process is focused on creating an engaging, introspective, and participatory learning environment in which learners are accountable for constructing their own knowledge through focused discussion threads, problem-solving scenarios, and reflective learning tools. The instructor is responsible for creating a learning environment that facilitates the development of knowledge and construction of new mental models. These experts consisted of 10 individuals recognized as expert online instructors in the field based on their consulting experience, reputation in the industry, awards received in online learning, and successfully completed internal training and certification programs associated with university. In addition, they facilitated at least five online courses within the year and were recognized as reputable authors in the field of online learning. These experts were selected based on their expertise in mentoring online faculty and their experience in facilitating online courses. The experts were recruited via LinkedIn. Ten (10) expert participants were asked to validate the content of the proposed survey that identifies the constructivist competencies by completing a 45-minute survey. Each participant was sent a unique link that was specific to their email address as an identifier. A coding list was created within Survey Monkey containing the expert's name, email address, and unique identifier. This survey allowed participants to match constructivist competencies with defined categories. This validation process ensured that the terminology and descriptors used in the proposed model and practitioner survey accurately describe competencies and performance (behavior) descriptors. The content validation of survey and literature involved experts who instruct online courses and are defined as leaders in the field of online learning. Experts were given a task-matching exercise that describes the competencies and associated skills via an electronic survey, and they were asked to complete a form used to provide feedback on the survey and competency model along with performance (behavior) descriptors. This feedback was later used to revise the instrument used in the second phase of study by iNACOL practitioners. Experts were asked to validate the content of the survey instrument based on the literature. They were provided with descriptions of constructivist competencies and given associated performance (behaviors) statements. This group of experts was recruited and selected based on their expertise in the field of online learning, similar to the intended audience. The experts reviewed the instrument in terms of content, format, and audience appropriateness. They were given instructions on their role and purpose of survey. Once the expert panel reviewed the instrument and provided feedback along with suggestions for revision, the instrument was revised using the experts' comments for guidance. The least important competencies and performance (behavior) descriptions were eliminated. Themes were identified and documented based on the comments and results provided by the expert panel.

Study Procedures (Practitioners)

Next, 106 practitioners were asked to validate the competency model via an online electronic survey. A summary of the study and description of responsibilities of the participants was posted on iNACOL's membership website along with a link to the survey. The survey included a consent form, instructions, description of study, and competency model descriptions. The practitioner survey took approximately 30–45 minutes to complete. Participants could complete the survey at their own pace. The survey tool allowed participants to bookmark their progress as they completed the survey. Practitioner participants were asked to complete 11 demographical questions in Section 1 of the survey. In Section 2, participants was asked to complete a series of questions regarding the role and performance (behavior) descriptions associated with an online instructor. Participants were asked to complete two sections based on the frequency and importance of associated performance statements (descriptors). The participants were given the definitions associated with the terminology used in the survey. Participants' identity will be protected using an anonymous coding system. They were also given instructions on how to complete the survey.

CLASSIFICATION OF ROLES AND COMPETENCIES

Research Question #1: What are the perceived roles and constructivist competencies for an online instructor?

Table 11. Role Definition—Practitioners

Based on the definition of a constructivist online instructor provided in the instructions, how would you identify your role as a constructivist online instructor? (Check all that apply)		
Answer Options	**Response Percent**	**Response Count**
Consultant	36.8%	39
Cognitive Coach	63.2%	**67**
Constructivist Designer	52.8%	56
Collaborator	61.3%	**65**

106 participants (63.2%) defined their primary role as a Cognitive Coach who creates a learning environment where worked examples are used to illustrate ad guide learners in constructing their knowledge. Second, they perceived that a supporting role in an online learning environment is demonstrated as a Collaborator (61.3%). In a Collaborator role, an online instructor facilitates and guides a learner using focused discussion questions to construct and develop a learner's knowledge.

Table 12. Overall-Frequently Used Competencies-Practitioners *Items extracted after analysis

Overall Ranking of the Frequency of the Competencies	*1*	*2*	*3*	*4*	*5*	*Total*
1. Ability to guide learners by providing substantive feedback	0	2	6	34	64	478
2. Promote learner interaction through focused and engaging discussion threads using authentic tasks in a meaningful context rather than abstract instruction out of context*	1	2	10	41	51	454
3. Ability to motivate a learner in an online learning environment through use of relevant stories, practical worked examples and personal reflection	1	1	14	42	48	453
4. Empower learners to interpret and construct meaning based on their own experiences and class interactions	0	1	17	41	47	452
5. Ability to analyze a learner's performance using cognitive tools and formal assessments	0	2	17	42	45	448
6. Model higher order thinking by formulating questions to probe a learner's comprehension of core concepts	0	1	20	41	44	446
7. Ability to demonstrate a task and model performance through a focused activity or worked example	2	3	15	53	33	430
8. Ability to articulate the reasoning that learners should use when engaged in performing an activity, task or assessment	3	2	20	47	34	425
9. Ability to present a problem in a manner that allows the learner to build knowledge in a reflective and analytical manner	1	5	21	46	33	423
10. Generate new ideas that promote critical thinking and problem solving skills in a collaborative learning environment	3	4	17	44	37	423
11. Ability to design instructional content that can be used to solve a problem or scenario	4	4	18	52	28	414
12. Ability to provide worked examples to solve complex problems by using cues and associations to promote decision-making and reasoning skills	3	3	19	61	20	410
13. Consult with learner on alternative approaches to solve a problem or gain a different perspective on a topic	2	3	26	51	24	410
14. Mentor learners in usage of collaborative tools (e.g. online chats, eBooks, electronic portfolios)*	3	7	20	54	22	403
15. Ability to design instructional materials (e.g worked examples, case studies, virtual labs) that enables a learner to build knowledge in a reflective and analytical manner	6	8	17	45	30	403
16. Ability to design and create complex scenarios that allow students to make decisions and select alternative methods	0	12	31	40	23	392
17. Ability to engage a group of learners in discussion of content that can be used to solve a problem or design a project or portfolio	6	9	24	37	29	389
18. Ability to stimulate a learner by creating materials based on real authentic problems using collaborative tools, such as; podcasts, blogs, online chats, videos, online games, and simulations	8	9	25	34	30	387
19. Ability to design social communities that promote engagement and conversation by learners to peer(s) or instructor(s)	8	10	24	32	31	383
20. Ability to create a collaborative online environment through the construction of knowledge and social negotiation	6	9	25	42	23	382
21. Ability to adjust learning problems and scenarios based on difficulty and complexity of a learner's ability to comprehend situations*	6	9	29	41	21	380
22. Collaborate with learners on alternative interpretations of a topic or problem	4	11	31	38	21	376
23. Ability to promote team dynamics and engagement about a project or scenario through team forums and team chat rooms	14	14	28	29	20	342
24. Ability to model collaboration techniques when solving a problem through consensus building activities	13	13	40	23	16	331
25. Ability to coach a learner using online chat feature*	19	19	28	26	14	315

Research Question #1a. How frequently are these competencies used by an online instructor in an online course? As consultants, practitioners perceived that the frequently used competencies consisted in their ability to provide worked examples to solve complex problems using cues and associations. This competency supports the constructivist principle that learners should use decision-making and reasoning skills to understand the complexities of a problem. Constructivist learning environments must be designed to engage the learner in complex thinking exercises that require reasoning and investigation of the problem (Greening, 1998). This validates the need for an instructor to understand problem-based principles associated with being a consultant in a constructivist learning environment. In this role as a consultant, practitioners also perceived that consulting with a learner on providing alternative approaches to problem-solving is a behavior frequently used in a constructivist environment. The goal of a constructivist environment is to allow the learner to construct new knowledge by gaining a different perspective on a topic. This supports the premise that mentoring and modeling are core behaviors that support a constructivist learning environment through overt performance.

Table 13. Frequently Used Competencies as a Consultant

Overall Ranking of Frequently Used Competencies	**Total**
1. Ability to demonstrate a task and model performance through a focused activity or worked example	430
2. Ability to articulate the reasoning that learners should use when engaged in performing an activity, task, or assessment	425
3. Ability to provide worked examples to solve complex problems by using cues and associations to promote decision-making and reasoning skills	410
4. Consult with learner on alternative approaches to solve a problem or gain a different perspective on a topic	410

Research Question #1a. How frequently are these competencies used by an online instructor in an online course? As a cognitive coach, practitioners perceived that the frequently used competencies consisted in empowering learners to interpret and construct meaning based on their own experiences. According to Siemens (2005), the foundation of the connectivism model is focused on allowing the learner to explore and research current information and create new mental models. In their role as a cognitive coach, an online instructor empowers learners by providing the relevant tools and resources to construct meaning based on their experiences. In a constructivist environment, it is assumed that knowledge cannot be transmitted through traditional methods, but instruction consists of experiences that facilitate knowledge (Jonassen, et al., 1998). This behavior of a cognitive coach to empower and motivate a learner supports the primary focus of an online instructor who has transitioned from subject matter expert to performance coach (Coppola, et al., 2002).

Table 14. Frequently Used Competencies as a Cognitive Coach

Overall Ranking of Frequently Used Competencies	**Total**
1. Ability to guide learners by providing substantive feedback	478
2. Empower learners to interpret and construct meaning based on their own experiences and class interactions	452
3. Ability to motivate a learner in an online learning environment through use of relevant stories, practical worked examples, and personal reflection	453
4. Ability to analyze a learner's performance using cognitive tools and formal assessments	448
5. Model higher-order thinking by formulating questions to probe a learner's comprehension of core concepts	446

Research Question #1a. How frequently are these competencies used by an online instructor in an online course? As a constructivist designer, it is important to present a problem in an analytical manner that supports the mental construct of a learner. This behavior was recognized as important by practitioners in the knowledge construction of a learner. Constructivist design principles encourage the development of real-world scenarios or case-based learning (Jonassen, 2004). These real-world scenarios provide the opportunity for a designer to make the learning come to life in a protected learning environment. Practitioners recognized that this behavior is important in their role as a constructivist designer.

Table 15. Frequently Used Competencies as a Constructivist Designer

Overall Ranking of Frequently Used Competencies **Role as a Constructivist Designer**	**Total**
1. Ability to present a problem in a manner that allows the learner to build knowledge in a reflective and analytical manner	423
2. Ability to design instructional content that can be used to solve a problem or scenario	414
3. Ability to design instructional materials (e.g., worked examples, case studies, virtual labs) that enable a learner to build knowledge in a reflective and analytical manner	403
4. Ability to design and create complex scenarios that allow students to make decisions and select alternative methods	392
5. Ability to stimulate a learner by creating materials based on real authentic problems using collaborative tools, such as podcasts, blogs, online chats, videos, online games, and simulations	387
6. Ability to adjust learning problems and scenarios based on difficulty and complexity of a learner’s ability to comprehend situations	380

Research Question #1a. How frequently are these competencies used by an online instructor in an online course? In their role as a collaborator, practitioners recognized that creating discussion threads focused on authentic tasks is an important behavior in an online environment. This interaction is needed to create a collaborative learning environment. Berge believed that distance learning courses should be carefully planned to meet the learning needs of students while providing a unique online environments that builds social communities and networks (Berge, 1995). This social community is critical to how a learner engages and participates in an online course. This supportive collaborative environment is important to promoting critical thinking and problem-solving skills as well as social skills. Constructivism is rooted in the practice of individuals constructing their knowledge based on realities, experiences, interactions with others, and maturity levels (Rovai, 2003).

Table 16. Frequently Used Competencies as a Collaborator

Overall Ranking of Frequently Used Competencies **Role as a Collaborator**	**Total**
1. Promote learner interaction through focused and engaging discussion threads using authentic tasks in a meaningful context rather than abstract instruction out of context	454
2. Generate new ideas that promote critical thinking and problem-solving skills in a collaborative learning environment	423
3. Ability to engage a group of learners in discussion of content that can be used to solve a problem or design a project or portfolio	389
4. Ability to design social communities that promote engagement and conversation by learners to peer(s) or instructor(s)	383
5. Ability to create a collaborative online environment through the construction of knowledge and social negotiation	382

Table 17. Overall-Important Competencies-Practitioners*Items extracted after analysis

Overall Ranking of the Importance of the Competencies	*1*	*2*	*3*	*4*	*5*	*Total*
1. Ability to guide learners by providing substantive feedback	0	0	5	33	68	487
2. Model higher order thinking by formulating questions to probe a learner's comprehension of core concepts	1	1	4	44	56	471
3. Empower learners to interpret and construct meaning based on their own experiences and class interactions	0	3	7	42	54	465
4. Ability to motivate a learner in an online learning environment through use of relevant stories, practical worked examples and personal reflection	0	1	14	35	56	464
5. Promote learner interaction through focused and engaging discussion threads using authentic tasks in a meaningful context rather than abstract instruction out of context*	0	0	8	48	49	461
6. Ability to demonstrate a task and model performance through a focused activity or worked example	0	3	6	50	47	459
7. Consult with learner on alternative approaches to solve a problem or gain a different perspective on a topic	0	3	10	54	39	447
8. Ability to analyze a learner's performance using cognitive tools and formal assessments	0	3	12	50	41	447
9. Ability to present a problem in a manner that allows the learner to build knowledge in a reflective and analytical manner	2	0	12	51	41	447
10. Ability to articulate the reasoning that learners should use when engaged in performing an activity, task or assessment	3	2	16	35	50	445
11. Ability to design instructional content that can be used to solve a problem or scenario	0	4	12	51	39	443
12. Generate new ideas that promote critical thinking and problem solving skills in a collaborative learning environment	1	2	14	44	44	443
13. Ability to adjust learning problems and scenarios based on difficulty and complexity of a learner's ability to comprehend situations*	1	4	12	50	39	440
14. Ability to provide worked examples to solve complex problems by using cues and associations to promote decision-making and reasoning skills	4	2	11	47	42	439
15. Ability to design instructional materials (e.g worked examples, case studies, virtual labs) that enables a learner to build knowledge in a reflective and analytical manner	2	4	11	55	34	433
16. Ability to engage a group of learners in discussion of content that can be used to solve a problem or design a project or portfolio	2	3	18	42	40	430
17. Ability to stimulate a learner by creating materials based on real authentic problems using collaborative tools, such as; podcasts, blogs, online chats, videos, online games, and simulations	2	5	18	42	39	429
18. Ability to design and create complex scenarios that allow students to make decisions and select alternative methods	2	4	20	46	34	424
19. Mentor learners in usage of collaborative tools (e.g. online chats, eBooks, electronic portfolios)*	2	7	13	53	31	422
20. Ability to design social communities that promote engagement and conversation by learners to peer(s) or instructor(s)	3	5	15	50	32	418
21. Ability to create a collaborative online environment through the construction of knowledge and social negotiation	4	1	22	47	31	415
22. Collaborate with learners on alternative interpretations of a topic or problem	3	3	24	50	25	406
23. Ability to promote team dynamics and engagement about a project or scenario through team forums and team chat rooms	5	10	20	46	24	389
24. Ability to model collaboration techniques when solving a problem through consensus building activities	3	11	30	37	24	383
25. Ability to coach a learner using online chat feature*	7	12	39	31	17	357

Research Question 1b. How important are these competencies for an online instructor?

In their role as a consultant, practitioners recognized the importance of problem-based learning in a constructivist environment. The ability of a consultant to provide realistic worked examples as a frame of reference is important to how they promote a constructivist learning environment. In a problem-based learning environment, the online instructor consults and coaches a learner on creating different perspectives. This supports the constructivist design principles that learning results from exploration of multiple perspectives (Richey et al., 2011). These multiple perspectives enable a learner to formulate enhanced mental models that support their construction of knowledge. Problem-based learning is driven by an instructor presenting challenging open-ended problems with no one right answer; problems are context driven, student work is self-directed, and teachers adopt the role as a facilitator who guides the learning process. PBL is focused on having students apply knowledge to new situations. An important component of utilizing PBL as an instructional strategy is the ability of an instructor to encourage and create a collaborative learning environment (Yew & Schmidt, 2012).

Table 18. Role as Consultant—Important Competencies

Overall Ranking of Important Competencies **Role as a Consultant**	**Total**
1. Ability to demonstrate a task and model performance through a focused activity or worked example	459
2. Consult with learner on alternative approaches to solve a problem or gain a different perspective on a topic	447
3. Ability to articulate the reasoning that learners should use when engaged in performing an activity, task, or assessment	445
4. Ability to provide worked examples to solve complex problems by using cues and associations to promote decision-making and reasoning skills	439

Research Question 1b. How important are these competencies for an online instructor?

As a cognitive coach, practitioners realized that it is important to empower learners to interpret and construct meaning based on their own experiences. The ability of a cognitive coach to demonstrate this core skill is best illustrated through the use of cognitive tools such as relevant stories, practical worked examples, and personal reflection journals. Jonassen believed this partnership between cognitive tools and the learner will enable learners to articulate what they know, reflect on what they learn, support the internal negotiation of meaning making, and develop personal representation of new knowledge (Huang, 2002). Practitioners recognized that a learner must have the necessary cognitive tools to develop a strong mental construct to achieve optimal performance in an online learning environment.

Table 19. Role as Cognitive Coach—Important Competencies

Overall Ranking of Important Competencies **Role as a Cognitive Coach**	**Total**
1. Empower learners to interpret and construct meaning based on their own experiences and class interactions	465
2. Ability to motivate a learner in an online learning environment through use of relevant stories, practical worked examples, and personal reflection	464
3. Ability to analyze a learner's performance using cognitive tools and formal assessments	447

Research Question 1b. How important are these competencies for an online instructor?

Practitioners recognized that course materials must be presented in a manner that facilitates the knowledge of a learner through problems or scenarios. This connection and interaction between a problem and the design of a course creates the interaction needed to facilitate knowledge and construct meaning for a learner. This approach to design based on problem-solving enables learners to transform how they view a situation. According to Mezirow (2000), transformative learning theory is a way of problem solving that enables an instructor to define or reframe a problem in order to promote critical-thinking skills in a learner. This learning theory is focused on providing insight and reflection through the usage of problems. This approach to designing interactive activities and scenarios is a new behavior for most online instructors. According to Fink (2003), “Faculty knowledge about course design is the most significant bottleneck to better teaching and learning in higher education” (p. 23). Core design and development is fundamental to creating engaging and interactive activities for an online course.

Table 20. Role as Constructivist Designer—Important Competencies

Overall Ranking of Important Competencies **Role as a Constructivist Designer**	**Total**
1. Ability to present a problem in a manner that allows the learner to build knowledge in a reflective and analytical manner	447
2. Ability to design instructional materials (e.g., worked examples, case studies, virtual labs) that enable a learner to build knowledge in a reflective and analytical manner	433
3. Ability to stimulate a learner by creating materials based on real authentic problems using collaborative tools, such as podcasts, blogs, online chats, videos, online games, and simulations	429
4. Ability to design and create complex scenarios that allow students to make decisions and select alternative methods	424

Research Question 1b. How important are these competencies for an online instructor?

As a collaborator, an online instructor should create a collaborative and engaging online environment. This interaction is core to the success of a quality online learning environment (Moore, 1989). Online instructors believed that discussion threads allow students to collaborate and share ideas with one another, but they also allow the instructor to measure the current level of understanding and suggest appropriate resources to enhance that understanding. Moore (1989) made the distinction between the various types of interaction that can occur in an online learning environment, defining these as learner-teacher, learner-content, and learner-learner interactions. Moore believed the most difficult challenge in an online learning environment was creating the learner-to-learner interaction. This important behavior for online instructors enables them to promote problem-solving and critical-thinking skills for a learner.

Table 21. Role as Collaborator—Important Comptencies

Overall Ranking of Important Competencies **Role as a Collaborator**	**Total**
1. Generate new ideas that promote critical thinking and problem-solving skills in a collaborative learning environment	443
2. Ability to engage a group of learners in discussion of content that can be used to solve a problem or design a project or portfolio	430
3. Ability to design social communities that promote engagement and conversation by learners to peer(s) or instructor(s)	418
4. Ability to create a collaborative online environment through the construction of knowledge and social negotiation	415

ANALYSIS OF DATA (PRACTITIONERS)

The demographical information of 106 practitioners was captured to determine their level of expertise as an online instructor to explain their differences in perception based on sector, educational level, and years of experience.

Demographical Information

Study Population

The demographical information for 106 practitioners provided a view of the expertise, experience, role, and background as an online instructor. The research study focused on surveying online instructors from LinkedIn (discussion forum), iNACOL (includes Georgia Virtual School, Michigan Virtual University), and other organizations that hire online instructors, such as University of Phoenix, Illinois Virtual University, Sloan Consortium, Strayer University, Art Institute of Tampa, and University of Illinois. Practitioner participants were solicited from LinkedIn, and proposals were submitted to schools in partnership with iNACOL.

Table 22. Organization Affiliation—Practitioner

Please identify your organization affiliation for obtaining access to this survey.		
Answer Options	**Response Percent**	**Response Count**
iNACOL (International Association for K–12 Online Learning)	4.7%	5
Georgia Virtual School	1.9%	2
LinkedIn (Discussion forum)	47.2%	50
Michigan Virtual University	11.3%	12
Other (please specify)- Sloan Consortium, University of Phoenix, Strayer University, Art Institute of Tampa, University of Illinois and Illinois Virtual	34.9%	37
N=		**106**

Years of Experience

When practitioners were asked to identify their years of experience as an online instructor, 64.15% identified that they had five or more years of experience facilitating an online course. This level of expertise provides insight into the level of expertise of survey practitioners facilitating in an online environment. This insight allows us to understand the range of experience obtained by practitioners as they continue to develop their expertise as online instructors.

Professional Certifications and Awards

As the field of online learning evolves, it is clear that online instructors will need to maintain ongoing career development and be recognized for their expertise in the field. The results clearly identify that online instructors may not have time to maintain their skills and expertise as they gain experience as an online instructor. Additional research states that institutional and monetary support (rewards) for the pedagogical competency of online instructors would most significantly affect the success of their online programs (Kim, 2006).

Table 23. Professional Certifications—Practitioner

Please identify the number of professional certifications and awards received within the last five years related to your experience as an online instructor.		
Answer Options	**Response Percent**	**Response Count**
0	36.8%	39
1	22.6%	24
2	15.1%	16
3	11.3%	12
4	1.9%	2
5 or more	12.3%	13
Other (please specify)		0
N=		**106**

Ongoing Training

Professional development is core to maintaining relevant skills as an online instructor; 81% of practitioners recognized the need for ongoing professional development through professional development workshops, and 58.5% recognized the need for annual professional development workshops in order to stay current in their skills as online instructors. In addition, 56.6% maintained their skills through webinars offered online. Practitioners recognized that certification programs, online mentoring sessions, and local campus faculty development were a part of how they develop their skills as online instructors. This insight reflects the need for online instructors to maintain their development through traditional and nontraditional opportunities offered either online or on their local campus. This recognizes that online instructors need to develop a social connection for professional development through mentoring and informal mentoring in order to grow in their role as an online instructor.

Table 24. On going Training—Practitioner

Please identify the type of training programs you have completed (as a participant) since becoming an online instructor?		
Answer Options	**Response Percent**	**Response Count**
Annual Professional Development Workshops	58.5%	62
Certification Program	40.6%	43
Local Campus Faculty Development Workshops	50.9%	54
Online Mentoring Session	32.1%	34
Professional Development Workshops	81.1%	86
Webinar in Online Learning	56.6%	60
None	2.8%	3
Other (please specify)		6
N=		**106**

Field of Study

In this study, the researcher recognized that online instructors are subject matter experts (SMEs) in different disciplines. These disciplines (fields of study) allow an instructor to develop expertise in their role. This expertise influences how instructors are developed in their role as an online instructor; 51.9% of “other” practitioner participants categorized themselves as practicing in the field of psychology, performance improvement, nursing, music, spanish, healthcare, social work, history, criminal justice, economics, chemistry, library science, graphic arts, sports management, theology/religion, sociology, or human resources.

Table 25. Field of Study—Practitioner

Please list your field of study. You can select more than one answer for this question.		
Answer Options	**Response Percent**	**Response Count**
Business Administration	9.4%	10
Education	34.9%	37
Human Resources	3.8%	4
Instructional Technology	16.0%	17
Entry level courses	7.5%	8
Communications	4.7%	5
English	10.4%	11
Language Arts	5.7%	6
Math	5.7%	6
Technology	19.8%	21
Other	9.4%	10
Other (please specify)	51.9%	55
N=		**106**

Educational Level

In this study, 57.5% of practitioner participants for this study had obtained a master's degree and 33% had completed their doctoral degree. Other participants identified their educational level as pending completion of dissertation. The participants' educational levels support the assumption that online instructors actively seek to maintain their skills and credentials in their field, supporting the theory that online instructors maintain their educational levels to stay current in their field of study.

Table 26. Educational Level—Practitioner

Please identify the highest educational level you have achieved:		
Answer Options	**Response Percent**	**Response Count**
Associate's degree	0.9%	1
Bachelor's degree	1.9%	2
Master's degree	57.5%	61
Doctoral degree	33.0%	35
Other	6.6%	7
N=		**106**

Sector or College

In this research study, 24.5 % of practitioners identified their relevant sector or college as the College of Education. Participants who selected "other" included a response of college of engineering, college of social sciences, health sciences, nursing, college of advanced studies, college of criminal justice, college of business, college of library sciences, distance education, college of professional and continuing studies, college of arts & sciences, college of counseling and career technologies.

Table 27. Sector or College—Practitioner

Please identify your sector or college that you currently work in within your university. You can select more than one answer for this question.		
Answer Options	**Response Percent**	**Response Count**
College of Education	24.5%	26
College of Humanities	15.1%	16
College of Information Technology	11.3%	12
College of Liberal Arts	6.6%	7
College of Social Work	1.9%	2
Not Applicable	13.2%	14
Other (please specify)	41.5%	44
N=		**106**

Employment Status

In online learning most institutions are employing online instructors as adjunct (part-time) faculty; 62.3% of practitioners are employed part-time, working less than 39 hours per week. This employment status reflects the trend in online learning of how institutions are searching for methods to employ qualified faculty but at reduced costs. Institutions often consider using “cheap labor replacing expensive labor” as a substitution for full-time quality faculty (Berge, 2000). This trend will erode the pool of quality online instructors unless we develop certification standards for hiring, onboarding, and training instructors to be effective regardless of employment status. Only 30.2% of practitioners classified their employment status as full-time, working 40 hours or more per week.

Table 28. Employment Status—Practitioner

Please identify your employment status as an online instructor.		
Answer Options	**Response Percent**	**Response Count**
Employed full-time, working 40 or more hours per week	30.2%	32
Employed part-time, working 1–39 hours per week	62.3%	66
Not employed, looking for work in online environment	4.7%	5
Not employed, NOT looking for work in online environment	1.9%	2
Retired	0.9%	1
N=		**106**

Teaching Experience

Longevity in the field of online learning is evident by the number of courses that an online instructor facilitates. The number of courses that online instructors facilitate illustrates the depth and breadth of their experience in navigating the online learning environment. In this study, 39.6% of participants facilitated seven or more online courses within a year.

Table 29. Teaching Experience—Practitioner

Please identify the number of online courses you instruct (teach) within a one year timeframe.		
Answer Options	**Response Percent**	**Response Count**
0	0.9%	1
1	12.3%	13
2	10.4%	11
3	11.3%	12
4	8.5%	9
5	4.7%	5
6	12.3%	13
7 or more	39.6%	42
***N*=**		**106**

Role Definition of Practitioners

What are the perceived roles and constructivist competencies for an online instructor?

The following provides the results of how each practitioner identified his or her constructivist online instructor role as a Constructivist Consultant, Cognitive Coach, Constructivist Designer, and Collaborator. Participants had the opportunity to identify more than one role in response to this question.

Definitions provided to participants in the survey:

A **constructivist consultant** is an instructor who can mentor and model constructivist behaviors in an online learning environment by providing examples of desired behavior through overt performance.

A **cognitive coach** has the ability to empower learners to interpret and construct meaning based on their own experiences and interactions.

A **constructivist designer** has the ability to design instructional materials and promote critical-thinking skills in a learner using well-structured or ill-structured problems.

As a **collaborator,** an online instructor would promote learner engagement and interaction through focused discussion threads in a collaborative learning environment.

Table 30. Role Definition—Practitioner

Based on the definition of a constructivist online instructor provided in the instructions. How would you identify your role as a constructivist online instructor? (Check all that apply)		
Answer Options	**Response Percent**	**Response Count n=106**
Consultant	36.8%	39
Cognitive Coach	63.2%	**67**
Constructivist Designer	52.8%	56
Collaborator	61.3%	**65**

Practitioner participants identified their primary role as Cognitive Coach (63.2%), Collaborator (61.3%), Constructivist Designer (52.8%), and Consultant (36.8%) in response to this question based on the definitions provided in the survey. The majority of respondents mentioned that they see these roles as interchangeable with that of an online instructor.

Cognitive Coach

Participants responded with explanations that supported how they allow students to interpret meaning through activities and discussion threads as a Cognitive Coach (63.2%). Participants also mentioned that in their role as a Cognitive Coach, they empower their learners by providing opportunities to discuss, interpret, and construct meaning of a topic or concept. This interpretation as a coach was also illustrated by taking a student's life experiences and using them as examples related to the theories in the textbook along with allowing students to provide parallel examples specific to materials presented in the course content. Several online instructors mentioned that learners gain more meaning and understanding when concepts can be applied to their experiences and specific interactions. Online instructors also provide the opportunity for learners to weave their own personal and professional experiences into the discussions. The online instructors mentioned the need for learners to take responsibility for their own learning and be held accountable for the outcomes. They felt this was the key focus of a Cognitive Coach. Online instructors also mentioned the need to be a coach or guide for a learner in the learning process and to provide specific guidance and coaching of students that facilitates learning and makes the learner feel comfortable asking for support when necessary. Online instructors mentioned the need to construct principles or explain theories but felt it imperative to create an environment in which learners linked the course concepts with their own experiences at home or work. Based on these experiences, online instructors felt that there was no one right answer and encouraged students to be creative in their approach. As a Cognitive Coach, some online instructors require their students to write papers and share examples of concepts and theories as they relate to their personal life experiences. Online instructors believed that the course content and topic played a major role in how much personal interpretation could be utilized in an online course. They implied that the some topics, such as statistics, could utilize a student's experiences to construct knowledge, while other topics, such as nursing, required application of principles and practices through labs or hands-on-workshops. The online instructors also realized that helping their students learn how to utilize information and communicate effectively within an academic environment is important in their role as a Cognitive Coach. Online instructors mentioned several approaches to coaching students using the Socratic or sandwich method(s) to expand their knowledge and understanding of their chosen field of study. Online instructors mentioned the need to analyze, synthesize, and evaluate instead of just describing a concept in an online course. Participants felt the need to explore and be creative in their approach to building knowledge and incorporating a learner's experiences into the course without "derailing" the focus of the discussion. As mentioned by a participant, "Creativity is a strong part of quality work in my courses." In their role as a Cognitive Coach, the online instructors believed that it was their responsibility to guide, not dictate the approach, to facilitate the transfer of knowledge and experiences. As a Cognitive Coach, online instructors felt the need to provide relevant examples of how to implement desired behaviors or new knowledge in a systematic or cognitive manner. An online instructor mentioned that he or she spends about 60% of the time working directly with students to help them develop critical-thinking skills and promote engagement through discussion board threads. Several online instructors mentioned that they have basic state and federal standards (core curriculum) that must be adhered when facilitating an online course. Deviating from these standards would disrupt the balance of expectations set by both the university and the state. As online instructors, their role is to guide students through the curriculum, helping in areas where students specifically struggle. This time constraint can sometimes limit the role of an online instructor as a coach. As an online instructor, coaching is a skill that is developed with practice and experience facilitating an online course. As online instructors transition from transmitter of information to cognitive coach, they must believe that they have a vested interest in the growth and development of each online learner. Participants perceived that the role of a cognitive coach was critical to developing an effective and quality online course.

Collaborator

In this study, online practitioners described their role as a Collaborator (61.3%) by explaining the collaborative techniques they use to create a learner-focused environment. These techniques focused on cultivating an environment that promotes engagement of discussion and collaboration of ideas to gain an understanding of the course materials. Online instructors mentioned the need for collaborating frequently with students when discussing approaches to real world issues that they are encountering during the course of study. This collaboration was mentioned in various formats, such as responses to students' emails and participation in discussion threads. This collaboration and interaction will ultimately determine how successful the student will be in an online course (Moore, 2004). In their role as a Collaborator, online instructors believed that creating "rich" discussion threads that engage student participation is important to in their role as a collaborator. The focus of these rich discussion threads should be to provide relevant and detailed examples along with opportunities to practice. Online instructors believed that discussion threads allow students to collaborate and share ideas with one another, but they also allow the instructor to measure the current level of understanding and suggest appropriate resources to enhance that understanding. In their role as a collaborator, an online instructor felt they should collaborate and facilitate learning via meaningful learning experiences that move the student through the stages of Bloom's Taxonomy. As a collaborator they (online instructors) felt that learning should be connected to the world of work and that developing and building a solid community facilitates the learning process. Online instructors (participants) acknowledged that this community should allow the opportunity for participants to share knowledge based on their own experiences and on the experiences of those close to them while sharing cultural and value perspectives. These experiences add value and richness to the online learning environment. The cognitive coach role is to assist learners in interpreting the content and constructing knowledge based on their (learners) experiences, thus allowing the learners to apply concepts and make connections to the real world.

Constructivist Designer

In this research, 52.8% of practitioners believed that in their role as constructivist designer role, they are responsible for creating activities that allow students to explore different perspectives on a topic. The ability to design activities, discussion threads, exercises, practice labs, coaching sessions, job aids, and Web-based courses is core to their role as an online instructor based on institutional requirements. Several online instructors are provided with instructional designers or coaches to support their efforts to create engaging course materials. As mentioned by a participant, "In my role as a subject matter expert, I can mentor, guide, and facilitate the learning of others." Online instructors also realized that as part of being constructivist designers, they must coach learners in understanding concepts through the activities and exercises that they design for their courses. Some online instructors have done minor and moderate revisions on courses to improve them so that they are more user-friendly and inspire greater cognitive awareness within each student but don't see this as a major role in their job as an online instructor. In essence, online instructors should individualize and differentiate instruction based on the needs of the learner. Online instructors mentioned their ability to use supplemental assignments or tasks that compel students to think on their own while reflecting on developing altered levels (mental models) of understanding. Online instructors believed that this supplemental material is critical to developing the mental constructs that support the development of a learner in the real world. An instructor mentioned that 40% of his or her time is spent working with other instructors and content designers to model the development of good assignments with clear directions and well-developed rubrics. Online instructors perceived that the course materials are core to facilitating an effective online course, recognizing that these materials should incorporate focused activities that motivate a learner to engage in the entire course experience. As stated by one participant, "The ability to design instructional materials and promote critical thinking skills in a learner using well-structured or ill-structured problems—this accurately describes the design I use in my teaching."

Consultant

In this research, 36.8% of participants believed that in their role as a Consultant they are a role model for their learner. In this role, online instructors mentioned the need to mentor to allow students to absorb the vast amount of information required in an online learning environment in a short amount of time. Typically, an online course ranges from six to nine weeks in duration. Online instructors mentioned the need to consult with other schools on best practices in their role as a consultant. This collaboration with peers provides an instructor with the ability to consult with other instructors on how to address challenges they face in an online learning environment. Consulting requires a unique set of skills to collaborate, share, discuss, and prescribe solutions for challenges. In a constructivist consultant role, online instructors stated they are always consulting with other students, internal departments, designers, instructors, government organizations, and business leaders. It was also mentioned that in their role as a full-time consultant, they must learn how to navigate complex project work involving clients and other stakeholders in sponsoring organizations. This complex work includes administrative tasks, committee representation, and teams collaborating on how to manage the ever-changing world of online learning. Participants also mentioned the dual role of an online instructor as a consultant. In this role, an online instructor is expected to mentor and consult with students on tasks as a subject matter expert as well as consult with their peers on best practices in their field. The majority of online instructors felt that they lacked the mentoring within the online community to become effective facilitators. When it comes to understanding what will work in an online environment, most instructors felt this experience was obtained through trial and error, especially for a new instructor. The majority of instructors understood their role as a consultant in the online learning environment, but few had the time to consult with other faculty except during professional development workshops, online mentoring sessions, and local campus professional development workshops. This rationale supports the online instructors' perception of the lack of structured faculty development for part-time instructors. This perception has inhibited the opportunities for part-time instructors to gain the skills needed to support their development as they evolve in their role as a consultant. The other side of consulting for an online instructor is focused on mentoring and modeling students in the behaviors they expect of their students. The majority of instructors offer examples through project creation, formal composition, and discussion forums. This behavior is emulated in the structure of the course (i.e., the agenda and class forum set up prior to the start of a class), design of activities (i.e., relevant worked examples and case studies), substantive feedback (i.e., just-in-time feedback through a structured rubric), and course completion requirements (i.e., posting grades in a timely manner). As a role model and consultant, online instructors cannot underestimate their influence on their learners, even in an online learning environment. This lack of physical presence doesn't eliminate the need for an instructor to be a role model. This presence is provided by actively engaging in online discussion threads, replying to students' questions in a timely manner, and providing substantive feedback. These behaviors reflect engaged instructors who are interested in their learners' performance while performing in their role as a consultant.

Role Description Summary

As one participant stated, "Oscillating among roles, as needed, will help students attain real world experience that serve as a guide by side rather than sage on stage." This supports the principles of a constructivist learning environment. Participants felt these roles clearly defined who they are and what they do as facilitators. A central theme in this research is that online instructors must learn to embrace these roles to create a balanced learner experience. The learner's needs must be the primary focus for any online instructor. Online instructors mentioned that they have to set the requirements for what will be expected of a learner in applying what they've learned to real-world scenarios. In this research, there appeared to be an overlap of roles as online instructors evolve in their approach and use of various collaborative tools. As a result, most online instructors saw a strong correlation between their roles as

Cognitive Coach and Collaborator. Participants perceived that in their role as an online instructor, they can function in multiple roles at any time while conducting an online course. This triangulation of roles reflects the essence of career and competency development needed for an online instructor to remain effective in an online class environment.

Factor Analysis

The Importance of the Competencies—Validity

A factor analysis using Principal Axis Factoring and Promax Oblique Rotation was performed to observe the potential constructs on the importance data of the competencies. The Kaiser-Meyer-Olkin measure of sampling adequacy value was .814, and Bartlett's Test of Sphericity yielded a significant result, $\chi 2$ (210) = 1203.261, $p < .01$. These test results demonstrated that the data were appropriate for factor analysis (Tabachnick, Fidell & Osterlind, 2001). The first solution yielded seven factors identified based on Eigen value criteria, meaning they were higher than one. However, in the seven-factor solution, the last three factors had only one or two items. For this reason, the analysis was run again, and at this time, the number of the factors was constrained to four. The four-factor solution produced a better factor structure than the seven-factor one. The results of the four-factor analysis are presented in the following section. The four-factor solution accounted for 61.29% of the total variance. There were four items extracted from the analysis because they were hindering the validity of the model; for instance, they did not have a loading value higher than .300 under of any of the factors. The pattern matrix of the analysis is presented below.

Table 31. The Four-Factor Solution of the Important Competencies Data

		Factor 1	Factor 2	Factor 3	Factor 4
		Collaborator	Designer	Cognitive Coach	Consultant
1.	Generate new ideas that promote critical-thinking and problem-solving skills in a collaborative learning environment	0,439			
2.	Ability to create a collaborative online environment through the construction of knowledge and social negotiation	0,668			
3.	Ability to engage a group of learners in discussion of content that can be used to solve a problem or design a project or portfolio	0,609			
4.	Ability to design social communities that promote engagement and conversation by learners to peer(s) or instructor(s)	0,619			
5.	Collaborate with learners on alternative interpretations of a topic or problem	0,673			
6.	Ability to promote team dynamics and engagement about a project or scenario through team forums and team chat rooms	0,893			
7.	Ability to model collaboration techniques when solving a problem through consensus-building activities	0,927			
8.	Ability to present a problem in a manner that allows the learner to build knowledge in a reflective and analytical way		0,626		
9.	Ability to design and create complex scenarios that allow students to make decisions and select alternative methods		0,741		
10.	Ability to stimulate a learner by creating materials based on real authentic problems using collaborative tools, such as podcasts, blogs, online chats, videos, online games, and simulations		0,613		
11.	Ability to design instructional materials (e.g., worked examples, case studies, virtual labs) that enable a learner to build knowledge in a reflective and analytical manner		0,963		
12.	Ability to design instructional content that can be used to solve a problem or scenario		0,511		

13. Empower learners to interpret and construct meaning based on their own experiences and class interactions	0,423	
14. Ability to motivate a learner in an online learning environment through use of relevant stories, practical worked examples, and personal reflection	0,405	
15. Model higher-order thinking by formulating questions to probe a learner's comprehension of core concepts	0,462	
16. Ability to guide learners by providing substantive feedback	0,469	
17. Consult with learner on alternative approaches to solve a problem or gain a different perspective on a topic	0,562	
18. Ability to analyze a learner's performance using cognitive tools and formal assessments		0,584
19. Ability to provide worked examples to solve complex problems by using cues and associations to promote decision-making and reasoning skills		0,550
20. Ability to demonstrate a task and model performance through a focused activity or worked example		0,800
21. Ability to articulate the reasoning that learners should use when engaged in performing an activity, task or assessment		0,324

There were 21 behaviors remaining in the four-factor model after an analysis of the ranking of the highest competencies correlated to the factors. Factor 1, *Collaborator*, contains seven items, and their loadings range from .439 to .927. Factor 2, *Constructivist Designer*, contains five items, and their loadings range from .511 to .963. Factor 3, *Cognitive Coach*, contains five items, and their loadings range from .405 to .562 Factor 4, *Consultant*, contains four items, and their loadings range from .324 to .800. Finally, the competency descriptors extracted from the analysis were the following:

- Mentor learners in usage of collaborative tools (e.g., online chats, eBooks, etc.)

- Ability to coach a learner using the online chat feature
- Ability to adjust learning problems and scenarios based on difficulty and complexity of a learner's ability to comprehend situations
- Promote learner interaction through focused and engaging discussion threads using authentic tasks in a meaningful context rather than abstract instruction out of context

Reliability—Importance

Cronbach's α is estimated for reliability analysis of the importance of the competencies. The result was .91, meaning that the importance questionnaire had sufficient reliability. In other words, the instrument will yield consistent results every time it is used. The following table demonstrates that all factors had satisfactory reliability coefficients.

Table 32. Factor Table on Reliability—Importance

Factor	Cronbach's α
1. Collaborator	.89
2. Constructivist Designer	.82
3. Cognitive Coach	.74
4. Consultant	.77

Validity—Frequency of Use Competencies

A factor analysis using Principal Axis Factoring and Promax Oblique Rotation was performed to observe the potential constructs on the importance of the competencies data. The Kaiser-Meyer-Olkin measure of sampling adequacy value was .791, and Bartlett's Test of Sphericity yielded a significant result, $\chi 2$ (210) = 1012.881, $p < .01$. These test results demonstrated that the data were appropriate for factor analysis (Tabachnick, Fidell & Osterlind, 2001). The first solution yielded seven factors identified based on Eigen value criteria, meaning they were higher than one.

However, in the seven-factor solution, the last three factors had only one or two items. For this reason, the analysis was run again, and this time, the number of factors was constrained to three. The three-factor solution produced a better factor structure than the seven-factor one. The results of the three-factor analysis are presented in the following section. The three-factor solution accounted for 51.57% of the total variance. The same four items excluded at the importance of the competencies analysis were extracted in this analysis as well and for the same reasons. The pattern matrix of the analysis is presented below.

Table 33. The Three-Factor Solution of the Frequently Used Competencies Data

	Factor 1	Factor 2	Factor 3
	Collaborator	Cognitive Coach and Consultant	Constructivist Designer
1. Generate new ideas that promote critical-thinking and problem-solving skills in a collaborative learning environment	0,537		
2. Ability to create a collaborative online environment through the construction of knowledge and social negotiation	0,729		
3. Ability to engage a group of learners in discussion of content that can be used to solve a problem or design a project or portfolio	0,796		
4. Ability to design social communities that promote engagement and conversation by learners to peer(s) or instructor(s)	0,642		
5. Collaborate with learners on alternative interpretations of a topic or problem	0,584		
6. Ability to promote team dynamics and engagement about a project or scenario through team forums and team chat rooms	0,820		
7. Ability to model collaboration techniques when solving a problem through consensus-building activities	0,682		
8. Empower learners to interpret and construct meaning based on their own experiences and class interactions		0,518	
9. Ability to motivate a learner in an		0,662	

	online learning environment through use of relevant stories, practical worked examples, and personal reflection		
10.	Model higher-order thinking by formulating questions to probe a learner's comprehension of core concepts	0,329	
11.	Ability to guide learners by providing substantive feedback	0,606	
12.	Ability to analyze a learner's performance using cognitive tools and formal assessments	0,568	
13.	Ability to provide worked examples to solve complex problems by using cues and associations to promote decision-making and reasoning skills	0,454	
14.	Consult with learner on alternative approaches to solve a problem or gain a different perspective on a topic	0,606	
15.	Ability to demonstrate a task and model performance through a focused activity or worked example	0,445	
16.	Ability to articulate the reasoning that learners should use when engaged in performing an activity, task, or assessment	0,498	
17.	Ability to present a problem in a manner that allows the learner to build knowledge in a reflective and analytical manner		0,394
18.	Ability to design and create complex scenarios that allow students to make decisions and select alternative methods		0,558
19.	Ability to stimulate a learner by creating materials based on real authentic problems using collaborative tools, such as podcasts, blogs, online chats, videos, online games, and simulations		0,719
20.	Ability to design instructional materials (e.g., worked examples, case studies, virtual labs) that enable a learner to build knowledge in a reflective and analytical manner		0,984
21.	Ability to design instructional content that can be used to solve a problem or scenario		0,676

There were 21 items left in the three-factor model. Factor 1, named *Collaborator*, contains seven items, and their loadings range from .584 to .820. Factor 2, named *Constructivist*, *Designer*, and *Consultant*, contains nine items, and their loadings range from .329 to .662. Factor 3, named *Cognitive Coach*, contains five items, and their loadings range from .420 to .638.

Reliability—Frequency of Use Competencies

Cronbach's α is estimated for reliability analysis of the frequency of the competencies. The result was .88, meaning that the frequency questionnaire had sufficient reliability. In other words, the instrument will yield consistent results every time it is used. The following table also demonstrates that all factors had satisfactory reliability coefficients.

Table 34. Factor Table on Reliability—Frequency of Use

Factor	Cronbach's α
1. Collaborator	.86
2. Cognitive Coach and Consultant	.78
3. Constructivist Designer	.84

There is one factor difference between the importance and frequency data. In this study, the practitioners think that all four competencies are frequently used as an online instructor but the role of Collaborator was significantly higher than the Cognitive Coach and Consultant roles. Collaborator and Constructivist Designer competencies remained, but Cognitive Coach and Consultant competencies were combined. The main reason for this change (combination) in roles may be that Cognitive Coach and Consultant competencies are utilized interchangeable in real-life settings by online instructors. Participants felt the associated competencies overlapped in practical application of use in an online class.

COMPARATIVE ANALYSIS – 4 FACTOR MODEL

Research Question #1c: Are there differences in perception of important competencies

based on sector, educational level, and years of experience?

THE IMPORTANCE OF THE COMPETENCIES COMPARISON ANALYSIS

1. Survey Population

The participants were divided into two groups in terms of the method used to recruit and solicit participants to complete survey: 1) LinkedIn and 2) Others (e.g., iNACOL, Michigan Virtual University). A comparison was conducted on the group's importance rating of Collaborator, Constructivist Designer, Consultant, and Cognitive Coach. A total of four competencies were compared using univariate ANOVA. For all associated factors, the items under them were totaled. The higher total numbers represent the important competencies and associated role. The descriptive statistics results for factors and total competencies are illustrated in the following table.

Table 35. Competencies Comparision—Survey Population

Descriptive Statistics	*Population*	*M*	*SD*	*n*
Collaborator	LinkedIn	27,6800	4,70536	50
	Others	27,2727	5,57924	55
Constructivist Designer	LinkedIn	20,7600	3,21070	50
	Others	20,4000	3,36430	55
Consultant	LinkedIn	16,5800	2,76339	50
	Others	17,2000	2,49741	55
Cognitive Coach	LinkedIn	21,9200	2,36333	50
	Others	22,1455	2,58499	55
Total	LinkedIn	86,9400	10.0151	50
	Others	87,0182	11.4721	55

The analysis revealed that neither factors nor total importance ratings of the competencies yielded significant results: Collaborator, $F(1, 103) = .162$, $p = .688$; Constructivist Designer, $F(1, 103) = .313$, $p = .577$; Consultant, $F(1, 103) = 1.459$, $p = .230$, Cognitive Coach, $F(1, 103) = .216$, $p = .643$; and Total Importance, $F(1, 103) = .001$, $p = .971$. Thus, the method of outreach did not have any impact on the participants' opinions about the importance of the subcomponents of the competencies or on overall scores.

2. Experience

The participants were divided into two groups in terms of their experience: 1) participants who had less than five years online experience and 2) participants with more than five years of online experience. A comparison was conducted on the group's importance rating of Collaborator, Constructivist Designer, Consultant, and Cognitive Coach. A total of four competencies were compared using univariate ANOVA. For all associated factors, the items under them were totaled. The higher total numbers represent the important competencies and associated role. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 36. Competencies Comparision—Experience

Descriptive Statistics				
	Experience	*M*	*SD*	*n*
Collaborator	Less than 5 years	27,9189	4,46827	37
	More than 5 years	27,2206	5,51753	68
Constructivist Designer	Less than 5 years	20,6216	3,10333	37
	More than 5 years	20,5441	3,39637	68
Consultant	Less than 5 years	17,2703	2,25646	37
	More than 5 years	16,7059	2,81286	68
Cognitive Coach	Less than 5 years	22,1622	2,31557	37
	More than 5 years	21,9706	2,56829	68
Total	Less than 5 years	87,9730	9,86432	37
	More than 5 years	86,4412	11,23877	68

The analysis revealed that neither factors nor total importance ratings of the competencies yielded significant results: Collaborator, $F(1, 103) = .436$, $p = .510$; Constructivist Designer, $F(1, 103) = .013$, $p = .909$; Consultant, $F(1, 103) = 1.102$, $p = .296$. Cognitive Coach, $F(1, 103) = .143$, $p = .706$; and Total Importance, $F(1, 103) = .484$, $p = .488$.

Thus, the experience of the participants did not have any impact on the participants' opinions about the importance of the subcomponents of the competencies or on overall scores.

3. Certifications and Awards

The participants were divided into four groups (None, One, Two, or Three) in terms of certificate or awards completed by participants. A comparison was conducted on the group's importance rating of Collaborator, Constructivist Designer, Consultant, and Cognitive Coach. Four competencies were compared using univariate ANOVA. For all associated factors, the items under them were totaled. The descriptive statistics results for factors and total competencies are illustrated in the following table.

Table 37. Competencies Comparison—Certifications and Awards

Descriptive Statistics	*Certification Awards*	*M*	*SD*	*n*
Collaborator	None	26,3235	5,98341	34
	One	28,4348	4,37790	23
	Two	26,8095	5,32559	21
	Three or more	28,5926	4,34351	27
Constructivist Designer	None	19,7059	3,48616	34
	One	21,2609	2,73392	23
	Two	20,2857	3,62137	21
	Three or more	21,2963	3,03587	27
Consultant	None	16,5882	3,30397	34
	One	17,1304	1,81670	23
	Two	16,3810	2,13251	21
	Three or more	17,5185	2,60724	27
Cognitive Coach	None	21,3235	3,00223	34
	One	22,4783	1,99703	23
	Two	21,9524	2,15583	21
	Three or more	22,6296	2,20398	27
Total	None	83,9412	13,25722	34
	One	89,3043	8,20440	23
	Two	85,4286	9,00317	21
	Three or more	90,0370	9,56549	27

The analysis revealed that neither factors nor total importance ratings of the competencies yielded significant results: Collaborator, $F(1, 101) = 1.383$, $p = .252$; Constructivist Designer, $F(1, 101) = 1.650$, $p = .183$; Consultant, $F(1, 101) = .986$, $p = .403$. Cognitive Coach, $F(1, 101) = 1.750$, $p = .162$; and Total Importance, $F(1, 101) = 2.212$, $p = .091$. Thus, the certificates or awards of the participants did not have any impact on the participants' opinions about the importance of the subcomponents of the competencies or on overall scores.

4. Annual Workshops

The participants were divided into two groups in terms of their participation in annual workshops: 1) No and 2) Yes. A comparison was conducted on the group's importance rating of Collaborator, Constructivist Designer, Consultant, and Cognitive Coach. A total of four competencies were compared using univariate ANOVA. For all associated factors, the items under them were totaled. The higher total numbers represent the important competencies and associated role. The descriptive statistics results for factors and total competencies are illustrated in the following table.

Table 38. Competencies Comparison—Annual Workshops

Descriptive Statistics				
	Annual Workshop	*M*	*SD*	*n*
Collaborator	No	28,5000	4,08912	44
	Yes	26,7213	5,73042	61
Constructivist Designer	No	20,5000	3,29552	44
	Yes	20,6230	3,29729	61
Consultant	No	16,7273	2,39538	44
	Yes	17,0328	2,80456	61
Cognitive Coach	No	21,8409	2,42029	44
	Yes	22,1803	2,51997	61
Total	No	87,5682	9,00232	44
	Yes	86,5574	11,91011	61

The analysis revealed that neither factors nor total importance ratings of the competencies yielded significant results: Collaborator, $F(1, 103) = 3.097$, $p = .081$; Constructivist Designer, $F(1, 103) = .036$, $p = .851$; Consultant, $F(1, 103) = .342$, $p = .506$. Cognitive Coach, $F(1, 103) = .479$, $p = .490$; and Total Importance, $F(1, 103) = .224$, $p = .637$. Thus, the annual workshops the participants participated in did not have any impact on the participants' opinions about the importance of the subcomponents of the competencies or on overall scores.

5. Certification Programs

The participants were divided into two groups in terms of their participation in certificate programs: 1) No and 2) Yes. A comparison was conducted on the group's importance rating of Collaborator, Constructivist Designer, Consultant, and Cognitive Coach. A total of four competencies were compared using univariate ANOVA. For all associated factors, the items under them were totaled. The higher total numbers represent the important competencies and associated role. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 39. Competencies Comparison—Certification Programs

Descriptive Statistics				
	Certificate Programs	*M*	*SD*	*n*
Collaborator	No	26,9677	5,23847	62
	Yes	28,1860	5,02022	43
Constructivist Designer	No	20,0806	3,52647	62
	Yes	21,2791	2,78025	43
Consultant	No	16,5645	2,95663	62
	Yes	17,3953	2,01352	43
Cognitive Coach	No	21,6452	2,58683	62
	Yes	22,6047	2,20540	43
Total	No	85,2581	11,23218	62
	Yes	89,4651	9,60741	43

The analysis revealed that overall total competency importance yielded significant differences: Collaborator, $F(1, 103) = 1.421$, $p = .236$; Constructivist Designer, $F(1, 103) = 3.467$, $p = .065$; Consultant, $F(1, 103) = 2.566$, $p = .112$. Cognitive Coach, $F(1, 103) = 3.931$, $p = .050$; and Total Importance, $F(1, 103) = 4.000$, $p < .50$. As a result of this, the overall total importance of competencies was influenced by the participants' certification programs joined to date. Those who previously participated in certification programs thought the competencies were more important than did those who had never participated in any certification programs.

6. Faculty Development

The participants were divided into two groups in terms of their participation to faculty development: 1) No and 2) Yes. A comparison was conducted on the group's importance rating of Collaborator, Constructivist Designer, Consultant, and Cognitive Coach. A total of four competencies were compared using univariate ANOVA. For all associated factors, the items under them were totaled. The higher total numbers represent the important competencies and associated role. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 40. Competencies Comparison—Faculty Development

Descriptive Statistics				
	Faculty Development	*M*	*SD*	*n*
Collaborator	No	28,0385	4,38340	52
	Yes	26,9057	5,81200	53
Constructivist Designer	No	20,7115	3,15816	52
	Yes	20,4340	3,42227	53
Consultant	No	17,1923	2,15150	52
	Yes	16,6226	3,02697	53
Cognitive Coach	No	22,4808	2,17373	52
	Yes	21,6038	2,68428	53
Total	No	88,4231	9,01055	52
	Yes	85,5660	12,14260	53

The analysis revealed that neither factors nor total importance ratings of the competencies yielded significant results: Collaborator, $F(1, 103) = 1.269$, $p = .263$; Constructivist Designer, $F(1, 103) = .816$, $p = .667$; Consultant, $F(1, 103) = 1.231$, $p = .270$. Cognitive Coach, $F(1, 103) = 3.377$, $p = .069$; and Total Importance, $F(1, 103) = 1.869$, $p = .175$. Thus, the faculty development of the participants did not have any impact on the participants' opinions about the importance of the subcomponents of the competencies or on overall scores.

7. Online Mentoring

The participants were divided into two groups in terms of their participation in online mentoring programs: 1) No and 2) Yes. A comparison was conducted on the group's importance rating of Collaborator, Constructivist Designer, Consultant, and Cognitive Coach. A total of four competencies were compared using univariate ANOVA. For all associated factors, the items under them were totaled. The higher total numbers represent the important competencies and associated role. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 41. Competencies Comparison—Online Mentoring

Descriptive Statistics				
	Online Mentoring	*M*	*SD*	*n*
Collaborator	No	27,6111	4,58889	72
	Yes	27,1515	6,30040	33
Constructivist Designer	No	20,5139	3,44777	72
	Yes	20,6970	2,93135	33
Consultant	No	16,7500	2,65240	72
	Yes	17,2424	2,59844	33
Cognitive Coach	No	22,0000	2,46668	72
	Yes	22,1212	2,52187	33
Total	No	86,8750	10,16614	72
	Yes	87,2121	12,09534	33

The analysis revealed that neither factors nor total importance ratings of the competencies yielded significant results: Collaborator, $F(1, 103) = 1.269$, $p = .263$; Constructivist Designer, $F(1, 103) = .178$, $p = .674$; Consultant, $F(1, 103) = 0.70$, $p = .792$. Cognitive Coach, $F(1, 103) = .790$, $p = .376$; and Total Importance, $F(1, 103) = .022$, $p = .882$. Thus, the online mentoring of the participants did not have any impact on the participants' opinions about the importance of the subcomponents of the competencies or on overall scores.

8. Workshops

The participants were divided into two groups in terms of their participation in workshops: 1) No and 2) Yes. A comparison was conducted on the group's importance rating of Collaborator, Constructivist Designer, Consultant, and Cognitive Coach. A total of four competencies were compared using univariate ANOVA. For all associated factors, the items under them were totaled. The higher total numbers represent the important competencies and associated role. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 42. Competencies Comparison—Workshops

Descriptive Statistics				
	Workshops	*M*	*SD*	*n*
Collaborator	No	30,0500	4,37066	20
	Yes	26,8588	5,16664	85
Constructivist Designer	No	20,6500	3,78744	20
	Yes	20,5529	3,17545	85
Consultant	No	16,8000	3,07109	20
	Yes	16,9294	2,53916	85
Cognitive Coach	No	22,4500	2,30503	20
	Yes	21,9412	2,51355	85
Total	No	89,9500	9,86474	20
	Yes	86,2824	10,88644	85

The analysis revealed that only Collaborator competencies yielded significant results: Collaborator, $F(1, 103) = 6.519$, $p < .05$; Constructivist Designer, $F(1, 103) = .014$, $p = .906$; Consultant, $F(1, 103) = 0.39$, $p = .844$. Cognitive Coach, $F(1, 103) = .684$, $p = .410$; and Total Importance, $F(1, 103) = 1.900$, $p = .171$. The participants who had no experience with workshops thought the Collaborator competencies were more important than the workshop participants considered them to be.

9. Webinars

The participants were divided into two groups (No or Yes) in terms of their participation in attending webinars for personal development. A comparison was conducted on the group's importance rating of Collaborator, Constructivist Designer, Consultant, and Cognitive Coach. A total of four competencies were compared using univariate ANOVA. For all associated factors, the items under them were totaled. The higher total numbers represent the important competencies and associated role. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 43. Competencies Comparison—Webinars

Descriptive Statistics				
	Webinar	*M*	*SD*	*n*
Collaborator	No	27,9565	4,76541	46
	Yes	27,0847	5,45922	59
Constructivist Designer	No	20,1957	3,40339	46
	Yes	20,8644	3,18107	59
Consultant	No	16,7826	2,55528	46
	Yes	17,0000	2,71013	59
Cognitive Coach	No	22,2174	2,38433	46
	Yes	21,8983	2,55083	59
Total	No	87,1522	9,67463	46
	Yes	86,8475	11,60234	59

The analysis revealed that neither factors nor total importance ratings of the competencies yielded significant results: Collaborator, $F(1, 103) = .736$, $p = .393$; Constructivist Designer, $F(1, 103) = 1.074$, $p = .302$; Consultant, $F(1, 103) = .175$, $p = .677$. Cognitive Coach, $F(1, 103) = .428$, $p = .514$; and Total Importance, $F(1, 103) = .021$, $p = .886$. Thus, the webinar did not have any impact on the participants' opinions about the importance of the subcomponents of the competencies or on overall scores.

10. Training Level

The participants were divided into three groups (Low, Medium, High) in terms of the amount of training they have received as an online instructor. A comparison was conducted on the group's importance rating of Collaborator, Constructivist Designer, Consultant, and Cognitive Coach. A total of four competencies were compared using univariate ANOVA. For all associated factors, the items under them were totaled. The higher total numbers represent the important competencies and associated role. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 44. Competencies Comparison—Training Level

Descriptive Statistics	*Training Level*	*M*	*SD*	*n*
Collaborator	Low	28,5588	4,11348	34
	Medium	26,9792	4,79579	48
	High	26,8696	6,97596	23
Constructivist Designer	Low	20,2941	3,45121	34
	Medium	20,4375	3,35113	48
	High	21,2609	2,89541	23
Consultant	Low	16,7647	2,55911	34
	Medium	16,9583	2,62523	48
	High	17,0000	2,86039	23
Cognitive Coach	Low	21,9706	2,32881	34
	Medium	22,1458	2,46671	48
	High	21,9130	2,77837	23
Total	Low	87,5882	9,28380	34
	Medium	86,5208	10,27078	48
	High	87,0435	13,81198	23

The analysis revealed that neither factors nor total importance ratings of the yielded significant results: Collaborator, $F(1, 102) = 1.132$, $p = .326$; Constructivist Designer, $F(1, 102) = .665$, $p = .517$; Consultant, $F(1, 102) = .072$, $p = .931$. Cognitive Coach, $F(1, 102) = .086$, $p = .918$; and Total Importance, $F(1, 102) = .097$, $p = .908$. Thus, the training level of the participants did not have any impact on the participants' opinions about the importance of the subcomponents of the competencies or on overall scores.

11. Research Activities

The participants were divided into two groups (No or Yes) relative to their research experience in the online learning. A comparison was conducted on the group's importance rating of Collaborator, Constructivist Designer, Consultant, and Cognitive Coach. A total of four competencies were compared by using univariate ANOVA. For all associated factors, the items under them were totaled. The higher total numbers represent the important competencies and associated role. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 45. Competencies Comparison—Research Activities

Descriptive Statistics				
	Research	*M*	*SD*	*n*
Collaborator	No	27,4146	5,52872	82
	Yes	27,6522	3,65076	23
Constructivist Designer	No	20,4268	3,34454	82
	Yes	21,0870	3,05871	23
Consultant	No	16,9634	2,66410	82
	Yes	16,6957	2,56612	23
Cognitive Coach	No	22,0000	2,41906	82
	Yes	22,1739	2,70777	23
Total	No	86,8049	11,27046	82
	Yes	87,6087	8,84585	23

The analysis revealed that neither factors nor total importance ratings of the competencies yielded significant results: Collaborator, $F(1, 103) = .038$, $p = .846$; Constructivist Designer, $F(1, 103) = .725$, $p = .396$; Consultant, $F(1, 103) = .184$, $p = .669$. Cognitive Coach, $F(1, 103) = .088$, $p = .767$; and Total Importance, $F(1, 103) = .100$, $p = .753$. Thus, the research activities of the participants did not have any impact on the participants' opinions about the importance of the subcomponents of the competencies or on overall scores.

12. Online Consulting

The participants were divided into two groups (No or Yes) based on their experience consulting in the field of online learning. A comparison was conducted on the group's importance rating of Collaborator, Constructivist Designer, Consultant, and Cognitive Coach. A total of four competencies were compared using univariate ANOVA. For all associated factors, the items under them were totaled. The higher total numbers represent the important competencies and associated role. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 46. Competencies Comparison—Online Consulting Experience

Descriptive Statistics				
	Online Consulting	*M*	*SD*	*n*
Collaborator	No	27,2456	5,61020	57
	Yes	27,7292	4,61607	48
Constructivist Designer	No	19,9123	3,51670	57
	Yes	21,3542	2,81704	48
Consultant	No	16,9474	2,25532	57
	Yes	16,8542	3,04568	48
Cognitive Coach	No	21,9649	2,19549	57
	Yes	22,1250	2,78770	48
Total	No	86,0702	10,76014	57
	Yes	88,0625	10,75334	48

The analysis revealed that only Constructivist Designer competencies yield significant results: Collaborator, $F(1, 103) = .227$, $p = .635$; Constructivist Designer, $F(1, 103) = 5.237$, $p < .05$; Consultant, $F(1, 103) = 0.32$, $p = .858$. Cognitive Coach, $F(1, 103) = .108$, $p = .743$; and Total Importance, $F(1, 103) = .894$, $p = .347$. Participants with previous experience in online consulting considered Constructivist Designer competencies more important than those who had no experience in online consulting considered them to be.

13. Education Sector

The participants who were from the Education sector are compared to those from other sectors based on the frequency in usage of competencies in their role as a Collaborator, Cognitive Coach, Consultant (roles were combined for Cognitive Coach and Consultant based on previous analysis), and Constructivist Designer. A total of four competencies were compared using univariate ANOVA. For all associated factors, the items under them were totaled. The higher total numbers represent the important competencies and associated role. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 47. Competencies Comparison—Education Sector

Descriptive Statistics				
	Education Sector	*M*	*SD*	*n*
Collaborator	No	25,7077	6,11025	65
	Yes	23,8750	5,46873	40
Cognitive Coach & Consultant	No	37,2308	4,55443	65
	Yes	37,4000	4,25351	40
Constructivist Designer	No	18,6308	4,11008	65
	Yes	19,8000	3,74987	40
Total	No	81,5692	11,79244	65
	Yes	81,0750	10,62505	40

The analysis revealed that neither factors nor total importance ratings of the competencies yielded significant results: Collaborator, $F(1, 103) = 2.409$, $p = .124$; Cognitive Coach and Consultant, $F(1, 103) = .036$, $p = .850$; Constructivist Designer, $F(1, 103) = 2.140$, $p = .147$; and total frequency, $F(1, 103) = .047$, $p = .829$. Thus, the participants’ sector did not have any impact on the participants’ opinions about the importance of the subcomponents of the competencies or on overall scores.

14. Technology Sector

The participants who were from the Technology sector are compared to those who were from other sectors based the usage of competencies frequency used in their role as a Collaborator, Cognitive Coach, Consultant (roles were combined for Cognitive Coach and Consultant based on previous analysis), and Constructivist Designer. A total of four competencies were compared using univariate ANOVA. For all associated factors, the items under them were totaled. The higher total numbers represent the important competencies and associated role. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 48. Competencies Comparison—Technology Sector

Descriptive Statistics				
	Education Sector	*M*	*SD*	*n*
Collaborator	No	25,7077	6,11025	65
	Yes	23,8750	5,46873	40
Cognitive Coach & Consultant	No	37,2308	4,55443	65
	Yes	37,4000	4,25351	40
Constructivist Designer	No	18,6308	4,11008	65
	Yes	19,8000	3,74987	40
Total	No	81,5692	11,79244	65
	Yes	81,0750	10,62505	40

The analysis revealed that neither factors nor total importance ratings of the competencies yielded significant results: Collaborator, $F(1, 103) = .691$, $p = .408$; Cognitive Coach and Consultant, $F(1, 103) = .524$, $p = .471$; Constructivist Designer, $F(1, 103) = 2.544$, $p = .114$; and total frequency, $F(1, 103) = .504$, $p = .479$. Thus, the participants' sector did not have any impact on the participants' opinions about the importance of the subcomponents of the competencies or on overall scores.

15. Degree Level

The participants' degree levels were compared based the usage of competencies frequency used in their role as a Collaborator, Cognitive Coach, Consultant (roles were combined for Cognitive Coach and Consultant based on previous analysis), and Constructivist Designer. A total of four competencies were compared using univariate ANOVA. For all associated factors, the items under them were totaled. The higher total numbers represent the important competencies and associated role. Those with degrees lower than a master's degree were extracted from the analysis due to their low numbers. There were ten participants who had an associate's or bachelor's degree. The analysis was performed including them; however, the results were not promising due to the relative small size of the sample population. For this reason, the participants with master's and doctoral degrees were compared at the second round of the analysis. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 49. Competencies Comparison—Degree Level

Descriptive Statistics	*Degree*	*M*	*SD*	*n*
Collaborator	Master	23,9344	6,60017	61
	Doctorate	27,3714	3,97111	35
Cognitive Coach & Consultant	Master	37,0820	4,88295	61
	Doctorate	37,6000	4,00881	35
Constructivist Designer	Master	19,0984	3,81534	61
	Doctorate	19,6571	4,21442	35
Total	Master	80,1148	12,48345	61
	Doctorate	84,6286	8,73157	35

The analysis revealed that Collaboration yielded significant results: Collaborator, $F(1, 94) = 7.840$, $p < .05$; Cognitive Coach and Consultant, $F(1, 94) = .284$, $p = .595$; Constructivist Designer, $F(1, 94) = .442$, $p = .508$; and total frequency, $F(1, 94) = 3.567$, $p = .062$. The participants with a doctorate degree used Collaborator competencies more frequently than the participants with a master's degree did.

THE FREQUENCY OF THE COMPETENCIES COMPARISON 3-FACTOR MODEL

1. Survey Population

The participants were divided into two groups in terms of their survey method: 1) LinkedIn and 2) Others (e.g., iNACOL, Florida Virtual, Michigan Virtual University, Sloan Consortium, Univeristy of Phoenix). These groups' frequently used associated competencies were compared in their role as a Collaborator, Cognitive Coach/Consultant, and Constructivist Designer. The total frequencies of these three competencies were compared using univariate ANOVA. For all factors, the items under them were totaled. The higher total numbers there are, the more frequently competencies are used by the online instructors. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 50. Three Factor Model—Degree Level

Descriptive Statistics				
	Population	*M*	*SD*	*n*
Collaborator	LinkedIn	25,0600	5,64027	50
	Others	24,9636	6,20622	55
Cognitive Coach & Consultant	LinkedIn	37,1200	4,74079	50
	Others	37,4545	4,14916	55
Constructivist Designer	LinkedIn	19,3600	3,50370	50
	Others	18,8182	4,41836	55
Total	LinkedIn	81,5400	10,88382	50
	Others	81,2364	11,78663	55

The analysis revealed that neither factors nor total frequency ratings of the competencies yielded significant results: Collaborator, $F(1, 103) = .007$, $p = .934$; Cognitive Coach and Consultant, $F(1, 103) = .149$, $p = .701$; Constructivist Designer, $F(1, 103) = .478$, $p = .491$; and total frequency, $F(1, 103) = .019$, $p = .892$. Thus, the survey outreach methods did not have any impact on the participants' usage frequency of the subcomponents of the competencies or on overall scores.

2. Experience

The participants were divided into two groups in terms of their experience: 1) Less than 5 years and 2) More than 5 years. These groups' frequently used associated competencies were compared in their role as a Collaborator, Cognitive Coach/Consultant, and Constructivist Designer. The total frequencies of these competencies were compared using univariate ANOVA. For all factors, the items under them were totaled. The higher total numbers there are, the more frequently competencies are used by the online instructors. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 51. Three Factor Model-Experience

Descriptive Statistics	*Experience*	*M*	*SD*	*n*
Collaborator	Less than 5 years	24,3514	5,46309	37
	More than 5 years	25,3676	6,15691	68
Cognitive Coach & Consultant	Less than 5 years	36,9189	4,39304	37
	More than 5 years	37,5000	4,45709	68
Constructivist Designer	Less than 5 years	18,3514	4,05666	37
	More than 5 years	19,4706	3,94163	68
Total	Less than 5 years	79,6216	10,61537	37
	More than 5 years	82,3382	11,63834	68

The analysis revealed that neither factors nor total frequency ratings of the competencies yielded significant results: Collaborator, $F(1, 103) = .705$, $p = .403$; Cognitive Coach and Consultant, $F(1, 103) = .411$, $p = .523$; Constructivist Designer, $F(1, 103) = 1.893$, $p = .172$; and total frequency, $F(1, 103) = 1.387$, $p = .242$. Thus, the participants' experience did not have any impact on the participants' usage frequency of the subcomponents or on overall competencies.

3. Certifications and Awards

The participants were divided into four groups in terms of certifications or awards they had to date: 1) None, 2) One, 3) Two, and 4) Three or more. These groups' frequently used associated competencies were compared in their role as a Collaborator, Cognitive Coach/Consultant, and Constructivist Designer. The total frequencies of these four competencies were compared using univariate ANOVA. The higher total numbers there are, the more frequently competencies are used by the online instructors. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 52. Three Factor Model -Certifications and Awards

Descriptive Statistics				
Certification and Awards		*M*	*SD*	*n*
Collaborator	None	22,7647	6,36781	34
	One	25,4348	5,52536	23
	Two	26,1905	6,26593	21
	Three or more	26,5556	4,70134	27
Cognitive Coach & Consultant	None	36,2059	5,07984	34
	One	37,5652	4,60065	23
	Two	37,1429	3,86375	21
	Three or more	38,5556	3,57699	27
Constructivist Designer	None	18,2059	3,82004	34
	One	19,7826	3,57970	23
	Two	18,1429	4,63989	21
	Three or more	20,2963	3,79083	27
Total	None	77,1765	12,50326	34
	One	82,7826	10,87514	23
	Two	81,4762	10,91155	21
	Three or more	85,4074	8,94969	27

The analysis revealed that the overall usage frequency of the competencies yielded significant results: Collaborator, $F(1, 101) = 2.691$, $p = .05$; Cognitive Coach and Consultant, $F(1, 101) = 1.476$, $p = .226$; Constructivist Designer, $F(1, 101) = 2.056$, $p = .111$; and total frequency, $F(1, 101) = 2.986$, $p < .05$. Because there are four groups in certification and awards demographics, the Scheffe post-hoc test was performed to reveal the main reason for the significant difference. It demonstrated that the difference between three or more certificates and awards and those who had no certificates or awards caused the gap. Thus, the participants who had three or more certificates or awards used the competencies more frequently than did those who previous had no certificates or awards.

4. Annual Workshops

The participants were divided into two groups in terms of their participation in the annual workshops to date: 1) No and 2) Yes. These groups' frequently used associated competencies were compared in their role as a Collaborator, Cognitive Coach/Consultant, and Constructivist Designer. The total frequencies of these four competencies were compared using univariate ANOVA. The higher total numbers there are, the more frequently competencies are used by the online instructors. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 53. Three Factor Model - Annual Workshops

Descriptive Statistics				
	Annual Workshops	*M*	*SD*	*n*
Collaborator	No	25,8864	5,61234	44
	Yes	24,3770	6,09143	61
Cognitive Coach & Consultant	No	36,5227	4,22335	44
	Yes	37,8525	4,51234	61
Constructivist Designer	No	19,0227	3,93250	44
	Yes	19,1148	4,07880	61
Total	No	81,4318	10,71491	44
	Yes	81,3443	11,81226	61

The analysis revealed that neither factors nor total frequency ratings of the competencies yielded significant results: Collaborator, $F(1, 103) = 1.675$, $p = .198$; Cognitive Coach and Consultant, $F(1, 103) = 2.341$, $p = .129$; Constructivist Designer, $F(1, 103) = .013$, $p = .908$; and total frequency, $F(1, 103) = .002$, $p = .969$. Thus, the participants' annual workshop experience did not have any impact on the participants' usage frequency of the subcomponents or on overall competencies.

5. Certification Programs

The participants were divided into two groups in terms of their participation in the certification programs to date: 1) No and 2) Yes. These groups' frequently used associated competencies were compared in their role as a Collaborator, Cognitive Coach/Consultant, and Constructivist Designer. The total frequencies of these four competencies were compared using univariate ANOVA. The higher total numbers there are, the more frequently competencies are used by the online instructors. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 54. Three Factor Model -Certification Programs

Descriptive Statistics				
	Certification Programs	*M*	*SD*	*n*
Collaborator	No	24,1613	5,68343	62
	Yes	26,2326	6,09386	43
Cognitive Coach & Consultant	No	36,3226	4,60140	62
	Yes	38,6977	3,77671	43
Constructivist Designer	No	18,4677	3,88658	62
	Yes	19,9535	4,04118	43
Total	No	78,9516	10,94761	62
	Yes	84,8837	11,02424	43

The analysis revealed that Cognitive Coach and Consultant and the overall frequency of competencies yielded significant differences: Collaborator, $F(1, 103) = 3.178$, $p = .078$; Cognitive Coach and Consultant, $F(1, 103) = 7.803$, $p < .05$; Constructivist Designer, $F(1, 103) = 3.592$, $p = .061$; and total frequency, $F(1, 103) = 7.413$, $p < .05$. The participants who had experience with certification programs used the Cognitive Coach and Consultant competency more than did those who did not have any experience with certification programs. The same was true for overall usage frequency of the competencies.

6. Faculty Development

The participants were divided into two groups in terms of their participation in the faculty development to date: 1) No and 2) Yes. These groups' frequently used associated competencies were compared in their role as a Collaborator, Cognitive Coach/Consultant, and Constructivist Designer. The total frequencies of these four competencies were compared using univariate ANOVA. The higher total numbers there are, the more frequently competencies are used by the online instructors. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 55. Three Factor Model -Faculty Development

Descriptive Statistics				
	Faculty Development	*M*	*SD*	*n*
Collaborator	No	25,0577	5,59206	52
	Yes	24,9623	6,26947	53
Cognitive Coach & Consultant	No	37,3077	4,15172	52
	Yes	37,2830	4,71241	53
Constructivist Designer	No	18,7115	4,39847	52
	Yes	19,4340	3,57077	53
Total	No	81,0769	10,66393	52
	Yes	81,6792	12,00925	53

The analysis revealed that neither factors nor total frequency ratings of the competencies yielded significant results: Collaborator, $F(1, 103) = .007$, $p = .935$; Cognitive Coach and Consultant, $F(1, 103) = .001$, $p = .977$; Constructivist Designer, $F(1, 103) = .855$, $p = .357$; and total frequency, $F(1, 103) = .074$, $p = .786$. Thus, the participants' faculty development experience did not have any impact on the participants' usage frequency of the subcomponents or on overall competencies.

7. Online Mentoring

The participants were divided into two groups in terms of their participation in the online mentoring to date: 1) No and 2) Yes. These groups' frequently used associated competencies were compared in their role as a Collaborator, Cognitive Coach/Consultant, and Constructivist Designer. The total frequencies of these four competencies were compared using univariate ANOVA. The higher total numbers there are, the more frequently competencies are used by the online instructors. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 56. Three Factor Model - Online Mentoring

Descriptive Statistics				
	Online Mentoring	*M*	*SD*	*n*
Collaborator	No	25,0417	5,54225	72
	Yes	24,9394	6,74972	33
Cognitive Coach & Consultant	No	36,9306	4,62792	72
	Yes	38,0909	3,88397	33
Constructivist Designer	No	19,3194	4,00291	72
	Yes	18,5455	4,00071	33
Total	No	81,2917	11,27685	72
	Yes	81,5758	11,56241	33

The analysis revealed that neither factors nor total frequency ratings of the competencies yielded significant results: Collaborator, $F(1, 103) = .007$, $p = .935$; Cognitive Coach and Consultant, $F(1, 103) = 1.566$, $p = .214$; Constructivist Designer, $F(1, 103) = .846$, $p = .360$; and total frequency, $F(1, 103) = .014$, $p = .906$. Thus, the participants' online mentoring experience did not have any impact on the participants' usage frequency of the subcomponents or on overall competencies.

8. Workshops

The participants were divided into two groups (No or Yes) to analyze their participation in faculty development workshops. These groups' frequently used associated competencies were compared in their role as a Collaborator, Cognitive Coach/Consultant, and Constructivist Designer. The total frequencies of these competencies were compared using univariate ANOVA. The higher the total numbers, the more frequently competencies are used by the online instructors. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 57. Three Factor Model - Workshops

Descriptive Statistics				
	Workshops	*M*	*SD*	*n*
Collaborator	No	27,4000	6,96155	20
	Yes	24,4471	5,53884	85
Cognitive Coach & Consultant	No	36,3000	5,31235	20
	Yes	37,5294	4,18782	85
Constructivist Designer	No	19,3500	4,33195	20
	Yes	19,0118	3,94152	85
Total	No	83,0500	13,85441	20
	Yes	80,9882	10,68654	85

The analysis revealed that the Collaborator competency yielded a significant difference: Collaborator, $F(1, 103) = 4.157$, $p < .05$; Cognitive Coach and Consultant, $F(1, 103) = 1.254$, $p = .265$; Constructivist Designer, $F(1, 103) = .115$, $p = .735$; and total frequency, $F(1, 103) = .535$, $p < .466$. The participants who had no experience with workshops used the Collaborator competency more than did those who had previous experience.

9. Webinars

The participants were divided into two groups (No or Yes) to analyze their level of participation in faculty development webinars. These groups' frequently used associated competencies were compared in their role as a Collaborator, Cognitive Coach/Consultant, and Constructivist Designer. The total frequencies of these four competencies were compared using univariate ANOVA. The higher total numbers there are, the more frequently competencies are used by the online instructors. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 58. Three Factor Model -Webinars

Descriptive Statistics				
	Webinar	*M*	*SD*	*n*
Collaborator	No	25,1739	5,64625	46
	Yes	24,8814	6,16185	59
Cognitive Coach & Consultant	No	36,7391	4,25015	46
	Yes	37,7288	4,54036	59
Constructivist Designer	No	18,6739	3,94436	46
	Yes	19,3898	4,04721	59
Total	No	80,5870	10,35498	46
	Yes	82,0000	12,05733	59

The analysis revealed that neither factors nor total frequency ratings of the competencies yielded significant results: Collaborator, $F(1, 103) = .063$, $p = .803$; Cognitive Coach and Consultant, $F(1, 103) = 1.298$, $p = .257$; Constructivist Designer, $F(1, 103) = .827$, $p = .365$; and total frequency, $F(1, 103) = .401$, $p = .528$. Thus, the participants' webinar experience did not have any impact on the participants' usage frequency of the subcomponents or on overall competencies.

10. Training Level

The participants were divided into three groups (Low, Medium, High) to analyze their participation level in training programs to support faculty development. These groups' frequently used associated competencies were compared in their role as a Collaborator, Cognitive Coach/Consultant, and Constructivist Designer. The total frequencies of these four competencies were compared using univariate ANOVA. The higher the total numbers, the more frequently competencies are used by the online instructors. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 59. Three Factor Model -Training Level

Descriptive Statistics				
	Training Level	*M*	*SD*	*n*
Collaborator	Low	25,5882	6,23829	34
	Medium	24,4167	4,80617	48
	High	25,3913	7,49993	23
Cognitive Coach & Consultant	Low	36,3235	4,92809	34
	Medium	37,4583	3,89194	48
	High	38,3913	4,57005	23
Constructivist Designer	Low	18,3824	4,17071	34
	Medium	19,3750	3,86817	48
	High	19,4783	4,05496	23
Total	Low	80,2941	12,29074	34
	Medium	81,2500	9,47000	48
	High	83,2609	13,46111	23

The analysis revealed that neither factors nor total frequency ratings of the competencies yielded significant results: Collaborator, $F(1, 102) = .447$, $p = .641$; Cognitive Coach and Consultant, $F(1, 102) = 1.577$, $p = .212$; Constructivist Designer, $F(1, 102) = .758$, $p = .471$; and total frequency, $F(1, 103) = .473$, $p = .625$. Thus, the participants' training level did not have any impact on the participants' usage frequency of the subcomponents or on overall competencies.

11. Research Activities

The participants were divided into two groups (No or Yes) to analyze their participation level in research activities conducted as online instructors. These groups' frequently used associated competencies were compared in their role as a Collaborator, Cognitive Coach/Consultant, and Constructivist Designer. The total frequencies of these four competencies were compared using univariate ANOVA. The higher the total numbers, the more frequently competencies are used by the online instructors. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 60. Three Factor Model -Research Activities

Descriptive Statistics				
	Research	*M*	*SD*	*n*
Collaborator	No	24,8293	6,13592	82
	Yes	25,6522	5,12222	23
Cognitive Coach & Consultant	No	37,3659	4,56371	82
	Yes	37,0435	3,95978	23
Constructivist Designer	No	18,8659	3,97449	82
	Yes	19,8261	4,08603	23
Total	No	81,0610	11,30645	82
	Yes	82,5217	11,51232	23

The analysis revealed that neither factors nor total frequency ratings of the competencies yielded significant results: Collaborator, F(1, 103) = .345, p = .558; Cognitive Coach and Consultant, F(1, 103) = .095, p = .759; Constructivist Designer, F(1, 103) = 1.036, p = .311; and total frequency, F(1, 103) = .297, p = .587. Thus, the participants' research activities did not have any impact on the participants' usage frequency of the subcomponents or on overall competencies.

12. Online Consulting

The participants were divided into two groups (No or Yes) to analyze their participation in activities associated with consulting others in the field of online learning. These groups' frequently used associated competencies were compared in their role as a Collaborator, Cognitive Coach/Consultant, and Constructivist Designer. The total frequencies of these four competencies were compared using univariate ANOVA. The higher the total numbers, the more frequently competencies are used by the online instructors. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 61. Three Factor Model - Online Consulting

Descriptive Statistics				
	Online Consulting	*M*	*SD*	*n*
Collaborator	No	24,5088	6,25107	57
	Yes	25,6042	5,49561	48
Cognitive Coach & Consultant	No	36,8772	4,33042	57
	Yes	37,7917	4,52397	48
Constructivist Designer	No	18,2632	4,04230	57
	Yes	20,0417	3,76410	48
Total	No	79,6491	11,35073	57
	Yes	83,4375	11,03169	48

The analysis revealed that the Constructivist Designer competency yielded significant differences: Collaborator, $F(1, 103) = .893$, $p = .347$; Cognitive Coach and Consultant, $F(1, 103) = 1.115$, $p = .293$; Constructivist Designer, $F(1, 103) = 5.370$, $p < .05$; and total frequency, $F(1, 103) = .2.978$, $p = .087$. The participants who had experience with online consulting utilized the Constructivist Designer competency more than did those with no previous experience.

13. Education Sector

The participants who were from Education sector are compared to those who were from other sectors based on the frequently used competencies associated with their role as a Collaborator, Cognitive Coach/Consultant, Constructivist Designer. The total frequencies of these four competencies were compared using univariate ANOVA. The higher the total numbers, the more frequently competencies are used by the online instructors. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 62. Three Factor Model - Education Sector

Descriptive Statistics				
	Education Sector	*M*	*SD*	*n*
Collaborator	No	25,7077	6,11025	65
	Yes	23,8750	5,46873	40
Cognitive Coach & Consultant	No	37,2308	4,55443	65
	Yes	37,4000	4,25351	40
Constructivist Designer	No	18,6308	4,11008	65
	Yes	19,8000	3,74987	40
Total	No	81,5692	11,79244	65
	Yes	81,0750	10,62505	40

The analysis revealed that neither factors nor total importance ratings of the competencies yielded significant results: Collaborator, $F(1, 103) = 2.409$, $p = .124$; Cognitive Coach & Consultant, $F(1, 103) = .036$, $p = .850$; Constructivist Designer, $F(1, 103) = 2.140$, $p = .147$; and total frequency, $F(1, 103) = .047$, $p = .829$. Thus, the participants' sector did not have any impact on the participants' opinions about the importance of the subcomponents of the competencies or on overall scores.

14. Technology Sector

The participants who were from the Technology sector are compared to those who were from other sectors based on the frequently used competencies associated with their role as a Collaborator, Cognitive Coach/Consultant, Constructivist Designer. The total frequencies of these four competencies were compared using univariate ANOVA. The higher the total numbers, the more frequently competencies are used by the online instructors. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 63. Three Factor Model - Technology Sector

Descriptive Statistics				
	Education Sector	*M*	*SD*	*n*
Collaborator	No	25,7077	6,11025	65
	Yes	23,8750	5,46873	40
Cognitive Coach & Consultant	No	37,2308	4,55443	65
	Yes	37,4000	4,25351	40
Constructivist Designer	No	18,6308	4,11008	65
	Yes	19,8000	3,74987	40
Total	No	81,5692	11,79244	65
	Yes	81,0750	10,62505	40

The analysis revealed that neither factors nor total importance ratings of the competencies yielded significant results: Collaborator, $F(1, 103) = .691$, $p = .408$; Cognitive Coach and Consultant, $F(1, 103) = .524$, $p = .471$; Constructivist Designer, $F(1, 103) = 2.544$, $p = .114$; and total frequency, $F(1, 103) = .504$, $p = .479$. Thus, the participants' sector did not have any impact on the participants' opinions about the importance of the subcomponents of the competencies or on overall scores.

15. Degree

The participants' degree levels were compared based on the frequent usage of competencies associated in their role as Collaborator, Cognitive Coach/Consultant, and Constructivist Designer. The total frequencies of these four competencies were compared using univariate ANOVA. The higher the total numbers, the more frequently competencies are used by the online instructors. Those whose degree was lower than a master's degree were extracted from the analysis due to their low numbers. There were ten participants who had an associate's or bachelor's degree. The analysis was performed including them; however, the results were not promising. For this reason, the participants with master's and doctoral degrees were compared at the second round of the analysis. The descriptive statistics result for factors and total competencies are illustrated in the following table.

Table 64. Three Factor Model - Degree

Descriptive Statistics				
	Degree	*M*	*SD*	*n*
Collaborator	Master	23,9344	6,60017	61
	Doctorate	27,3714	3,97111	35
Cognitive Coach & Consultant	Master	37,0820	4,88295	61
	Doctorate	37,6000	4,00881	35
Constructivist Designer	Master	19,0984	3,81534	61
	Doctorate	19,6571	4,21442	35
Total	Master	80,1148	12,48345	61
	Doctorate	84,6286	8,73157	35

The analysis revealed that Collaboration yielded significant results: Collaborator, $F(1, 94) = 7.840$, $p < .05$; Cognitive Coach and Consultant, $F(1, 94) = .284$, $p = .595$; Constructivist Designer, $F(1, 94) = .442$, $p = .508$; and total frequency, $F(1, 94) = 3.567$, $p = .062$. The participants with a doctorate degree used the Collaborator competencies more frequently than did the participants with a master's degree.

THEMES IDENTIFIED IN STUDY (PRACTITIONERS)

The data collected from the practitioners generated the following themes related to four constructivist roles and associated performance statements (behaviors) for online instructors.

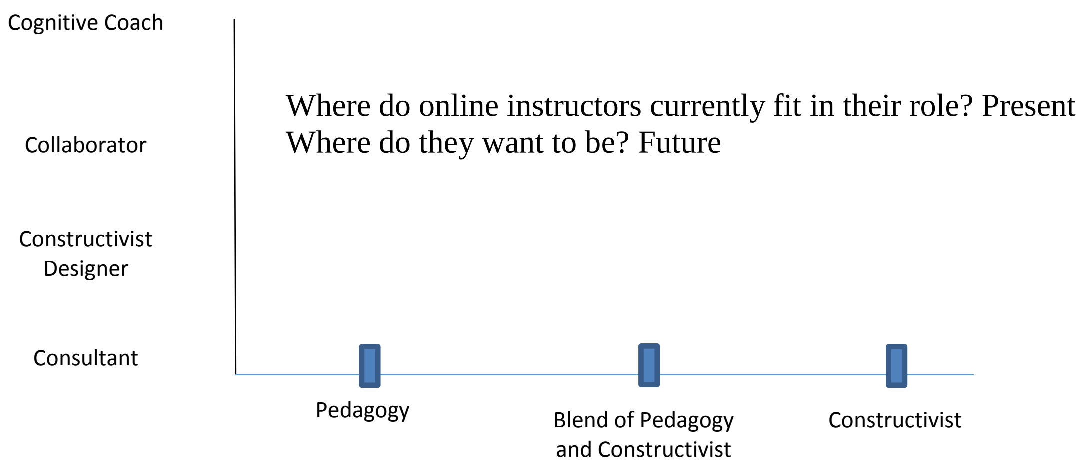
Role Definition of Online Instructor

In this study, practitioners were surveyed on the constructivist roles they perform as an online instructor. Practitioners clearly defined their primary role as a Collaborator. As the field of online learning evolves, a shift in role definition will change. The majority of online instructors could relate to this role as a Collaborator due to the structure and nature of the current online learning platforms. The majority of currently online platforms are designed and driven based on a set of core discussion threads that allows an instructor to initiate and create the interaction and engagement in an online learning environment. Several universities are moving away from this approach and allowing learners to create an action plan for their achievement of the course objectives focused more on accomplishment of activities and exercises and less on discussion threads. In this new environment, discussion threads will evolve into a collaborative thread for exploring multiple learner perspectives. This approach fits the constructivist principles that allow learners to construct knowledge based on their learning needs. As the online community transitions to this type of learning environment, an online instructor’s role as a Collaborator will change and evolve to a more mature “collaborator” who doesn’t initiate the discussion but guides the conversation based on a set of guiding principles. This approach will definitely impact how an instructor’s role is perceived, defined, and influenced in an online learning environment.

Dimensional Role of an Online Instructor

The online instructor roles identified in this study focused on a constructivist view as a Cognitive Coach, Collaborator, Designer and Consultant. In this research, practitioner participants identified the dimensional role of an online instructor. The practitioner participants believed that they performed these roles on a dimension from pedagogy to constructivist. This dimensional view was seen from two lenses: role as a constructivist instructor and in practice of pedagogy or constructivist principles. Future research is needed on how this dimensional role is applied in an online learning environment. The majority of participants were familiar with a pedagogy approach to learning but struggled with applying a constructivist approach to an online course. It's important to note that constructing knowledge is an active process for a learner as well as an instructor. Online instructors will need to define their current teaching preference and gradually adjust to incorporate more constructivist principles as they become comfortable with this approach to learning. This is definitely a journey that will take time, practice, and effort on the part of an online instructor. Making this transition might be easy for some instructors and a challenge for others. Online instructors must assess where they current fit on this continuum and where they want to progress in their teaching style. This assessment will be critical to maintaining a quality online learning environment and to the growth and development of online instructors as they mature in their ability to deliver an engaging and interactive online course.

Figure 7. Dimensional Role of an Online Instructor



Role Assessment Plan

The constructivist competency model along with associated performance (behavior) statements in this study will need to be implemented as part of a certification program for online instructors. This certification program will need to include a plan for assessing an online instructor's role and current level of performance. This assessment plan would include a plan for achieving the target performance based on the various roles of an instructor. This assessment plan would give an online instructor the ability to identify any opportunities for developing skills as a consultant, coach, collaborator, and designer aligned with the constructivist competencies identified in this study. This assessment plan would enable online instructors to determine a plan of action for developing their pedagogy to constructivist competencies based on their personal assessment on a range of low, medium, and high.

Qualities of a Successful Online Learning Environment

Most participants perceived that the survey was developed to define the qualities of a successful online learning environment. They believed that performing these traits of a constructivist instructor would “magically” qualify their course as successful or effective. This assumption needs to be validated in a future study to determine the correlation between the behaviors of a constructivist instructor and the overall learner satisfaction of the learning environment. As we shift toward an informal, collaborative, reflective learning environment focused on learner-generated content (Berge, 2008) we must also shift the standards for a quality online course.

Spectrum of Constructivism

In this study, the constructivist view of learning was defined as an epistemology that emphasized how learners generate their own rules and how they use mental models to make sense of their own experiences and construct knowledge (Kurt, 2011). However, they are many versions of constructivism that focus on how a learner constructs and develops knowledge. This was evident in this research that each online instructor had a different spectrum of constructivism that colored their view of how this concept can be applied in an online learning environment. One end of this spectrum addresses individual construction of cognitive knowledge; the other end of the spectrum represents the construction through social interaction (Boghossian, 2006). According to Boghossian (2006), constructivism is presented in various forms to the extent that cognitive structures are viewed as individually constructed in the process of interpreting experiences in a particular manner. How we apply this individual construction of knowledge in an online learning environment has to be both cognitive and social based on application and interpretation of instructor and learner. This spectrum was most evident in the frequency of use (application) of competencies for online instructors. The spectrum identified in usage of competencies based on role definition ranged from Collaborator to Constructivist Designer with a blended role definition as a Cognitive Coach and Consultant. Participants believed that when they facilitate an online course, they use the competencies associated with a Collaborator first compared to those of a Constructivist Designer.

Limited Career Development

Limited opportunities exist for ongoing coaching and mentoring beyond the required orientation training offered by institutions or universities for online instructors. According to the research data, 81% of participants obtain additional (annual) training through professional development workshops, 56.6% through webinars in online learning, and 58.49% through annual professional development workshops offered by university or external professional organizations. This is an indication that ongoing training and professional development opportunities are very limited for online instructors in the field of online learning. Web-based instruction (online learning) is greatly impacting current university practices and policies and quickly changing the fabric of higher education (Rowley, Lujan, & Dolence, 1998). This question on professional ongoing training correlated with the list of publications and research conducted in the field of online learning provided by participants in the previous question of the survey. Very few instructors have published or conducted research in the field of online learning. This is an indication that limited knowledge in the field is being developed and shared within the online community; 10% of the participants noted that they had limited consulting experience in the field of online learning. The correlating responses related to consulting and mentoring were attributed to experience as an advanced facilitator for online faculty. The few instructors who provided comments recognized that they had experience collaborating, training, or leading other instructors in how to design materials for their online courses, brainstorm ideas for engaging students in the learning process and functioning in a hybrid learning environment. Participants also recognized their contributions for creating professional development workshops for new instructors, developing webinars for ongoing training, creating materials for eLearning certification programs, and designing assessment techniques for online instructors to use in their online courses. It was interesting that one participant noted the need to conduct training for online instructors on how to engage participants using social media collaborating tools. Online instructors are collaborating beyond the boundaries of their organizations through other informal channels such as LinkedIn discussion forums, blogs, conferences, and social forums. This illustrates the need for ongoing continuing educational opportunities to support the development of an online instructor. A core function of developing the skills of an online instructor is by establishing a set of certification standards that enable online instructors to plan for developmental opportunities that fit identified performance gaps, ensuring opportunities are provided for growth and development through workshops, practicums, and coaching along with mentoring. A defined set of competencies would ensure a consistent approach to encourage ongoing career development and growth in the field of online learning.

VALIDATION OF LITERATURE

Class Interaction

Participants who participated in this study validated that interaction is core for creating a robust online learning environment. According to Moore (1989), interaction between an instructor and learner is critical to maintaining the interest and engagement of a learner in an online learning environment. Moore (1989) made the distinction between the various types of interaction that can occur in an online learning environment. Moore (1989) defined these as learner-teacher, learner-content, and learner-learner interactions. Moore believed the most difficult challenge in an online learning environment was creating the learner-to-learner interaction. This interaction, according to practitioners, is important but not necessarily focused on the learner experiences. Practitioners felt that a balance was needed when sharing individual experiences when interacting in a class discussion. They mentioned the need to maintain structure within the class environment, allowing students to stay focused on the main topic. Practitioners felt that the interaction provided in a class discussion should be collaborated between instructor, learner, and peers in an online learning environment.

Motivation

In this study, 10% of practitioner participants mentioned that interaction is a key motivator to maintaining the interest of a learner in an online learning environment. The ARCS Motivation Model (Keller, 1987a) was mentioned as a primary study that validates that interaction is core to motivating and retaining a learner's interest. ARCS Model is a method for improving the motivational appeal of instructional materials (Keller, 1987a). Motivation was a key topic that practitioners felt needed to be addresses in an online learning environment. The ARCS Model is based on four conceptual categories that formulate human behavior (Keller, 1987a), and it seeks to enhance the motivational appeal of instructional materials along with common instructional design models. The ARCS Model is based on the macro design of motivation and instructional design (Keller, 1987b). This premise supports the role of an online instructor as a constructivist designer. The core competencies identified in this study were formulated based on the need of an instructor to design instructional materials that engage a learner by creating instructional materials in conjunction with collaborative tools. These materials should motivate and inspire a learner to engage in the active process of learning while constructing and developing their knowledge.

Socratic Model

Another component of class interaction was the need for the online instructor to provide a rich learning environment using reflective questions to probe for deeper understanding of a concept. The “Socratic Model” was mentioned as a key contributor by participants for providing substantive feedback in an online learning environment. In a Socratic (pedagogy) environment, the truth is discovered and expressed through language (Boghossian, 2002). The purpose of the Socratic method is to help the student and the teacher find the truth (Benson, 2000). Socrates knew that asking a series of questions would lead to a “truth” for the learner (Benson, 2000). This is a common approach used in an online learning using focused discussion questions or threads. In an online environment, questioning becomes a major means by which students are helped to construct meaning (Rovai, 2004). This support the research results that the role of a Collaborator is important to the role of an online instructor.

Problem-Based Learning

Problem-Based Learning (PBL) is an instructional strategy that develops critical-thinking and creative skills in a learner, improves problem-solving skills, and improves motivation and transfer of knowledge to new situations (Hmelo-Silver & Barrows, 2006). An important component of utilizing PBL as an instructional strategy is the ability of an instructor to encourage and create a collaborative learning environment (Yew & Schmidt, 2012). This problem-based approach to collaborative learning is best described as a constructivist learning environment (Schmidt et al., 2007). One of the foundational principles of a constructivist learning environment is the ability of an online instructor to promote critical thinking and problem-solving skills using problem-based strategies. A key message that was indicated in the data from this research was the usage of problem-based learning in an online instructor's online class environment. Twenty percent of online instructors believed that problem-based learning was critical to enabling and empowering learners to take ownership of their learning. This concept was reflected most in the role of a Constructivist Designer. Practitioners believed that designing scenarios, case studies, and virtual labs was important to how you stimulate learners to develop their knowledge on a concept. These communication aids and strategies are available to support online presentations—the use of graphics and visual tools such as, "whiteboards," threaded discussions, real-time as well as asynchronous exchanges, and other community-building communications—and can provide more interaction than possible in most conventional classrooms (Sjogren & Fay, 2002). This transformation of the online learning environment has created a need for a new set of skills and competencies for an online instructor.

Feedback and Modeling

A key element of a constructivist learning environment is the ability of an online instructor to provide substantive feedback through formal or informal channels. Practitioners in this study acknowledged that feedback is important but also realized that feedback can come from multiple sources. Feedback is associated with the types of responses that provide information to students about the correctness of their assignments, homework, and class contributions (Mory, 2004). Practitioners mentioned the need to provide multiple channels for substantive feedback from peers and other sources. Traditionally, feedback is given at the end of a week by an instructor through a gradebook system. Practitioners found that feedback given “just in time” would be more beneficial to an online student. According to Vrasidas and McIsaac (1999) feedback in an online learning environment is important for more than just as a mechanism informing students how well they did on an assignment. Practitioners also mentioned the need for this feedback to come in various forms, using collaborative tools such as chat forums, individual forums, discussion forums, projects, electronic portfolios, and other students. This reinforcement would assist in building the knowledge of learners and enable them to apply feedback in a rapid manner. Stevenson, Sander, and Naylor (1996) found that providing timely and encouraging feedback on assignments directly affected a student’s general sense of satisfaction with a course. Second, practitioners also mentioned the impact that modeling can have on a learner in an online learning environment. Practitioners recognized that modeling is important to demonstrating relevant worked examples for students to apply in developing their knowledge on a topic. Several practitioners mentioned approaches that they use to effectively model in online courses such as online role play, reflection scenarios, online tutoring, practicums, and videos and simulations demonstrating worked examples. In this study, the constructivist design principles identified by Jonassen were foundational to the development of the role and competencies for online instructors (Jonassen, 2000). Participants had the opportunity to provide feedback on how these constructivist design principles could be applied to an online learning environment.

EXPERT VALIDATION STUDY

The demographical information was captured to determine the level of expertise and to validate that the sample population met the criteria as an expert participants along with a comparative analysis of differences in perception based on sector, educational level, and years of experience. Williams (2003) used a multistep process to determine the criteria of an expert. This resulted in identifying the criteria for an expert as follows: 1) The individual has made a contribution to the field of online learning, 2) has a minimum of five years of experience, 3) is nominated by a peer, and 4) is willing to participate in the study. These experts consisted of 10 individuals with five years or more of online learning experience who was recognized as expert online instructors in the field based on their consulting experience, reputation in the industry, awards received in online learning, and successful completion of internal training and certification programs associated with university. In addition, they had facilitated at least one online course within the year and were recognized as reputable authors in the field of online learning.

Expertise Level of Experts

Table 65. Years of Experience—Experts

Please identify the number of years you have experience teaching in an online learning environment?		
Answer Options	**Response Percent**	**Response Count**
1 year	0.0%	0
2 years	0.0%	0
3 years	0.0%	0
4 years	0.0%	0
5 years or more	**100.0%**	**10**
***N*=**		**10**

Years Teaching Online

It was evident that the majority of the expert population had five or more years of experience teaching in an online learning environment. This illustrates that this expert population had acquired the basic knowledge of facilitating and navigating in an online learning platform. This also concludes that basic facilitation, content development, and classroom management skills were acquired given the years of experience in an online learning environment. Research has proven that management of an online learning environment is acquired through practice and experience using technology, tools, and best practices given the various dynamics of learners and administrative tasks.

Table 66. Years Teaching Online—Experts

Please identify the number of professional certifications and awards received within the last five years related to your experience as an online instructor.		
Answer Options	**Response Percent**	**Response Count**
0	0.0%	0
1	20.0%	2
2	30.0%	3
3	50.0%	5
4	0.0%	0
5 or more	0.0%	0
Other (please specify)		0
***N*=**		**10**

Certifications and Awards

Expert online participants were recognized in the field of online learning by the professional certifications and awards received as an online instructor. In this study, fifty percent of the expert participants had achieved a level of professional certification or achieved a recommended award in the field of online learning.

Type of Training Programs

Eighty percent of experts had attended a professional development workshop in order to maintain their effectiveness as an online instructor.

Table 67. Type of Training Programs—Experts

Please identify the type of training programs you have completed since becoming an online instructor.		
Answer Options	**Response Percent**	**Response Count**
Annual Professional Development Workshops	80.0%	8
Certification Program	60.0%	6
Local campus faculty development workshops	60.0%	6
Online Mentoring Session	40.0%	4
Professional Development Workshops	80.0%	8
Webinar in Online Learning	80.0%	8
Other (please specify)		0
***N*=**		**10**

Faculty Development

Institutions have approached faculty development based on levels of need and readiness levels of academic staff (Andrews & Klease, 1998). Faculty development is the foundation of building a solid quality online learning platform for online instructors. The expert participants recognize that ongoing professional development is critical to being successful as an online instructor, and 80% of the experts noted that they attend annual professional development workshops, professional development workshops, or webinars focused on developing their skills as an online instructor. Kabilan (2005) recommended online professional development programs aimed at motivating instructors; enhancing instructor's skills, knowledge, and ideas; and improving interactive competence in an online learning environment. This study recommended an online professional development program that gives instructors the opportunity to collaborate and share best practices for creating a robust learning environment. Of the expert participants, 60% recognized that certification programs and local campus faculty development workshops are needed to stay current in the field of online learning and engage in robust discussion and networking with other faculty members, and 40% recognized online mentoring sessions as a part of their development as an online instructor. These results clearly illustrate the link between faculty development and level of expertise in the field of online learning. It's clearly not enough to acquire the foundational skills acquired during initial onboarding training; ongoing learning and development are needed through various channels to sustain skills as a member of the online learning community.

Publications or Research Conducted in the Past Five Years

Eight participants indicated that they haven't published relevant research in the field of online learning. Two indicated that they had published articles in the field of online learning within the past five years in *Prominence of Scholarly Immediacy Terminology* journal and unpublished research in the field of online learning.

Online Consulting Experience

Experts provided a range of consulting experiences from industries such as Blue Cross Blue Shield of Michigan (BCBSM), independent consulting for online school district, coaching and mentoring other online instructors at local community college and universities, and training K–12 administrators for online certification program.

Table 68. Field of Study—Experts

Please list your field of study. You can select more than one answer for this question.		
Answer Options	**Response Percent**	**Response Count**
Communications	60.0%	6
English	10.0%	1
Language Arts	0.0%	0
Math	0.0%	0
Technology	30.0%	3
Other	10.0%	1
Other (please specify)	80.0%	8
***N*=**		**10**

Field of Study

Sixty percent identified their field of study as Communications, 30% contributed their expertise to the field of Technology, and 80% identified themselves in the "Other" category. This category's responses included performance improvement, education, psychology, human services, nursing, healthcare, history, foreign language, and criminal justice.

Educational Level

Sixty percent of expert panel members had achieved a doctoral degree in their chosen field of study. This recognizes that the expert panel members had the educational knowledge to support their expertise as an online instructor. In addition, 20% of panel members had completed their master's degree.

Table 69. Educational Level—Experts

Please identify the highest educational level you have achieved.		
Answer Options	**Response Percent**	**Response Count**
Associate degree	0.0%	0
Bachelor degree	10.0%	1
Master degree	20.0%	2
Doctoral degree	60.0%	6
Other	10.0%	1
Other (please specify)		2
***N*=**		**10**

Sector

As illustrated in the table below, 60% of the expert panel members currently work in the College of Education, 50% in the College of Humanities, and 40% in other colleges within a university setting. In this study, a sector can have an impact on the ability of an online instructor to apply constructivist principles in an online class. Participants recognized that certain subjects have a greater opportunity to demonstrate and utilize certain constructivist principles based on a learner's background and experience. For example, a learner in a statistics course would have a greater opportunity to apply knowledge and experiences to completing worked examples and case studies than would a learner in a nursing course.

Table 70. Sector or College—Experts

Please identify your sector or college that you currently work in within your university. You can select more than one answer for this question.		
Answer Options	**Response Percent**	**Response Count**
College of Education	60.0%	6
College of Humanities	50.0%	5
College of Information Technology	10.0%	1
College of Liberal Arts	20.0%	2
College of Social Work	0.0%	0
Other (please specify)	40.0%	4
***N*=**		**10**

Current Employment

This visual illustrates that 70% of expert panel members were employed as part-time online instructors working 39 hours or less per week. This is attributed to the fact that most online instructors balance the responsibilities of other outside commitments (i.e., professional work, consulting, volunteering) with their responsibilities as an online instructor. This gives an online instructor the ability to present real-world practical problems to students in an online learning environment based on their breadth and depth of experience in their field.

Table 71. Employment Status—Experts

Please identify your employment status as an online instructor.		
Answer Options	**Response Percent**	**Response Count**
Employed full-time, working 40 or more hours per week	20.0%	2
Employed part-time, working 1–39 hours per week	70.0%	7
Not employed, looking for work in online environment	10.0%	1
Not employed, NOT looking for work in online environment	0.0%	0
Retired	0.0%	0
Other (please specify)		1
***N*=**		**10**

Experience Teaching Online

The experts identified that they have taught at least one online course within a year, and 80% noted that they have taught over seven online courses within the last year. This experience of facilitating multiple courses in an online environment provides the depth of experience needed to understand and balance the demands of the learner with the dynamics of a robust class environment. The ability to replicate this experience in multiple course settings gives an instructor the ability to try new things while ensuring the course objectives are being met.

Table 72. Courses Taught—Experts

Please identify the number of online courses you instruct (teach) within a one-year timeframe.		
Answer Options	**Response Percent**	**Response Count**
1	10.0%	1
2	10.0%	1
3-6 (Listed separately)	0.0%	0
7 or more	80.0%	8
***N*=**		**10**

ANALYSIS OF DATA (EXPERTS)

Identification of Initial Constructivist Competencies

In the online ranking survey, experts were asked to rank importance of constructivist competencies from very important (5) to somewhat important (1) based on their perception of a quality online learning environment. An email invitation that described the details of the research study was sent to 10 experts in the field of online learning. The experts were sent the initial invitation and survey questions via Survey Monkey. The experts were contacted twice to increase the response rate if they had not responded to the initial questionnaire. A random link was generated in the invitation to provide a unique identifier for each expert. Each constructivist competency was classified based on the role of an online instructor. Role classifications were identified as Constructivist Consultant, Cognitive Coach, Constructivist Designer, and Collaborator. The following role descriptions were provided within the body of the survey. A constructivist consultant is an instructor who can mentor and model constructivist behaviors in an online learning environment by providing examples of desired behavior through overt performance called reflection in action. A cognitive coach has the ability to empower learners to interpret and construct meaning based on the coach's own experiences and interactions. A constructivist designer has the ability to design instructional materials and promote critical thinking skills in a learner using well-structured or ill-structured problems. As a collaborator, an online instructor would promote learner engagement and interaction through focused discussion threads in a collaborative learning environment. Experts were asked to provide an explanation of why they classified their role as a constructivist consultant, cognitive coach, constructivist designer, or collaborator. The experts believed that the role of an online instructor is a combination of all four identified in the literature. In 40% of the responses, participants indicated that to be an effective online facilitator, they would need to be a constructivist consultant and cognitive coach; 80% believed that their role was as a collaborator and constructivist designer.

Results of Expert Questionnaire

The following provides the results of how each expert identified his or her role as a constructivist online instructor. The perception of expert participants validated the following data based on the literature review. The following table illustrates the responses to the online survey completed by experts. According to the ten (10) experts surveyed the following role definitions of a Collaborator and Constructivist Designer with associated performance statements that focused on empowering learners to interpret and construct meaning along with promoting critical thinking skills were ranked as important to the role of an online instructor. Expert panel members were given a definition of the various roles of a constructivist online instructor and asked to select their role as a Constructivist Consultant, Cognitive Coach, Constructivist Designer, or a Collaborator. They could select more than one role. The results were as follows:

- 80% identified themselves as a Constructivist Designer (8/10 experts)
- 80% identified themselves as a Collaborator (8/10 experts)
- 50% identified themselves as a Constructivist Consultant (5/10 experts)
- 50% identified themselves as a Cognitive Coach (5/10 experts)

It is perceived that in their role as a constructivist designer and collaborator, the experts reinforced their skills by focusing on building a collaborative and socially engaging learning environment using focused discussion threads. They also utilized design principles when developing case studies, scenarios, and problem-based activities to empower learners to construct meaning based on course content and their own mental constructs. This dual role allows an online instructor to collaborate and design activities that ensure that learners will develop their knowledge and skills in an online learning environment. The expert panel perceived that the performance descriptors should be seen on a continuum from pedagogy to constructivist. This was quite evident when the experts were asked to perform a task-matching exercise using both pedagogy and constructivist competencies. In our reference to these performance statements, most expert participants saw themselves as equally competent in the pedagogy and constructivist competencies. The results of the study reflect that experts identified with the constructivist competencies by ranking constructivist competencies equal to or higher than pedagogy competencies.

Table 73. Matching Exercise—Experts

Matching Exercise—Answer Options **Pedagogy or Constructivist Competencies** This exercise required experts to match pedagogy and constructivist competencies with associated roles to provide a construct and association with role definitions.	Pedagogy or Constructivist Competency	Consultant Role	Cognitive Coach Role	Instructional Designer Role	Collaborator Role	Not Applicable	Average
1. Select appropriate methods and instructional strategies	P	3	1	7	2	1	2.8
2. Empower learners to interpret and construct meaning based on their own experiences	**C**	**2**	**8**	**2**	**4**	**0**	**4.4**
3. Provide relevant examples and supporting materials	**P**	**6**	**5**	**6**	**4**	**0**	**4.2**
4. Ability to facilitate and present information in an engaging manner	P	3	6	4	6	0	3.8
5. Create technology based instructional materials	C	3	1	9	2	1	3.4
6. Design instructional materials	C	2	2	9	3	1	3.4
7. Promote critical thinking skills using problems or scenarios	**C**	**6**	**6**	**6**	**3**	**0**	**4.2**
8. Coach learners in the usage of technology and collaborative tools	C	5	4	3	3	1	3.2
9. Create and modify instructional materials	P	3	2	7	1	0	2.6
10. Promote learner engagement and social interaction	P	4	5	1	8	0	3.6
11. Encourage and motivate leaner in an online environment	C	4	8	1	5	0	3.6
12. Facilitate and present information in an engaging manner	**P**	**4**	**7**	**3**	**6**	**0**	**4.0**

There were 10 experts participating in the study, and there were 12 competencies and four roles that experts identified their relation to by selecting a checkbox. The degree of relation was dichotomous (Yes or No). Each expert assessed relation of roles with all competencies. The competencies were grouped as constructivist or pedagogical competency. Each expert's response to the four roles under each competency was coded as "1" if the answer was "Yes" and "0" if the answer was "No." Each expert's response to the four groups under each competency was entered as cases in SPSS software. Cross-tabulation with the χ^2 test was performed to examine the differences between the competency groups and "Yes" and "No" responses for all roles. Cross-tabulation was conducted for all roles separately. The below presents the results of the analyses.

Consultant Role

Thirty-two percent of expert participants indicated that as an online instructor, they saw themselves performing the role of a Consultant.

Hypothesis:

- H_0: Is the consultant role independent of the types of the competencies pedagogy vs. constructivist?
- H_1: Is the consultant role dependent on the types of the competencies pedagogy vs. constructivist?

Results:

Table 74. Consultant Role—Expert Results

	Consultant Role		Total
	No	Yes	
Constructivist	42 (35.0%)	28 (23.3%)	70 (58.3%)
Pedagogical	33 (27.5%)	17 (14.2%)	50 (41.7%)
Total	75 (62.5%)	45 (37.5%)	120 (100%)

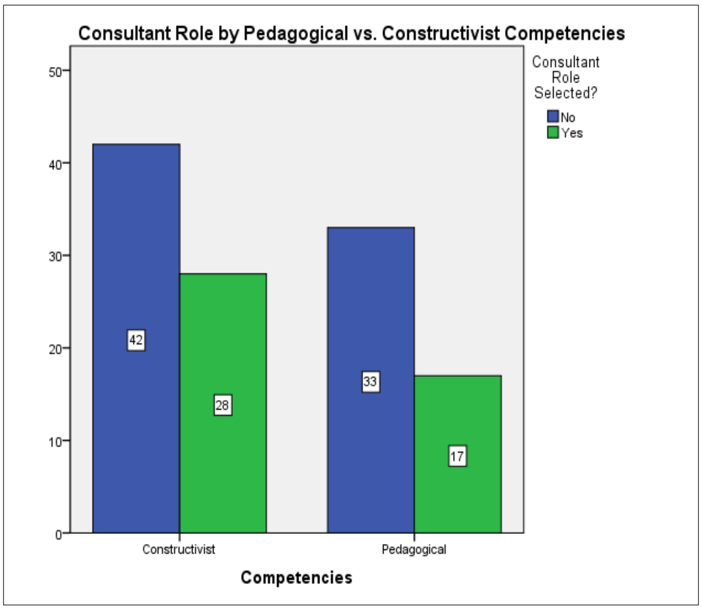


Figure 8. Consultant Role by Competency

The consultant role was selected by the majority as the least preferred (No) under both of the competency groups. Under constructivist competencies, the number was 42 (35.0%), and for pedagogical competencies, it was 33 (27.5%). Similar results were revealed in "Yes" categories. The numbers were 28 (23.3%) for the constructivist and 17 (14.2%) for the pedagogical competencies. The number of selections under the constructivist competencies, 70 (58.3%), was higher that pedagogical competencies (50, 41.7%). However, these differences in selection frequencies did not yield a significant result, χ^2 (1, 119) = .448, p = .503. Thus, it can be stated that the consultant role is independent of the competency types; however, the experts thought this role was closer to the constructivist competencies.

Cognitive Coach Role

Forty percent of expert participants indicated that as an online instructor, they saw themselves performing the role of a cognitive coach.

Hypothesis:

- H_0: Is the cognitive coach role independent of the types of the competencies pedagogy vs. constructivist?
- H_1: Is the cognitive coach role dependent on the types of the competencies pedagogy vs. constructivist?

Results:

Table 75. Cognitive Coach Role—Expert Results

	Cognitive Coach Role		Total
	No	Yes	
Constructivist	27 (22.5%)	43 (35.8%)	70 (58.3%)
Pedagogical	38 (31.7%)	12 (10.0%)	50 (41.7%)
Total	65 (54.2%)	55 (45.8%)	120 (100.0%)

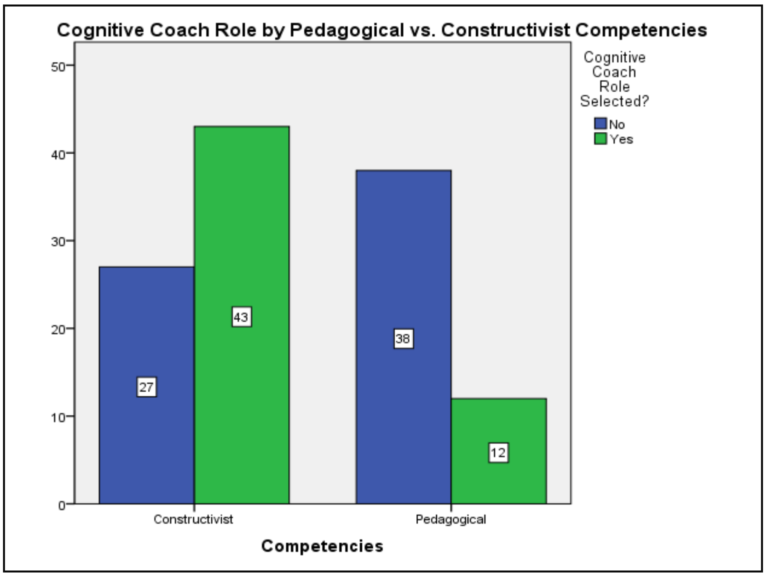


Figure 9. Cognitive Role by Competency

Cognitive Coach Role

With regard to the cognitive coach role, the majority selected “No” under the pedagogical competencies and “Yes” under the constructivist competencies. Under constructivist competencies, the number of “Yes” was 43 (35.8%), and, for pedagogical competencies, it was 12 (10.0%). For the “No” responses, the numbers were 27 (22.5%) for the constructivist and 38 (31.7%) for the pedagogical competencies. Moreover, these differences in selection frequencies yielded a significant result, χ^2 (1, 199) = 16.458, $p < .001$. These results demonstrated that the cognitive coach role is not independent from the types of the competency types. Specifically, the experts emphasized that the cognitive coach role is associated with the constructivist competencies opposed to the pedagogical competencies.

Instructional Designer Role

Eighty percent of the experts felt that the field was evolving and they would be required to perform as a constructivist designer in their role as an online instructor.

Hypothesis:

- H_0: Is the instructional designer role independent of the types of the competencies pedagogy vs. constructivist?
- H_1: Is the instructional designer role dependent on the types of the competencies pedagogy vs. constructivist?

Results

Table 76. Instructional Designer Role—Expert Results

	Instructional Designer Role		Total
	No	Yes	
Constructivist	46 (38.3%)	24 (20.0%)	70 (58.3%)
Pedagogical	13 (10.8%)	37 (30.8%)	50 (41.7%)
Total	59 (49.2%)	61 (50.8%)	120 (100.0%)

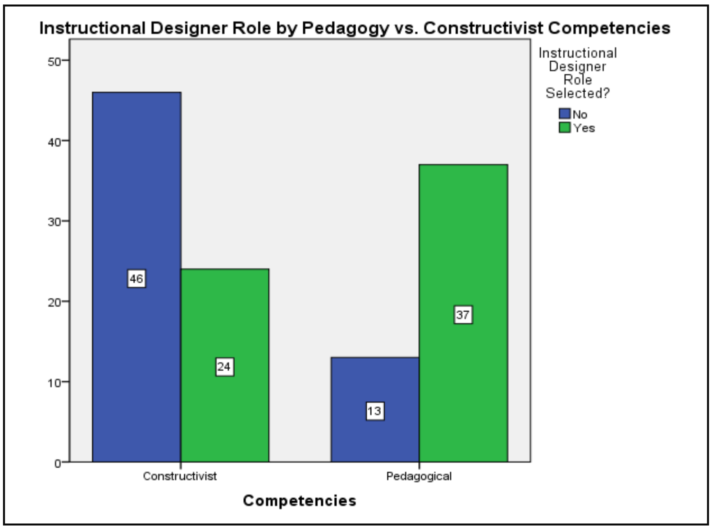


Figure 10. Instructional Designer Role by Competency

Instructional Designer Role

For the instructional designer role, the majority selected “No” under the constructivist competencies and “Yes” under the pedagogical competencies. Under constructivist competencies, the number of “No” was 46 (38.3%), and, for pedagogical competencies, it was 13 (10.8%). For the “Yes” responses, the numbers were 24 (20.0%) for the constructivist and 37 (30.8%) for the pedagogical competencies. Moreover, these differences in selection frequencies yielded a significant result, χ^2 (1, 199) = 18.406, p < .001. These results demonstrated that the instructional designer role is not independent from the types of the competencies.

Specifically, the experts emphasized that the instructional designer role is associated with the pedagogical competencies.

Role as Instructional Designer

The experts indicated that as online instructors, they didn't need to actually design the course materials because this task was delegated to a core team of instructional designers hired by the university. The main point the experts made was that creating courses that use technology appropriately—that is, for its contribution to learning rather than as "eye candy"—is difficult (Sjogren & Fay, 2002). Eighty percent of the experts felt that the field was evolving and they would be required to perform as a constructivist designer in their role as an online instructor. Many experts felt that the constructivist principles defined by Jonassen (1999) could apply to the course development and design of an online course.

Collaborator Role

Eighty-five percent of the population indicated they identified with the role definition as a collaborator.

Hypothesis:

- H_0: Is the collaborator role independent of the types of the competencies pedagogy vs. constructivist?
- H_1: Is the collaborator role dependent on the types of the competencies pedagogy vs. constructivist?

Results

Table 77. Collaborator Role—Expert Results

	Collaborator Role		Total
	No	Yes	
Constructivist	35 (29.2%)	35 (29.2%)	70 (58.3%)
Pedagogical	38 (31.7%)	12 (10.0%)	50 (41.7%)
Total	73 (60.8%)	47 (39.2%)	120 (100.0%)

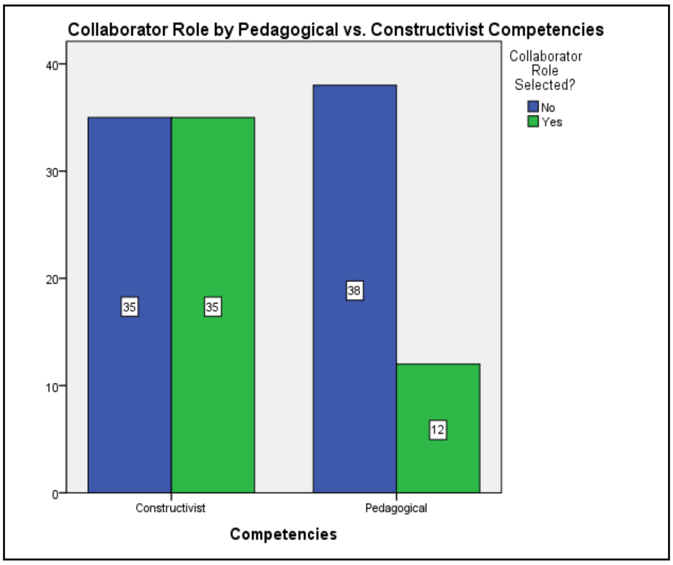


Figure 11. Collaborator Role by Competency

Collaborator Role

The responses regarding the collaborator role were equally distributed under the constructivist competencies and “No” responses were primarily selected under the pedagogical competencies. Under constructivist competencies, the numbers of “No” were 35 (29.2%) and “Yes” were 35 (29.2%), and, for pedagogical competencies, they were 38 (31.7%) and 12 (10.0%), respectively. Moreover, these differences in selection frequencies yielded a significant result, χ^2 (1, 199) = 8.275, p < .01. These results demonstrated that the collaborator role is not independent from the types of the competencies. Specifically, the experts emphasized that the collaborator role is more associated with the constructivist competencies than with the pedagogical competencies.

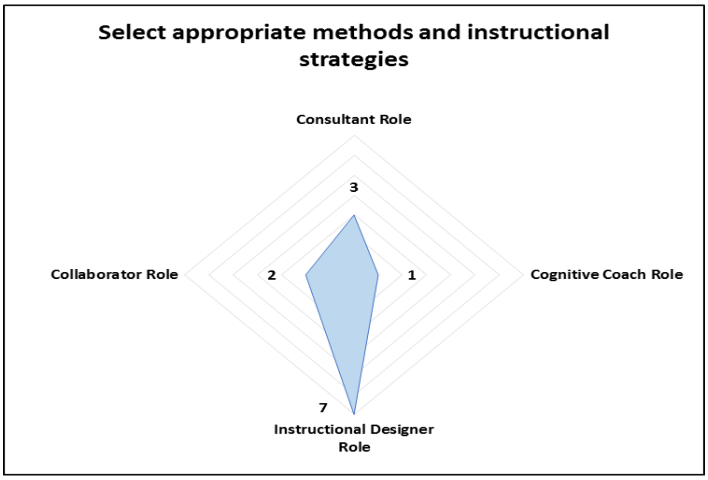
Role as Collaborator

The most significant role, identified by 85% of the population, was that of collaborator. The experts indicated that in this role as collaborator, they are constantly engaged with the learner through discussion threads that allow the learner to make decisions based on critical thinking and reasoning skills. They (experts) saw their role as a collaborator as based on their ability to utilize Socratic questioning and to promote critical thinking and problem-solving skills through active class discussions and focused activities. In their role as collaborator, the experts recognized that having the ability to engage students in the learning process through personal reflection and professional experiences was clearly linked to being a collaborator in an online course.

Analysis of Competency by Role

Figure 12. An Analysis of Each Competency by Roles—Instructional Strategies

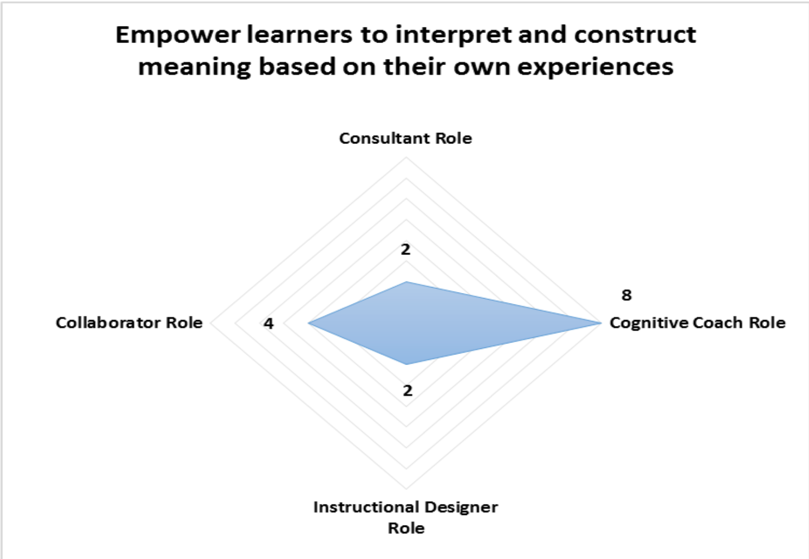
1. **Select appropriate methods and instructional strategies**



The appropriate methods and instructional strategies competency was selected by seven (70%) experts as associated with the Instructional Designer role. The second highest was Consultant role, with three selections. Experts stated that this competency is majorly related to the Instructional Designer role.

Figure 13. An Analysis of Each Competency by Roles—Empower Learners

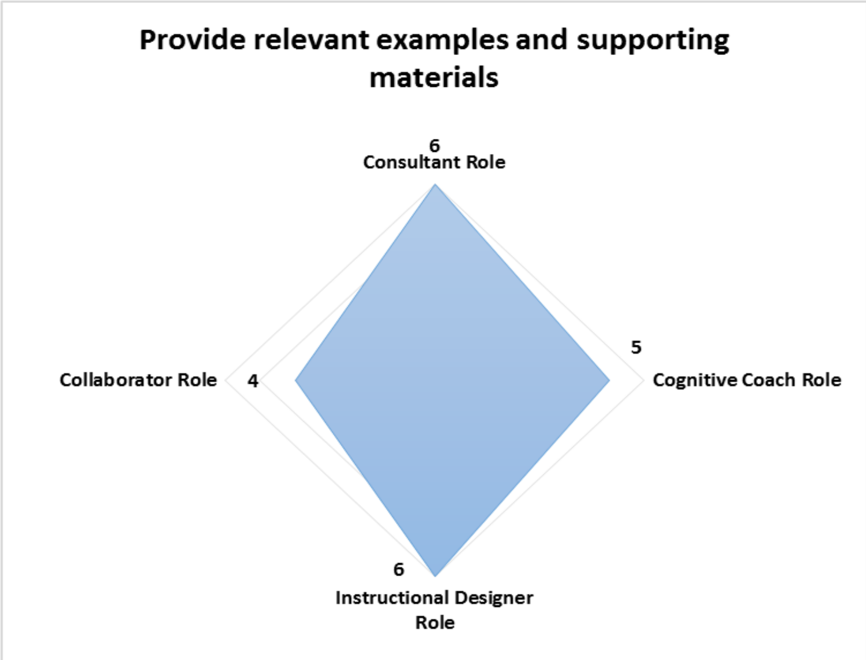
2. **Empower learners to interpret and construct meaning based on their own experiences**



The empower learners to interpret and construct meaning performance statement was based on the fact that the experts' own experiences were selected by eight (80%) experts as associated with the Cognitive Coach role. The second highest was Collaborator role, with four selections. Experts stated that this competency is greatly related to the Cognitive Coach role.

Figure 14. An Analysis of Each Competency by Roles—Relevant Examples

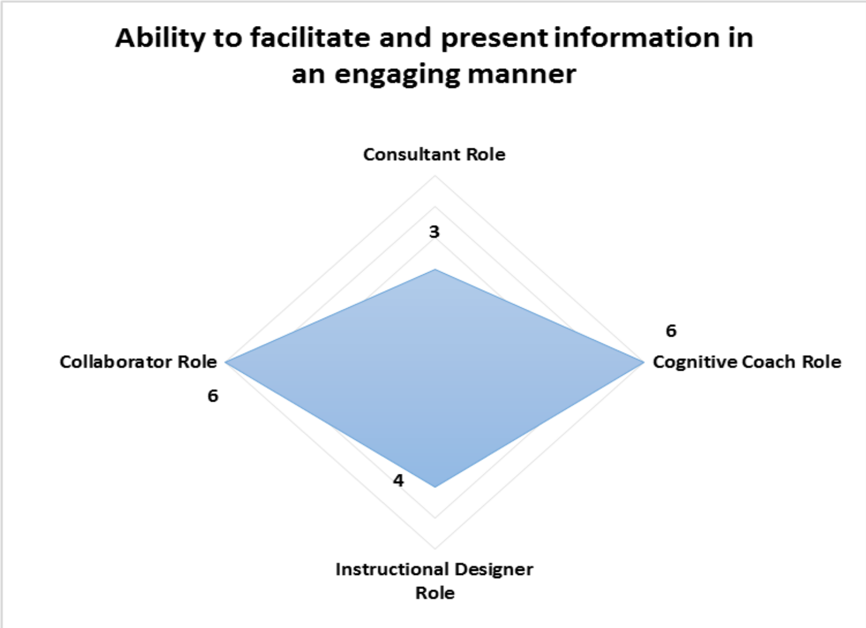
3. **Provide relevant examples and supporting materials**



The relevant examples and supporting materials competency was selected by six (60%) experts as associated with both Consultant and Instructional Designer roles. The Cognitive Coach and Collaborator roles were five (50%) and four (40%), respectively. Experts thought this competency had a distributed relation with all of the roles; however, Consultant and Instructional Designer roles were slightly ahead of the other two roles.

Figure 15. An Analysis of Each Competency by Roles—Facilitate and Present Information

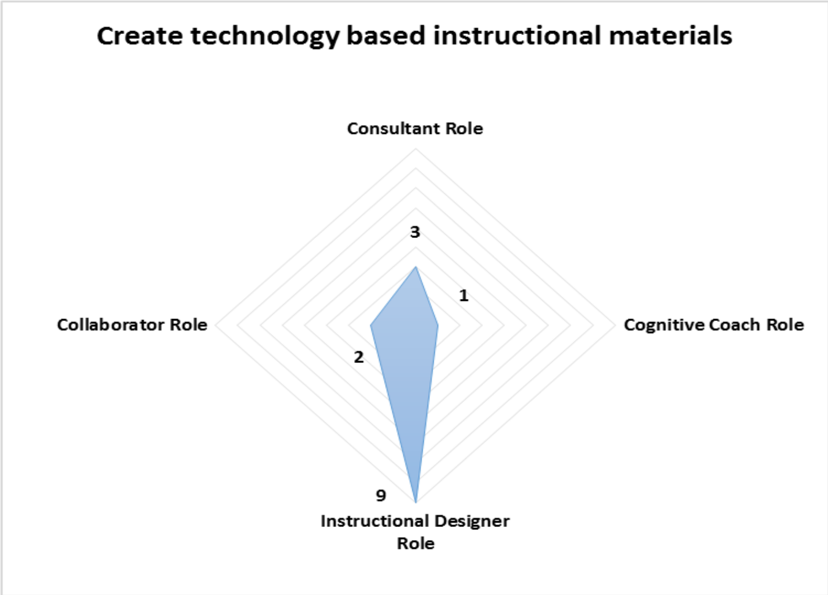
4. **Ability to facilitate and present information in an engaging manner**



The ability to facilitate and present information in an engaging manner competency was selected by six (60%) experts as associated with both Collaborator and Cognitive Coach roles. The Consultant and Instructional Designer roles were three (30%) and four (40%), respectively. Experts thought that this competency had a distributed relation with all of the roles; however, Collaborator and Cognitive Coach roles were slightly ahead of the other roles identified in this study.

Figure 16. An Analysis of Each Competency by Roles—Create Technology Based Instructional Materials

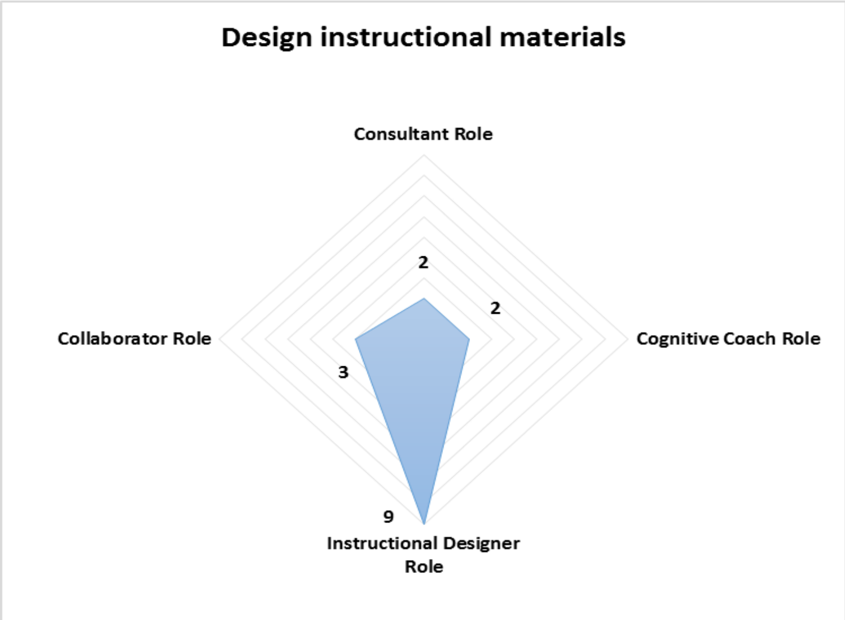
5. Create technology based instructional materials



The create technology based on instructional materials competency was selected by nine (90%) experts as associated with Instructional Designer role. The closest selected role was that of Consultant, with three (30%) experts. Experts thought that this competency may be majorly related to Instructional Designer role.

Figure 17. An Analysis of Each Competency by Roles—Design Instructional Materials

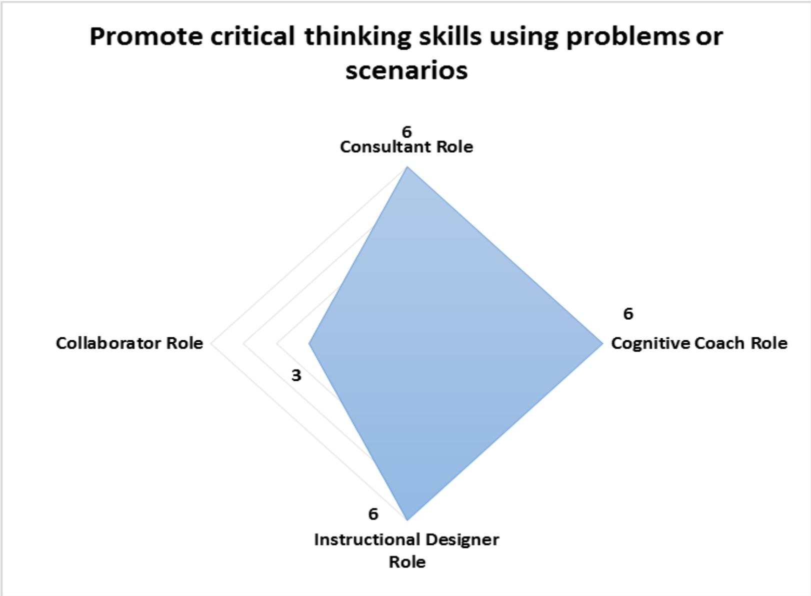
6. Design instructional materials



The design instructional materials competency was selected by nine (90%) experts as associated with Instructional Designer role. The second selected role was Collaborator, with three (30%) experts. Experts thought that this competency may be mainly linked to the Instructional Designer role.

Figure 18. An Analysis of Each Competency by Roles—Promote Critical Thinking Skills

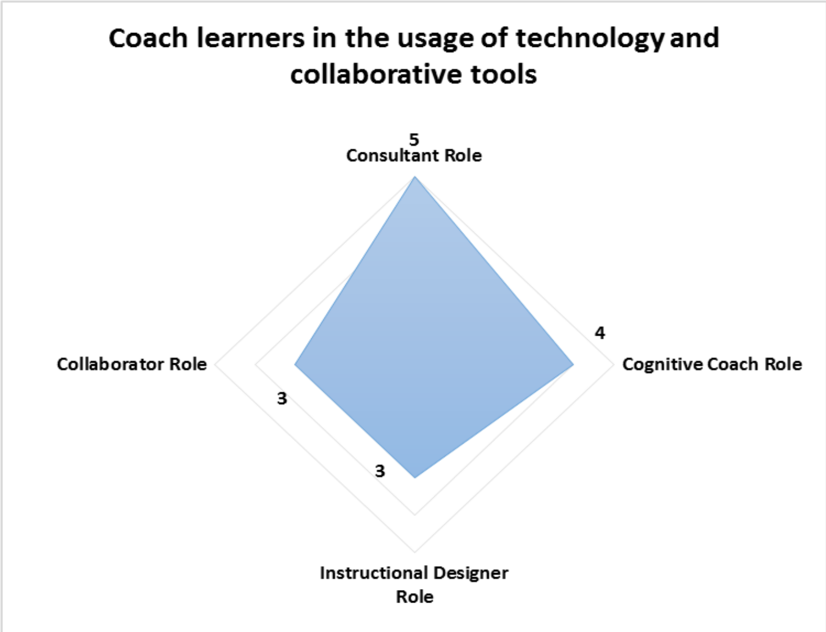
7. Promote critical thinking skills using problems or scenarios



The promote critical thinking skills using problems or scenarios competency was selected by six (60%) experts as associated with Consultant, Cognitive Coach, and Instructional Designer roles. The Collaborator role was selected by three (30%) experts. Experts thought that this competency had a distributed relationship with three roles as a Consultant, Cognitive Coach, and Instructional Designer.

Figure 19. An Analysis of Each Competency by Roles—Coach Learners

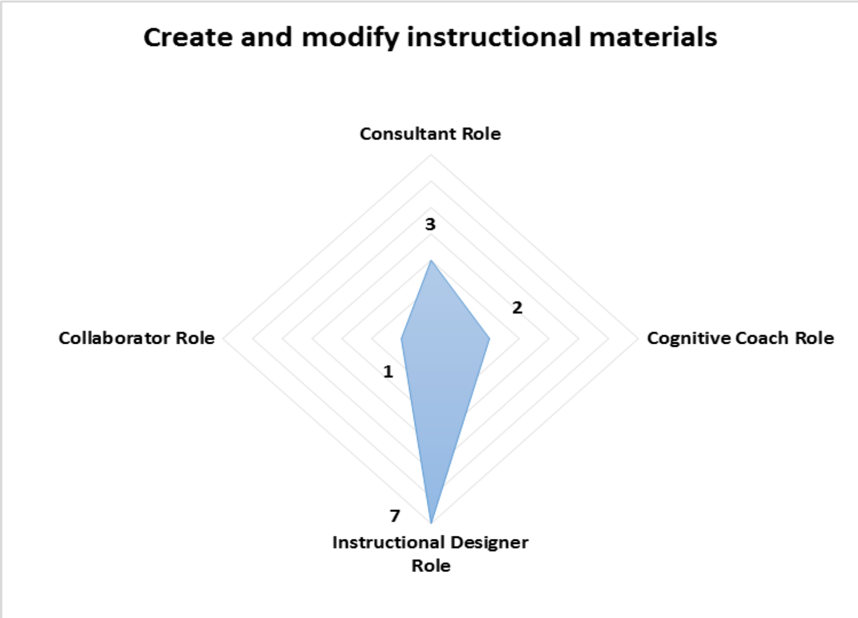
8. Coach learners in the usage of technology and collaborative tools



The coach learners in the usage of technology and collaborative tools competency was selected by five (60%) and four (40%) experts as associated with Consultant and Cognitive Coach roles, respectively. Three (30%) selected the Collaborator and Instructional Designer roles. Experts thought that this competency had a distributed relation with all of the roles; however, the Consultant and Cognitive Coach roles were slightly ahead of the other two roles.

Figure 20. An Analysis of Each Competency by Roles—Create and Modify Materials

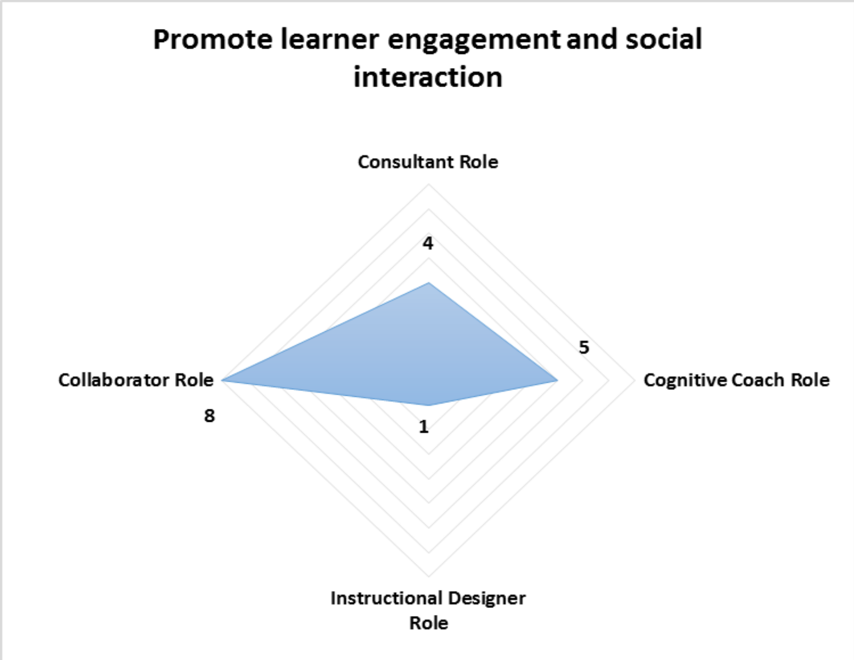
9. Create and modify instructional materials



The create and modify instructional materials competency was selected by seven (70%) experts as associated with the Instructional Designer role. The second highest role was Consultant, with three (30%) experts. Experts thought that this competency may be mostly linked to the Instructional Designer role.

Figure 21. An Analysis of Each Competency by Roles—Social Interaction

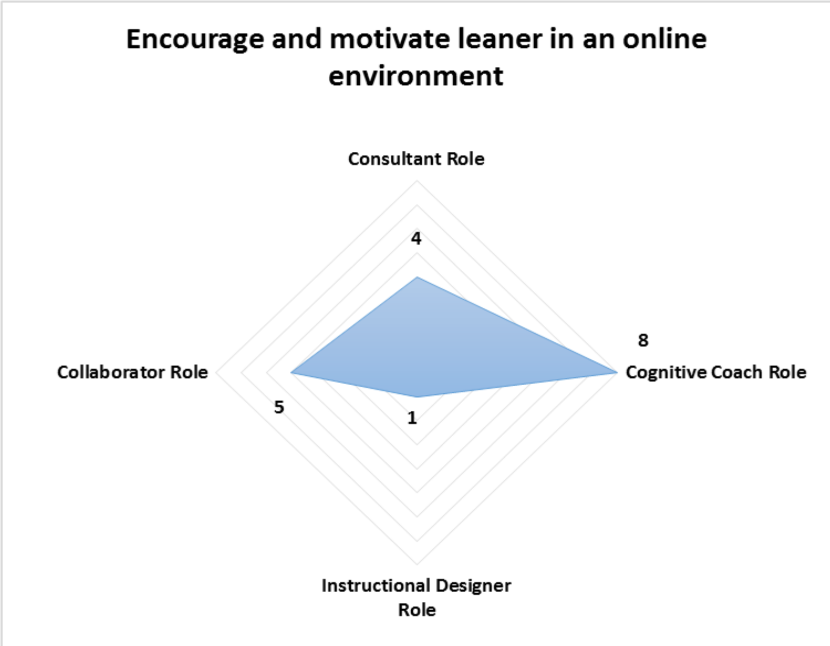
10. Promote learner engagement and social interaction



The promote learner engagement and social interaction competency was selected by eight (80%) experts as associated with Collaborator role. The closest selected role was Cognitive Coach role, with five (50%) experts. Experts thought that this competency may be mostly linked to the Collaborator role.

Figure 22. An Analysis of Each Competency by Roles—Encourage and Motivate Learner

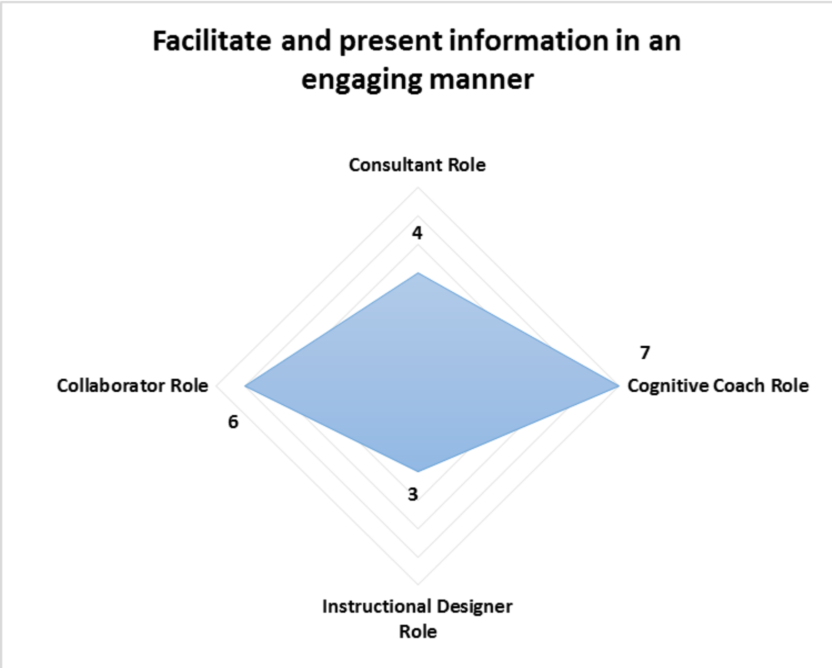
11. Encourage and motivate leaner in an online environment



The encourage and motivate leaner in an online environment competency was selected by eight (80%) experts as associated with the Cognitive Coach role. The closest selected role was Collaborator role, with five (50%) experts. Experts thought that this competency may be mostly linked to the Cognitive Coach role.

Figure 23. An Analysis of Each Competency by Roles—Facilitate & Present Information

12. Facilitate and present information in an engaging manner



The facilitate and present information in an engaging manner competency was selected by seven (70%) and six (60%) experts as associated with Cognitive Coach and Collaborator roles, respectively. The Consultant and Instructional Designer roles were four (40%) and three (30%), respectively. Experts thought that this competency had a distributed relation with all of the roles; however, the Collaborator and Cognitive Coach were slightly ahead of the other two roles.

Overall View of Important Competencies and Performance Descriptors—Experts

The following table illustrates the responses to the online questionnaire completed by experts. According to the 10 expert practitioners surveyed, the following competencies with associated performance statements were ranked as important to the role of a constructivist online instructor. Experts perceived that empowering learners to interpret and construct meaning based on their own experiences and class interactions was the most important performance descriptor associated with the role as a Cognitive Coach. Second, the performance descriptor associated with the ability to guide learners by providing substantive feedback was associated with their role as a Cognitive Coach. Third, the experts ranked the ability to design instructional materials (e.g., worked examples, case studies, and virtual labs) that enable a learner to build knowledge in a reflective and analytical manner as associated with the role of a Constructivist Designer. These performance statements were used to construct the development of the survey for practitioners.

Figure 24. Overview of Important Competencies—Experts

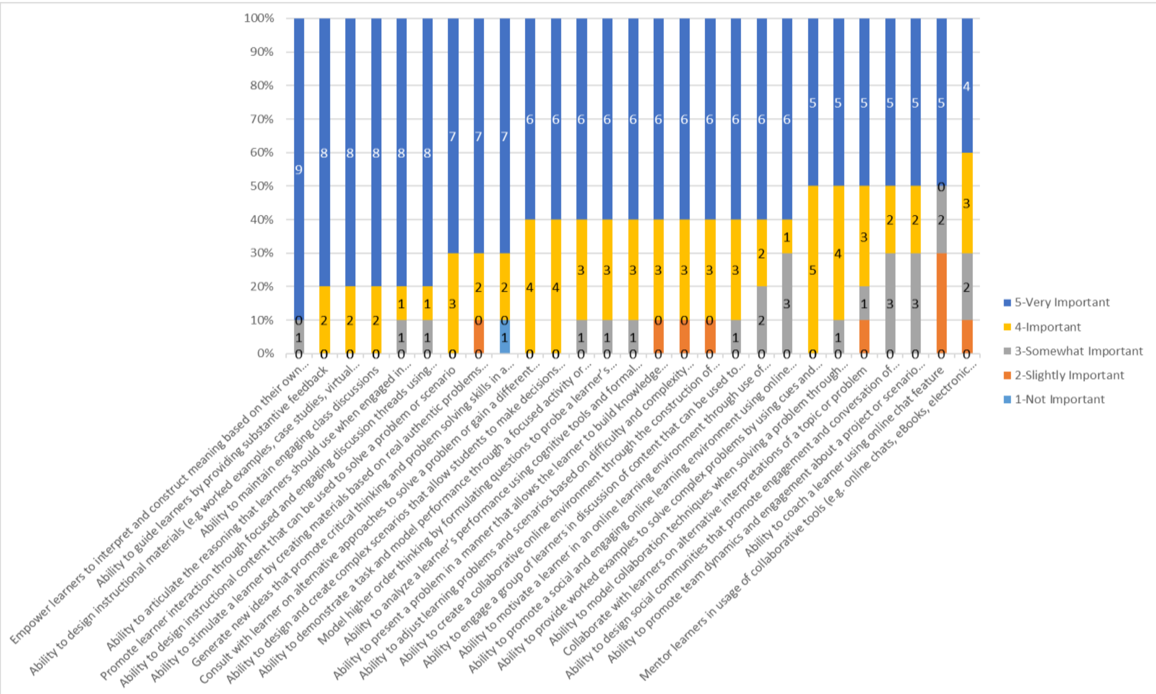


Table 78. Overall Ranking of Competencies—Experts

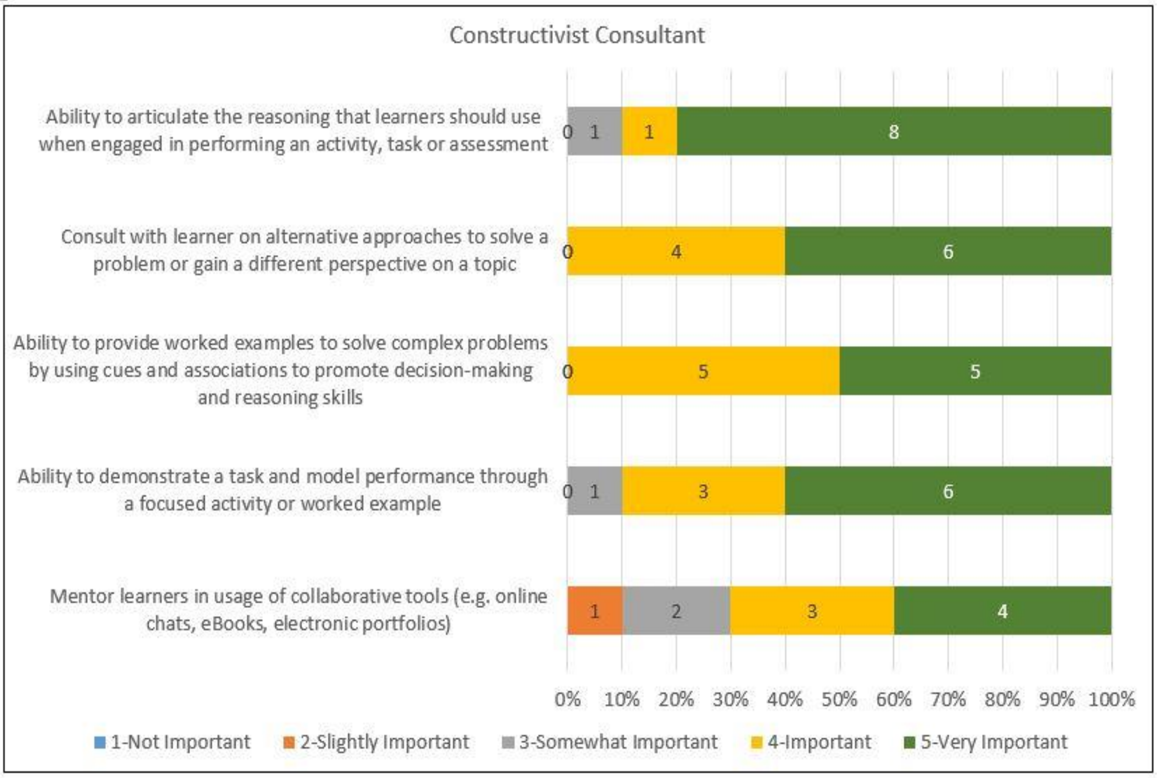
Overall Ranking of Competencies Answer Options	**1-Not Important**	**2-Slightly Important**	**3-Somewhat Important**	**4-Important**	**5-Very Important**	**Total Scores**
1. Empower learners to interpret and construct meaning based on their own experiences and class interactions	0	0	1	0	9	**48**
2. Ability to guide learners by providing substantive feedback	0	0	0	2	8	**48**
3. Ability to design instructional materials (e.g., worked examples, case studies, virtual labs) that enable a learner to build knowledge in a reflective and analytical manner	0	0	0	2	8	**48**
4. Ability to maintain engaging class discussions	0	0	0	2	8	**48**
5. Ability to articulate the reasoning that learners should use when engaged in performing an activity, task, or assessment	0	0	1	1	8	**47**
6. Promote learner interaction through focused and engaging discussion threads using authentic tasks in a meaningful context rather than abstract instruction out of context	0	0	1	1	8	**47**
7. Ability to design instructional content that can be used to solve a problem or scenario	0	0	0	3	7	**47**
8. Consult with learner on alternative approaches to solving a problem or gaining a different perspective on a topic	0	0	0	4	6	**46**
9. Ability to design and create complex scenarios that allow students to make decisions and select alternative methods	0	0	0	4	6	**46**
10. Ability to stimulate a learner by creating materials based on real authentic problems using collaborative tools, such as podcasts, blogs, online chats, videos, online games, and simulations	0	1	0	2	7	**45**
11. Ability to demonstrate a task and model performance through a focused activity or worked example	0	0	1	3	6	**45**
12. Model higher order thinking by formulating questions to probe a learner’s comprehension of core concepts	0	0	1	3	6	**45**
13. Ability to analyze a learner’s performance using cognitive tools and formal assessments	0	0	1	3	6	**45**
14. Ability to engage a group of learners in discussion of content that can be used to solve a problem or design a project or portfolio	0	0	1	3	6	**45**
15. Ability to provide worked examples to solve complex problems by using cues and associations to promote decision-making and reasoning skills	0	0	0	5	5	**45**
16. Generate new ideas that promote critical thinking and problem solving skills in a collaborative learning environment	1	0	0	2	7	**44**
17. Ability to present a problem in a manner that allows the learner to build knowledge in a reflective and analytical manner	0	1	0	3	6	**44**
18. Ability to adjust learning problems and scenarios based on difficulty and complexity of a learner’s ability to comprehend situations	0	1	0	3	6	**44**

Table 79. Overall Ranking of Competencies—Experts

Overall Ranking of Competencies Answer Options	**1-Not Important**	**2-Slightly Important**	**3-Somewhat Important**	**4-Important**	**5-Very Important**	**Total Scores**
19. Ability to create a collaborative online environment through the construction of knowledge and social negotiation	0	1	0	3	6	**44**
20. Ability to motivate a learner in an online learning environment through use of relevant stories, practical worked examples and personal reflection	0	0	2	2	6	**44**
21. Ability to model collaboration techniques when solving a problem through consensus-building activities	0	0	1	4	5	**44**
22. Ability to promote a social and engaging online learning environment using online chat feature	0	0	3	1	6	**43**
23. Collaborate with learners on alternative interpretations of a topic or problem	0	1	1	3	5	**42**
24. Ability to design social communities that promote engagement and conversation of course participants (learners and instructor)	0	0	3	2	5	**42**
25. Ability to promote team dynamics and engagement about a project or scenario through team forums and team chat rooms	0	0	3	2	5	**42**
26. Mentor learners in usage of collaborative tools (e.g., online chats, eBooks, electronic portfolios)	0	1	2	3	4	**40**
27. Ability to coach a learner using online chat feature	0	3	2	0	5	**37**

In this study, 90% of expert panel members recognized that their role is to empower learners to interpret and construct meaning based on their own experiences and class interactions. The expert panel recognized that the constructivist approach to empowering a learner is critical to being an effective online instructor. Experts are willing to transfer their perceived role as a leader in the classroom to being a guide on the side to support the knowledge construction of a learner. Second, expert panel recognized that providing substantive feedback is equally important for an online learner. This substantive feedback can be given formally or informally in an online environment. It is critical to the growth and development of learners as they construct and develop their knowledge in a concept. Third, the expert panel recognized that designing worked examples, scenarios, case studies, and virtual labs is important to constructing the knowledge of a learner through establishing a base foundation. In the role as a constructivist designer, an instructor must ensure that any activities, exercises, and worked examples support the course objectives. Last, the expert panel recognized that creating an engaging and interactive class discussion is critical to an effective online learning environment. This stimulating environment is created through active interaction and engagement by participants and instructor. The results of the expert panel validate that a constructivist approach focused on a learner's needs is critical to the competency development of an online instructor.

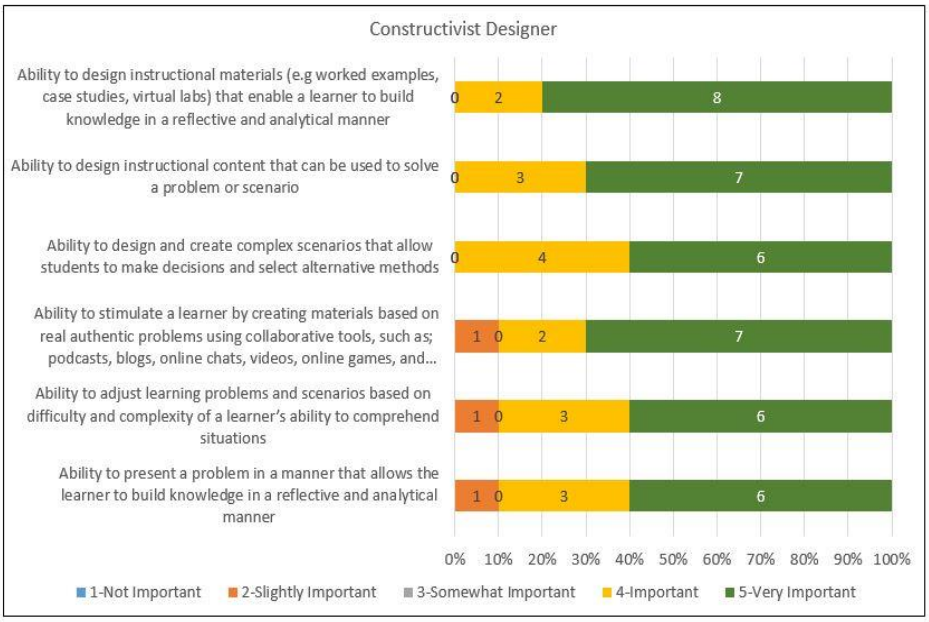
Figure 25. Constructivist Consultant Role—Expert Results



Constructivist Consultant Role

Eighty percent of expert panel members perceived that in their role as a constructivist consultant, the most important task to perform is the ability to articulate the reasoning that learners should use when engaged in performing an activity, task, or assessment. This task allows a learner to develop the critical thinking and problem-solving skills associated with constructivist principles. Enabling learners to comprehend why they're performing a task gives them the ability to replicate the activity, task, or assessment in a self-controlled environment without the assistance of an instructor. This self-sufficiency enables learners to develop at their own pace while maintaining control and the pace of their learning. Sixty percent of expert panel members perceived that consulting with a learner on alternative approaches to solving a problem or gaining a different perspective supports their role as a constructivist consultant. In this role an online instructor is a researcher, mentor, role model, and enabler of new knowledge using industry examples and best practices; similar to the role of a subject matter expert (SME).

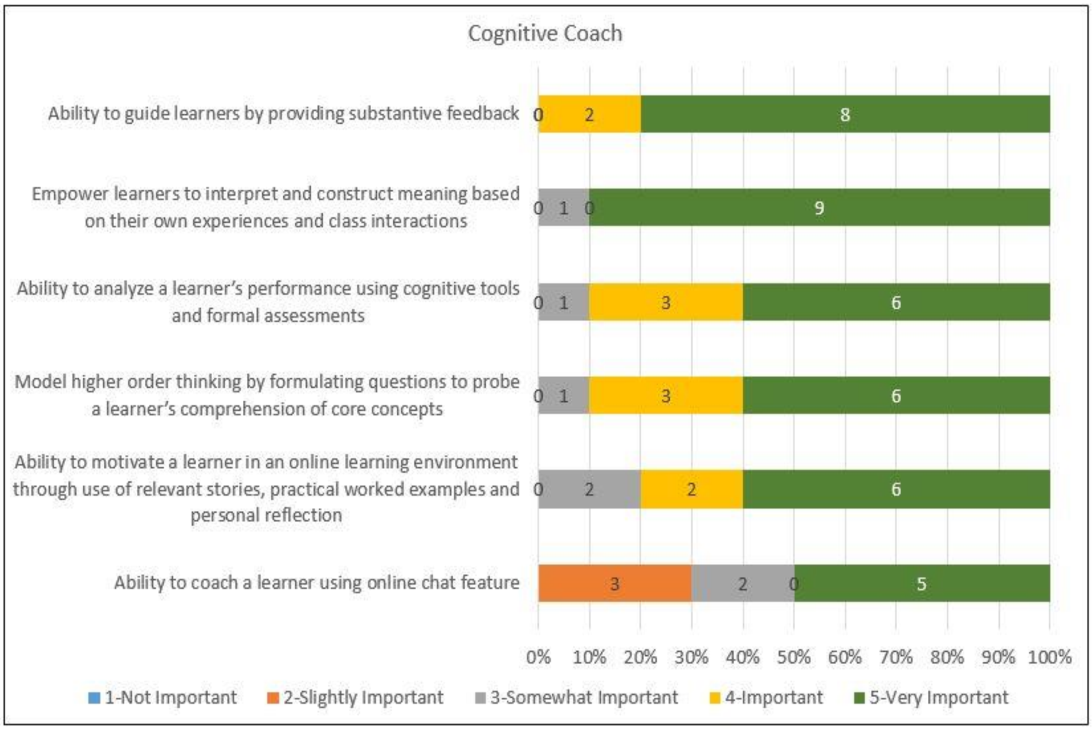
Figure 26. Constructivist Designer Role—Expert Results



Constructivist Designer Role

In this study, 80% of expert panel members perceived that in their role as a constructivist designer, the most important task that they perform is the ability to design instructional materials using worked examples, case studies, and virtual labs that enable a learner to build knowledge in a reflective and analytical manner. This task allows an instructor to identify and develop relevant resources that facilitate the knowledge construction process instead of knowledge reproduction (Jonassen, 2004). These case studies, worked examples, and scenarios enable a learner to build a platform (foundation) for working through similar situations when problem solving. In this role, an online instructor is an instructional designer utilizing expertise of the content to develop robust exercises, case studies, worked examples, exercises, and activities to illustrate core concepts and principles of a topic or task.

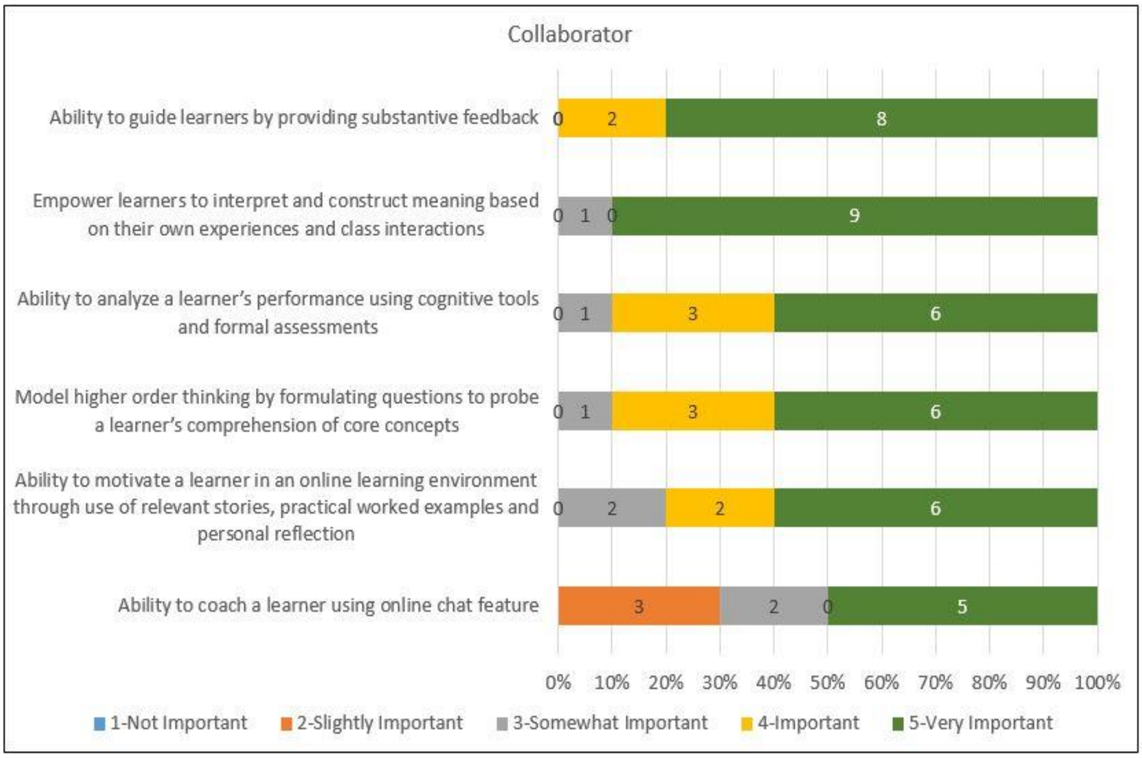
Figure 27. Cognitive Coach Role- Expert Results



Cognitive Coach Role

In this study, 90% of expert panel members perceived that in their role as a cognitive coach, they need to focus on empowering learners to interpret and construct meaning based on their own experiences and class interactions. As a cognitive coach, an online instructor can empower a learner to develop a cognitive structure that supports the development of newly constructed knowledge. This enhanced knowledge enables learners to build a cognitive structure that supports their ability to learn new concepts and process information along with the class interaction needed to stimulate new ideas, innovate, and collaborate with their peers. In this role, an online instructor is a guide who enables a learner to grasp and apply concepts. A Cognitive Coach is responsible for cultivating a quality online environment by being a guide on the side, not the primary facilitator of knowledge (Coppola, 1997).

Figure 28. Collaborator Role—Expert Results



Collaborator Role

In this study, 90% of expert panel members perceived that in their role as a collaborator, they need to focus on empowering a learner to interpret and construct meaning based on their own experiences and class interactions. This task allows learners to develop their critical thinking and problem-solving skills as transferrable back on the job. These transferrable skills enable learners to make inferences about their own experiences and how they relate to solving problems and constructing mental models about a situation. In this role as a Collaborator, an instructor is responsible for promoting the interaction needed to make an online class robust and for engaging using focused discussion questions and collaborative tools.

FEEDBACK FROM EXPERT STUDY

Dimensional Role of an Online Instructor

Evolution of the role as an online instructor appears to appear in a multi-dimensional view, based on feedback from expert panel. The dimensional role of an online instructor assumes that an online instructor can "wear" many hats or roles during the evolution of a course. This dimensional role can span from designer to consultant to coach to collaborator. According to the expert panel, this role dimension is driven by the needs of the learner, experience of the online instructor, and responsibilities managed by the university and instructor. The responsibilities required of an online instructor vary from university to university. Previous studies have identified the role of an online instructor as a technologist, evaluator, administrator, advisor/counselor, and researcher (Bawane & Spector, 2009). Williams (2003) described this role as trainer, instructional designer, change agent, graphic designer, technician, and media publisher. Berge (2008) described the role of online instructor from a functional perspective as social, managerial, pedagogical, and technical in nature. The dimensions of the roles discussed in this study focused on the instructor as a coach, mentor, collaborator, designer, and consultant. Future studies are recommended for how an instructor balances these roles in an online learning environment given the technology changes and evolution of a learner's needs. If a learner is to experience an optimal online learning experience, online instructors have to balance the challenges of managing multiple learning preferences, administrative tasks, and an ever-changing online platform while performing in their role as collaborator, designer, consultant, and cognitive coach. Preferences regarding instructor roles and competencies may change and vary with respect to time and advancements made in technology (Klein et al., 2004).

Constructivism Terminology

Expert participants stated in their feedback that clearly defining constructivism terminology along with relevant examples would help in setting the stage for clearly defining a new term for many participants. Many experts felt that the terminology used in the survey was unfamiliar to the world of online learning. They believed they apply these principles in an online learning environment but would never use such a "clinical" term with peers or students. Expert participants also explained that constructivism can be seen through many lenses based on the background of the individual. One individual could see constructivism from a social perspective while another participant would apply constructivism based on a learner's ability to construct knowledge (Palincsar, 1998). There are many types of constructivism, such as, cognitive, radical, and social (Sener, 1997). Each of these views shares a common theme: learners construct knowledge by actively participating in the learning process, seeking to find meaning in their experiences; as a result, knowledge is shaped, not dictated by an instructor. This view through various lenses, based on interpretation and perspective, can cause differences in application when applied in an online learning environment.

Interchangeability of Roles

Most expert participants believed that an online instructor performs a variety of roles in a constructivist setting. One expert stated, “Similar to the ‘many hats’ approach in brick and mortar teaching, it is difficult to see oneself as only a consultant, coach, designer, or collaborator. I am all four.” The expert panel perceived that the performance descriptors should be seen on a continuum from pedagogy to constructivist. This was quite evident when the experts were asked to perform a task-matching exercise using both pedagogy and constructivist competencies. In our reference to these performance statements, most expert participants saw themselves as equally competent in the pedagogy and constructivist competencies. It was important to remember the variety of roles an online instructor takes on in a constructivist setting; what we call them varies based on an instructor’s background, experience, and exposure to constructivist principles. One expert noted that this approach to role variation was insightful in the evolution of their role as an online instructor.

Constructivism Applied in Online Learning

It was clearly evident that the illustrations and examples used to portray what an online instructor *does* vs. *the role* of an online instructor was challenging for an expert participant. This expert participant stated that he or she would never use this term (constructivist) to describe what an online instructor does in an online learning environment. This constructivist view is based on the learner being an active processor of information, not passive as denoted in a behaviorist approach (Rovai, 2003). A current view of constructivism that is learner focused seeks to build the realities of a learner through a social process of communication, and construction of new paradigms through negotiation (Jonassen, 2004). This separation of role identification and how we define what an instructor does is a new concept for several expert participants. Interpretation of this data leads researchers to believe that it is hard to separate the behaviors (competencies) of an online instructor from the qualities needed to construct a quality learning environment populated by self-directed learners. This explains how what instructors do and the way they apply these competencies (behaviors) can vary given the online learning environment and behavioral aspects of a learner.

Feedback on Survey Construct

A separate feedback form was created to obtain feedback from experts on the construct and usage of online survey. The experts recommended that the constructivist terminology and definitions be provided early in the survey. The experts perceived that the constructivist terminology might not be familiar to online instructors providing these definitions within the survey would ensure a common language was understood prior to taking the survey. Second, experts provided feedback that performance statements #4 (Ability to maintain engaging class discussions) and #22 (Ability to promote a social and engaging online learning environment using online chat feature) were familiar pedagogy competency statements and didn't align with the constructivist roles. These two performance statements were eliminated from the initial survey. The experts also recognized that the identified competencies were important but wanted to validate how often they were used in an online course. This feedback validated that frequency of use for each competency statement needed to be added to the initial survey construct and supported research question focused on frequency of use.

CHAPTER 5
DISCUSSION AND CONCLUSION

The purpose of this study is to identify the constructivist competency framework for an online instructor, leading to improved existing performance systems that support the competencies of an online instructor. This chapter will discuss and conclude topics for further research in the field of online learning. This study examined the following research questions:

1. What are the roles and constructivist competencies of an online instructor?
   a. How frequently are these competencies used by an online instructor in an online course?
   b. How important are these competencies for an online instructor in producing a quality online course?
   c. Are there perceived differences in importance and frequently used competencies based on field of study, sector, educational level, and years of experience?

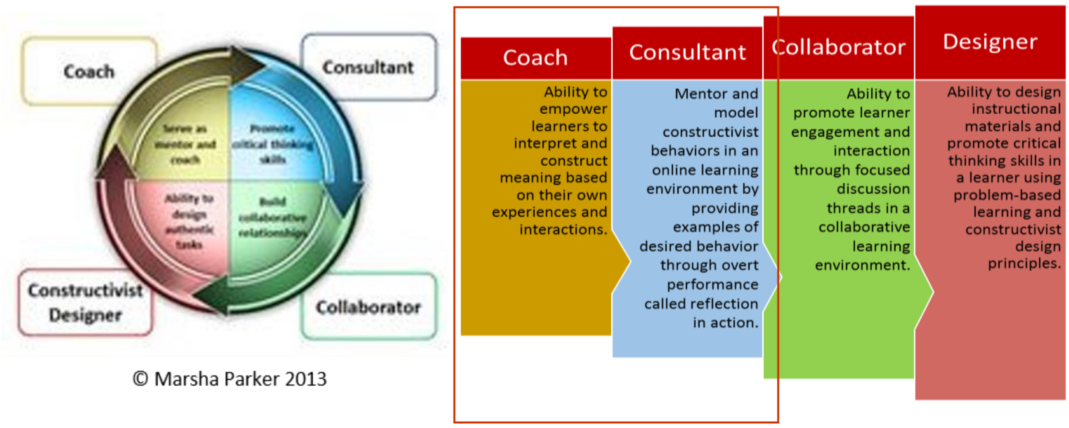
INTRODUCTION

The purpose of this final chapter is to provide a discussion on the findings of this mixed methods research study. This chapter is organized into the following sections: a) Expert and Practitioner Competency Model, b) Expert and Practitioner Perception of Role and Competencies, c) Contributions to Field of Performance Improvement, d) Limitations of Study, and e) Recommendations for Future Research.

Constructivist Competency Model

As a result of this study, a competency model was developed that identified the constructivist competencies for an online instructor. This competency model will be used to develop a certification plan for online instructors. This competency model will guide practitioners in developing the core behaviors required for facilitating a quality online course. The enhanced constructivist model will combine the roles of Coach and Consultant and revised competencies associated with these roles. The enhanced model will focus on the primary roles of Collaborator and Designer in constructing and utilizing the competencies identified in this study. In a Collaborator role the competency model will focus on the following behaviors:

Figure 29. Constructivist Competency Model



Experts' Perception of Online Instructor Role

This research studies examined the roles and competencies required of online instructors. Expert panel members were given a definition of the various roles of a constructivist online instructor. Panel members were asked to identify their role as a Constructivist Consultant, Cognitive Coach, Constructivist Designer, or a Collaborator. They could select more than one role. The role results were as follows:

- 80% identified themselves as a Constructivist Designer
- 80% identified themselves as a Collaborator
- 50% identified themselves as a Constructivist Consultant
- 50% identified themselves as a Cognitive Coach

It is perceived that in their role as a Constructivist Designer and Collaborator, the experts reinforced their skills by focusing on building a collaborative and socially engaging learning environment using focused discussion threads. They also utilized design principles when developing case studies, scenarios, and problem-based activities to empower learners to construct meaning based on course content and their own mental constructs. This dual role allows an online instructor to collaborate and design activities that ensure that learners will develop their knowledge and skills in an online learning environment.

Practitioners' Perception of Online Instructor Role

Practitioner participants identified their primary roles as Cognitive Coach (63.2%), Collaborator (61.3%), Constructivist Designer (52.8%), and Consultant (36.8%) in response to this question based on the definitions provided in the survey. The majority of the respondents mentioned that they see these roles as interchangeable for an online instructor. A factorial analysis validated that the role of an online instructor varied based on perceived importance vs. frequency of use (application of competencies). In their role as a Collaborator, the online instructors perceived (as important and frequently used associated competencies) that they promote learner engagement through focused discussion threads. As the world of online learning evolves and the technology platform shifts for an online instructor, the frequency of discussion threads will change. This will cause a shift in how online instructors apply the competencies as a Collaborator. This is also true in their role as a Constructivist Designer. The approach to how instructional material are designed and developed will “stretch” the skills of an online instructor. Practitioners recognized that as a Constructivist Designer, they will need to design materials that promote critical thinking skills using a problem-based approach. This problem-based approach was a central theme in this role. Participants recognized that using a problem-based approach to learning is core to reinforcing application of concepts to real-world scenarios. Third, the roles of Cognitive Coach and Consultant were linked according to the practitioners of this study. The competencies identified for both of these roles clearly overlapped and illustrated how important coaching is to a student in an online learning environment. This coaching was presented from a view of developing students’ cognitive structure to coaching students on the best practices while constructing their knowledge in a constructivist environment. Participants realized that coaching and mentoring competencies are meant to empower learners based on their own experiences. During the factorial analysis, practitioners perceived that the Collaborator role is important in an online learning environment. The role of a Collaborator was rated higher by participants as important to the development of an online instructor’s skills. In their role as Collaborator, online instructors believed that creating “rich” discussion threads that engage student participation is important. Second, the role of Constructivist Designer was ranked higher in the factorial analysis than the role of Cognitive Coach or Consultant. In this role as a Constructivist Designer, an online instructor has the ability to design and develop instructional materials that build and construct the knowledge of a learner using supporting collaborative tools. In this role, an online instructor has the ability to structure a course that will fit the needs of the learner given the vast number of collaborative tools available in the online learning platform.

Contributions to the Field of Performance Improvement

Performance improvement takes a systems view of how we manage the interdependencies of human performance. These systems evolve and enable individuals to perform at their peak performance, given the right tools, resources, and organizational support. In this study, we examined the role of a constructivist online instructor and associated competencies. The proposed competency model developed as a result of this study would ensure that instructors are given the right tools and resources to perform at an optimal level. The proposed competency model would also give instructors and organizations the ability to develop a baseline for an internal certification program. This certification program would allow organizations to establish standards for how they reward, recognize, hire, train, and promote online instructors. This competency model would build a platform for a pay-for-performance system within higher education. Online instructors would have opportunities for career development, promotion, and recognition in the field of online learning.

New Mental Model for Online Instructors

This study was intended to also give online instructors the opportunity to transform their mental models on how to design and deliver an online course. Traditional methods of converting PowerPoint slides and materials used in a classroom to an online environment won't work without an understanding of the fundamental concepts presented in this study. The concepts presented on role identification and core competencies will provide online instructors with insight into how to make this transition as smooth as possible. This transformation can occur only if an online instructor can adapt and make the necessary changes in behavior to fit an online environment.

Constructivist Design Principles and Role of Performance Consultant

The field of online learning is evolving for most institutions. New processes, practices, and principles are needed to support the development of the required resources for the field of online learning. A constructivist approach has been influential in how we design a robust classroom environment. It has not yet been proven whether these same constructivist design principles can be applied to an online environment. Richey et al. (2011) identified constructivist design principles as follows: (a) learning results from personal interpretation of an experience; (b) learning is an active process that occurs in realistic and relevant situations; and (c) learning results from exploration of multiple perspectives. Can we apply these same constructivist design principles to the role of a Constructivist Designer? The learning that occurs in an online learning environment is beneficial to how we design and construct a Web-based course and electronic enhancement performance tools. Such learning can also facilitate the conversation between performance consultants, instructional designers, and online instructors. The exploration of these multiple perspectives gives us insight into how performance consultants can influence a constructivist environment using constructivist design principles. This collaboration will eventually occur as the field of online learning grows and evolves into the preferred learning model.

THREATS AND LIMITATIONS

Limitations prior to study

The purpose of this study is to identify the constructivist competencies for an online instructor, leading to improving the online learning experience for a student and the performance systems that support the competencies of an online instructor. Typically, these performance systems are managed by academic administrators who determine the hiring, training, evaluating, and assessing of online instructors. A second purpose is to understand the perception of these competencies based on the role of an online instructor. A possible threat to this study is a small sample, resulting in a low response rate. One way to mitigate this threat is to examine the total population of participants and request a list of active members. The study participants are drawn from the International Association for K–12 Online Learning (iNACOL) nonprofit organization that facilitates collaboration, advocacy, and research to enhance quality K–12 online teaching and learning. This institution represents a diverse cross section of K–12 education from school districts, charter schools, state education agencies, charter schools, research institutions, corporate entities, and other technology providers (Patrick, 2008). As a part of the sampling strategy, participants will be randomly selected from an active membership list. Another approach to mitigating this potential threat is to follow up with non-responders with a corresponding phone call to gain clarity on reasons for not responding to the survey. The last mitigation approach is to target a select group of online instructors for this research (consultants and experts) and a larger population of online instructors in Stage 5. This targeted phased approach would enable the researcher to define specific criteria for a sample population and narrow the focus to anticipate a higher response rate. In Stage 3 of the study, researchers will use surveys, and in Stage 5 electronic questionnaires. Because the researcher is using a questionnaire in Stage 5 of the study, an oversampling of target audience is required. In traditional educational and social research studies, most data collection methods such as surveys are used to capture a high response rate (Kotrlik, et al., 2001). Salkind (1997) recommended oversampling when sending out questionnaires and surveys and stated that an increase in sample size should approximate between 40% and 50% to account for lost surveys/questionnaires and uncooperative participants. The researcher will estimate the response rate for this study using Cochran's (1997) formula for sample size determination. See Methodology (Chapter 3) for details of sample size. Additional limitations include the perceptions and background of the online instructor in an online constructivist learning environment. These perceptions are foundational to the outcomes defined in this study. Online instructors are faced with so many influences that impact their ability to provide a successful learning environment for a learner. Swan (2003) has defined a successful online learning environment as one in which the instructor has provided a clear course structure that supports engaged participants in dynamic discussions. Factors that influence this successful environment include the pool of learner(s) assigned to a particular online course. The learners come to the learning environment with their own online learning experiences, beliefs, motivations, capabilities, and perceived abilities to comprehend and master the course material. These environmental factors can influence instructors' desire, motivation, and ability to create that "perfect" class experience, thus impacting their perceptions of their ability to produce a competent learner, not only in a traditional pedagogy environment but also in a less structured constructivist environment. These perceptions are internalized and become a part of an instructor's DNA for facilitating an online course. A potential threat to this study is an instructor's ability to properly identify and categorize these perceptions based on a constructivist learning environment. Thus, this study will use a relative sample of the larger population during Stage 3 of the study to generalize the perceptions of online instructors. This smaller sample will reflect the larger population by incorporating participants from a diverse cross section of K–12 education from school districts, charter schools, state education agencies, charter schools, research institutions, corporate entities, and other technology providers. This approach will allow researcher to make generalizations about the larger population based on a smaller representation of online instructors. The (analytic) generalizability of qualitative studies is usually based not on explicit sampling to which results can be extended but on the development of a theory that can be extended to other cases (Ragin, 1987). Generalization will allow the researcher to capture similarities and differences between perceptions of online instructors based on variables defined for this study. Perceptions will be explored because few instructors may realize that they are operating within a constructivist environment and may unintentionally misclassify their perceptions. To avoid this pitfall, the researcher will provide a clear example of a constructivist learning environment along with relevant definitions to participants. Strategies will also be used in the selection of participants to ensure high response rates in Stage 3 by providing clear instructions in an online questionnaire and follow-up response for non-respondents. For example, a reminder notice will be sent to late or non-responders to ensure higher response. The threats and limitations identified in this study will be mitigated to avoid any type of bias in the data collection and interpretation of study results. Controlling these factors will ensure a study that is representative of the target audience (online instructors) and will provide valid and conclusive results.

Limitations addressed from study

During this study a Competency Model Development was used to collect and analyze data. Survey Monkey was the online tool used to capture the results of the participant's responses. During the data collection process the researcher wants to acknowledge that 106 surveys were collected from online instructors during the practitioner study. It is also noted that 23 surveys were discarded due to incompletion of responses. This be could a result of a) participant's inability to relate to constructivist role, as defined in study, b) time commitment to complete survey c) self-selection process used to recruit participants d) open invitation time limitation was established at 30 days for participants. The majority of incomplete surveys were noticed by researcher during the later part of the survey.

Table 80. Survey Limitation- Incomplete Surveys

Stage	Competency Model Development Stages	# of participant	Time Required for each phase
1	Collect data and analyze via literature		6-8 months
2	Extract competencies & create proposed competency model based on literature		2 months
3	Validate content of proposed competency model with experts	10 Surveys Completed	5 weeks
4	Modify model based on expert feedback		2 weeks
5	Validate competency model with practitioners	106 Surveys Completed 23 Discarded as Incomplete	16 weeks

RECOMMENDATIONS FOR FURTHER RESEARCH

In this study, we examined the role and competencies for an online instructor, utilizing the iNACOL membership base as the intended population sample for study. This membership base has a total of 25–30 schools that partner with iNACOL to develop quality standards for online instructors. iNACOL participants were recruited and solicited via a proposal process to each individual school. This process required an extensive selection process by each individual iNACOL partner school. Due to the size limitation of the individual schools, additional participants had to be solicited from other sources such as LinkedIn. In replication of the present study, the researcher would recommend a different sampling approach for future studies. Researcher would also recommend obtaining the iNACOL membership list to support research development. This membership list would identify the contact information for each supporting online school along with direct membership information. This would assist the researcher in expanding the population size for future research studies. Researcher would also recommend extending the intended population to online universities that support research efforts through IBSTPI. This extended scope would support IBSTPI efforts to develop a competency model for online instructors while obtaining relevant data to develop a comprehensive competency model for online instructors.

Topics for Future Research

As we conclude the results of our study, we must examine the recommendations that proceeded from the practitioners for further consideration and research. These recommendations included constant examination of the evolving role of an online instructor, certification standards for online instructors, how we define a quality online learning environment, assessment tools for measuring competency of an online instructor, and dimensional role of an online instructor.

Role Evolution of an Online Instructor

In this study we examined the competencies of an online instructor to determine how they affect their ability as a Consultant, Collaborator, Designer, and Coach to produce a quality online learning experience for a learner. The role of an online instructor is constantly changing and evolving based on the multiple “hats” required to become proficient in the usage of collaborative tools, engage learners in the learning process, manage administrative tasks, design and develop content, construct material that is engaging, and understand the needs of each learner in an online learning environment. As the world of online learning constantly changes, so must the role of the online instructor. Previous studies have identified the role of an online instructor as a technologist, evaluator, administrator, advisor/counselor, and researcher (Spector, 2009). Williams (2003) described this role as trainer, instructional designer, change agent, graphic designer, technician, and media publisher. Berge (2008) described the role of online instructor from a functional perspective as social, managerial, pedagogical, and technical in nature. The dimensions of the roles discussed in this study focused on the instructor as a coach, mentor, collaborator, designer, and consultant. In the future, we must constantly challenge the labels that we use to define the role of an online instructor. This research indicates that the role of an online instructor is multidimensional and may not fit into a one-, two-, three-, or four-category schema. We may eventually see the many dimensions of an online instructor as inclusive of many roles. How we define or label the role of an instructor will constantly evolve as we learn more about the qualities required for a competent online instructor. Preferences regarding instructor roles and competencies may vary with respect to time and advancements made in technology (Klein et al., 2004). As we develop the certification standards and practices for an online instructor, we must consider the dimensional role of an online instructor and make adjustments in how we hire, retain, reward, and evaluate for this position.

Certification Standards for Online Instructors

As the world of online learning evolves into the preferred model for educating a learner of the 21st century, we must examine the standards for practices in this learning environment. Future study is needed on the certification standards and best practices to ensure consistency in all MOOC markets. (i.e., Coursea, Udacity, edX, and Khan Academy). These quality standards will ensure that all online communities are implementing consistent standards for using collaborative tools, designing course materials, measuring success, and developing the core competencies of an online instructor. Without a consistent set of standards, the online community will never gain the trust and confidence of its community of learners, shareholders, and organizations.

Identification of Core Competencies

Along with a define set of certification standards, we will need to ensure that a set of core competencies is developed for an online instructor. Collectively, the online governing body (i.e., iNACOL) needs to ensure that a core set of behaviors is identified and adhered to for how we hire, train, evaluate, and develop the core skills of an online instructor. This core set of behaviors will ensure that ongoing professional development is available for online instructors. This competency model will provide a standard for acceptable behaviors of an online instructor as well as a baseline for how we evaluate and reward online instructors given the many competing priorities required in an online learning environment. These competencies would also enable an organization to prioritize competency development and focus on successful mentoring and development of an online instructor. Similar, as in business and industry, it would provide an approach for terminating instructors who are not performing at the required level of performance. This required level of performance must be defined and published to avoid the future blame game of who is responsible for learners not acquiring the proper skills and knowledge to function in their field based on completion of course requirements from an online university.

Constructivist Link to a Quality Learning Environment

In our study, the online instructor functions as a facilitator of knowledge construction using various instructional strategies, collaborative tools, and reflective discussion. Constructivism is rooted in the practice of individuals constructing their knowledge based on realities, experiences, interactions with others, and maturity levels (Rovai, 2003). This current view of constructivism is focused on a learner developing these realities through the social process of communication and construction of new paradigms through social negotiation. The instructor cultivates this environment by designing and developing activities, exercises, and discussion threads that allow a learner to reflect and interact in a manner to construct “new” knowledge. This logical thought process indicates that the facilitator (instructor) is responsible for cultivating a quality online environment by being a guide on the side, not the primary facilitator of knowledge (Coppola, 1997). The role has changed for an online instructor given the demands and challenges of cultivating and retaining students in an online environment. An online instructor role is now multidimensional and evolving as the instructor manages complexities as a mentor, coach, designer, and consultant. Additional research is needed on the cause and effect of using constructivist principles in an online environment. The question that needs to be addressed will focus on the use of constructivist principles by an instructor and the impact this has on producing a quality learning environment. The degree to which these constructivist principles are applied will vary from course to course and learner to learner. How do we measure this impact on the learner and—more importantly—the instructor? Does application of these constructivist principles produce a better class experience for the learner and eventually a robust online experience? Learners are comparing the rich interaction dynamics created in a classroom setting to that of an online learning environment. Further research will ensure that learners encounter these dynamics in an online learning environment that they have encountered in a traditional classroom setting.

Global Application of Competency Model

The intended audience of online instructors for this research study was based within the United States. Future study is needed on how competencies identified in this study would apply to universities or institutions outside the boundaries of the United States. It would be interesting to identify whether the same competency model developed as a result of this study would apply to international online instructors. Given the dynamics of the online platform, changing role of an online instructor, and evolving technology advancements, it would be interesting to research how the constructivist competencies from this research would apply for instructors facilitating in an international online platform where the instructor may encounter challenges similar to those of their counterparts in the United States. Such challenges include lack of clearly defined standards for hiring, training, and evaluating performance; limited opportunity for promotion or advancement in the field of online learning; language and translation challenges of course materials; and ability to create a stimulating, engaging online learning environment.

SIGNIFICANCE OF STUDY IN THE FIELD OF ONLINE LEARNING

Development of a bridge competency model

As the field of online learning evolves into a preferred model for educating our society in the 21st century a common standard is needed for how we measure success. This researcher focused on one aspect of an effective online course by defining the constructivist competencies for an instructor. Constructivist principles are not new to the field of learning but are new in how they can be applied in an online learning environment. The constructivism approach seeks to actively engage learners in meaningful projects and activities that promote exploration, experimentation, construction, collaboration, and reflection of what learners are studying (Johnson & Johnson, 1994). Jonassen (1999), originally designed a model that illustrates the components required for a successful constructivist learning environment. Varvel (2001), Williams (2003), Salmon (2004), Darabi et al (2006), Smith & Berge (2009), Bawane & Spector (2009), and Guascha et al (2009b), provided the pedagogical foundation for how we approach competencies for an online instructor. The significance of this study will impact how researchers further develop competency models that bridge the pedagogy approach (lecture based discussion with limited student interaction) to constructivist approach (learner focused environment where the facilitator is a guide on the side) as suggested by Coppola, 1997, Jonassen, 1999 & Baran, 2011. As the field of online learning evolves and requires a skilled facilitator, researchers will need to provide this depth of research for how we bridge these evolving competency models. In the literature review for this study very limited research exists on how we apply constructivist principles in an online learning environment, until now. This study will give future researchers the ability to further explore how we define and apply the spectrum of constructivist principles. This study would enable researchers to take a different view of how constructivist principles are applied in any type of learning environment (i.e. traditional classroom, online asynchronous, online synchronous, hybrid). This will have an impact on how an instructor can mold and shape a new generation of learners. This will also cause learners to explore new methods for applying and shaping their cognitive structure.

As researchers, we must explore alternative approaches to the field of learning and shape our destiny as a group of innovators; even if it means applying principles in a different manner than originally intended. This innovative approach to learning will cause a shift in how: a) knowledge is measured, comprehended and applied for a learner, b) a new body of principles and models are applied and c) partnerships are formed across disciplines that wouldn’t otherwise exist.

Elements of a quality online course

These new innovative models to learning include competency models that shift how we measure and evaluate the standards for a quality learning environment. This study focused on the role and constructivist competencies for online instructors. Further research is needed on the other factors that influence the delivery of a quality online course. The researcher original intent was to explore the qualities of a successful online course. As the study progressed it was evident that in order to have a quality online course it starts with a competent facilitator who is skilled, trained, developed and coached in facilitating an online course. This led to understanding the skills and behaviors of an online instructor. As the literature was examined it was clear that the roles and competencies identified were from a pedagogical theoretical base. In exploring other theoretical perspectives it was clear that constructivist principles could be applied in an online learning environment. This lead to the development of a constructivist competency model for online instructors that was validated by a group of ten experts and 106 practitioners. In order to understand the linkage between this competency model and application in an online course another research study is needed that explores the linkage and impact between constructivist competencies and a quality online course. This study would enable the field of online learning to focus less on the technology and more on the role of an online instructor as a catalyst for change. This shift in approach to exploring the components of a quality online learning environment is needed to meet the needs of a learner and empower an online instructor with the right tools and resources. The significance of this future research will also give online instructors the ability to understand the right combination of tools, resources, and skills to create that “perfect” online learning environment similar to the art and science that lead to a balanced traditional classroom environment. At the present time understanding the right combination is tested through trial and error. No clear formula exists for how we define or measure a quality online course. The best educated guess is through non-standard performance reviews, customer satisfaction scores and retention data captured in an inconsistent manner. As innovators in the field of online learning the next level of research needs to focus on how we achieve this quality learning environment while still managing supporting factors; such as, accreditation and regulatory requirements, faculty and student retention rates, competitive costs, and relevant curriculum that address skill gaps.

RECOMMENDATIONS FOR ONLINE INSTRUCTORS

As an online instructor it's critical that practitioners in the field of online learning stay current and relevant in their skills. The researcher of this study recommends that online instructors (practitioners); a) assess their current skills and behaviors b) develop proficiency in one or more roles through a concise action plan c) focus on improving in a role and build core competencies and d) collaborate with peers on how to apply constructivist design principles in an online course. In any field it imperative that an individual maintains their core skills and behaviors in order to remain relevant and current in their discipline. This practice on continuously improving critical skills and behaviors gives an online instructor the ability to apply and practice new concepts while maintaining a sense of consistency in approach while instructing an online course. An instructor must conduct a regular assessment of their skills and behaviors in order to address any deficiencies or gaps. Due to the evolution of technology and constant changes in the field of online learning an online instructor has to learn to take control of their own career development and plan for incremental assessments. This assessment will allow an online instructor to identify their primary constructivist role and develop an action plan for becoming highly proficient as a Collaborator, Constructivist Designer, or a Cognitive Coach. This action plan will enable an online instructor to focus on improving in one or more roles while developing their core competencies associated with each role. In this study, most practitioners were highly proficient as a Collaborator but need to focus on developing their designer and cognitive skills as an online instructor. An approach that an online instructor can take to improving their design skills is to collaborate with peers in applying constructivist design principles mentioned in this study. These design principles can be applied in a practical manner without disrupting the flow of an online course by conducting mini pilot sessions with other online instructors. This approach would allow an online instructor to design an exercise or activity and determine what the possibilities are in applying them to their online course. This feedback is used to improve their skills and build their confidence in applying constructivist design principles to an online course. This planned activity could also be used to update their action plan towards improving their role as a designer and developing their core competencies. A similar approach could be applied to an online instructor developing their skills as a Cognitive Coach.

RECOMMENDATIONS FOR ADMINSTRATORS

Online instructors are very dependent on university administrators to provide the resources, coaching, mentoring and training to ensure they're capable and effective in their role beyond initial orientation training. This on-going support is important to retention of quality online instructors. As mentioned in this study, practitioners perceived that any formal coaching and mentoring was limited in supporting them as they matured in their role as an online instructor. This on-going coaching and mentoring is needed in order for an instructor to become proficient as a Collaborator, Constructivist Designer, and Cognitive Coach, as well as, apply constructivist principles to an online course. Online administrators can improve career development opportunities by partnering with IBSTPI and iNACOL to improve standards and quality of training for online instructors. This partnership and collaboration should focus on developing certification standards, offering online hubs for peer coaching and mentoring, and determining a common set of core competencies for an online instructor. A consistent set of standards would ensure that all online courses are designed and delivered with the highest level of quality. These standards would allow institutions to evaluate, hire and train instructors based on a global set of standards. This current lack of certification standards has an impact on the profitability of an institution. If an institution fails to establish a core set of standards their customers (a learner) will search for better online learning environment at the most economical costs. Online administrators can ensure that profitability improves by focusing on developing the core skills of an instructor by offering on-going coaching and mentoring based on a common competency model.

Conclusion

In this section, the results of this study of the role and competencies for online instructors were discussed and explained based on study research questions. The major points of this section examined the experts and practitioners competency model, perception of role and competencies, and implications for field of performance improvement, online instructors and administrators. The limitations of this study were examined, along with future studies; to consider how they will affect the way we perceive the role of online instructors. This study will potentially support the development of the IBSTPI competency model for online instructors and assist iNACOL in updating its quality standards for an online instructor. This study will contribute to the field of research that will explore how organizations support the competency development of online instructors. Future research will also confirm and support the development of constructivist principles for an online instructor. This research will eventually provide the foundation for how we examine and evaluate the online learning environment, leading to improved and effective online experiences for a learner.

SYNTHESIS OF FINDINGS

The common constructivist theory is based on the premise that we don't find knowledge; we construct it (Boghossian, 2006). This view allows a facilitator to provide a learner with opportunities and incentives to build knowledge (Glasersfeld, 2005). These opportunities and incentives for a learner can take many forms. To learners, these opportunities are most evident in the quality of instruction they receive in an online learning environment. A missed opportunity for an instructor to deliver a quality online course can have serious consequences for the learner and institution. In this study, participants believed that their role in an online learning environment is critical to the learning process. Practitioners perceived that the Collaborator role is significant in an online learning environment when viewing the factorial analysis data. The role of Collaborator was ranked significantly higher by participants as important to the development of an online instructor. In their role as Collaborator, online instructors believed that creating rich discussion threads that engage student participation is important. These rich discussion threads should provide relevant and detailed examples along with opportunities to practice. Online instructors believed that discussion threads allow students to collaborate and share ideas with one another, but they also allow the instructor to measure the current level of understanding and suggest appropriate resources to enhance that understanding. It's not surprising that this role ranked significantly higher than that of a Cognitive Coach. The role of Collaborator is currently the primary focus of a majority of online learning platforms that are driven through focused discussion questions to engage a learner in the learning process. The associated frequently used competencies related to the role of Collaborator focused on promoting learner interaction, generating new ideas, creating a collaborative online environment, and maintaining an active social community.

Second, the role of Constructivist Designer was ranked higher in the factorial analysis than that of Cognitive Coach or Consultant. In this role as Constructivist Designer, an online instructor has the ability to design and develop instructional materials that build and construct the knowledge of a learner using supporting collaborative tools as well as to structure a course that will fit the needs of the learner given the vast number of collaborative tools available in the online learning platform. The development of these instructional materials will have a significant impact on how a learner comprehends and applies core concepts to the real world. This is why the incorporation of problem-based learning instructional strategies is important to constructing the knowledge of a learner. Participants perceived that the associated behavior related to their role as Constructivist Designer should focus on using problem-based strategies to design materials based on authentic tasks, incorporating worked examples and case studies and creating complex scenarios that challenge a learner in a reflective manner. These core behaviors would enable an online instructor to measure and understand learners' level of comprehension. As a Constructivist Designer, participants perceived that having the right tools and resources is critical to designing course materials along with proper training in this role. Several participants relied on internal instructional designers and curriculum coaches to provide suggestions for creating materials that engage a learner in the learning process while facilitating an online course. Third, the role of Cognitive Coach and Consultant were combined during the factor analysis. Participants perceived that the associated competencies with these roles overlapped given the definitions provided in the survey. In this study, the participants perceived that a Cognitive Coach has the ability to empower learners to interpret and construct meaning based on their own experiences and interactions, thus building new cognitive processes or mental models for a learner. These behaviors were identified as frequently used by a Cognitive Coach. Participants believed that building a learner's knowledge using scaffolding techniques would enable a learner to construct new knowledge and gain insight into a concept or topic. In their role as Cognitive Coach, the online instructors believed it was their responsibility to guide, not dictate the approach, to facilitate the transfer of knowledge and experiences. Online instructors saw themselves more as facilitators than as instructors. As a Cognitive Coach, online instructors felt the need to provide relevant examples of how to implement desired behaviors or new knowledge in a systematic or cognitive manner. Finally, the role of a Consultant was perceived as similar to the role of a Cognitive Coach. The Consultant role was intended to be a subject matter expert who provides mentoring and coaching services to supplement the instructional materials and discussion provided in an online course. The Consultant role was ranked significantly lower than the other constructivist roles. Participants perceived this role as redundant of the other constructivist role as a Cognitive Coach, identified in this study. The associated behaviors of demonstrating a task, articulating the reasoning for performing a task, providing worked examples, and analyzing a learner's performance are apparent in the role of Collaborator, Constructivist Designer, and Cognitive Coach.

APPENDIX A: IBSTPI COMPETENCY MODEL

IBSTPI Assumptions - Source: Klein, et al., 2004, pp.19-21.

Assumption #1: The goal of instruction is to facilitate learning and improve performance.

Assumption #2: Instructors are individuals responsible for activities intended to improve knowledge, skills and attitudes, regardless of their specific job title.

Assumption #3: Instructor competencies apply to a wide range of settings and instructional approaches.

Assumption #4: Factors such as instructional setting, organizational practice, and local culture influence the application of instructor competencies.

Assumption #5: Few individuals demonstrate all of the instructor competencies regardless of their level of expertise ad amount of education and training.

Assumption #6: Competent instructors are responsible for more than the delivery of information and content.

Assumption #7: Instructor competencies should be meaningful and useful worldwide.

IBSTPI Competency Model – Source: Klein, et al., 2004, pp.29-58.

Professional Foundation

Competency 1: Communicate effectively
- a) Use language appropriate to the audience, context and culture
- b) Use appropriate verbal and nonverbal language
- c) Seek and acknowledge diverse perspectives
- d) Use active listening skills according to context
- e) Use appropriate technology to communicate

Competency 2: Communicate effectively

- a) Expand one's knowledge of learning principles and instructional strategies
- b) Continuously update technology skills and knowledge
- c) Establish and maintain professional contacts
- d) Participated in professional development activities
- e) Document one's work as a foundation for future efforts

Competency 3: Comply with established ethical and legal standards

- a) Recognize the ethical and legal implications of instructional practices
- b) Comply with organizational and professional codes of ethics
- c) Ensure learners are treated fairly
- d) Respect requirements for confidentiality and anonymity

e) Avoid conflicts of interest
f) Respect intellectual property including copyright

Competency 4: Establish and maintain professional creditability

a) Model exemplary professional conduct
b) Respect the values and opinions of others
c) Demonstrate subject matter expertise
d) Be open to change and improvement
e) Relate instruction to organizational context and goals

Planning and Preparation

Competency 5: Plan instructional methods and materials

a) Determine relevant characteristics of learners, other participants, and instructional settings
b) Plan or modify instruction to accommodate learners, instructional settings, and presentation formats
c) Identify and sequence goals and objectives
d) Select appropriate instructional methods, strategies and presentation techniques
e) Plan or modify lessons, instructor notes, assessment tools, and supporting materials
f) Create or modify technology-based resources as required

Competency 6: Prepare for instruction

a) Anticipate and prepare for learner difficulties and questions
b) Prepare learners for instruction
c) Identify key points, relevant examples, anecdotes, and additional materials
d) Confirm logistical and physical arrangements that support instruction
e) Make instructional resources accessible for all learner
f) Confirm readiness of equipment, technology and tools

Instructional Methods and Strategies

Competency 7: Stimulate and sustain learner motivation and engagement
a) Gain and maintain learners attention
b) Ensure that goals and objectives are clear
c) Foster a favorable attitude toward learning
d) Establish a relevance to increase learner motivation
e) Help learners set realistic expectations
f) Provide opportunities for learners to participate and succeed

Competency 8: Demonstrate effective presentation skills
a) Adapt presentations to the learning context
b) Represent key ideas in a variety of ways
c) Provide examples to clarify meaning
d) Involve learners in presentations
e) Adapt presentations to learner needs

Competency 9: Demonstrate effective facilitation skills
a) Draw upon the knowledge and experience of all participants
b) Give directions that are clearly understood by all learners
c) Keep learning activities focused
d) Encourage and support collaboration
e) Bring learning activities to closure
f) Monitor, access, and adapt to the dynamics of the situation

***Competency 10: Demonstrate effective questioning skills**
a) Ask clear and relevant questions
b) Follow-up on questions from learner
c) Use a variety of question types and levels
d) Direct and re-direct questions that promote learning
e) Use questions to generate and guide discussions
f) Build on responses to previous questions in subsequent learning activities

***Competency 11**: Provide clarification and feedback
a) Provide opportunities for learners to request clarification
b) Use a variety of clarification and feedback strategies
c) Provide clear, timely, relevant and specific feedback
d) Be open and fair when giving and receiving feedback
e) Provide opportunities for learners to give feedback
f) Help learners in giving and receiving feedback

***Competency 12**: Promote retention of knowledge and skills
a) Link learning activities to prior knowledge
b) Encourage learners to elaborate concepts and ideas
c) Provide opportunities to synthesize and integrate new knowledge
d) Provide opportunities to practice newly acquired skills
e) Provide opportunities for reflection and review

***Competency 13**: Promote transfer of knowledge and skills
a) Use examples and activities relevant to application settings
b) Demonstrate the application of knowledge and skills in realistic settings
c) Provide opportunities to practice in realistic settings
d) Provide opportunities to plan for future application
e) Provide opportunities for autonomous learning

Competency 14: Use media and technology to enhance learning and performance
a) Recognize the capabilities and limitations of media and technology for instruction
b) Apply best practices when sing media and technology
c) Represent content in a variety of ways
d) Prepare learners for the use of media and technology
e) Troubleshoot or fix minor technical problems

Competency 15: Access learning and performance
a) Communicate assessment criteria
b) Monitor individual and group performance
c) Assess learner attitudes and reactions
d) Assess learning outcomes
e) Provide learners with opportunities for self-assessment

Competency 16: Evaluate instructional effectiveness
a) Evaluate instructional materials
b) Evaluate instructional methods and learning activities
c) Evaluate instructor performance
d) Evaluate the impact of the instructional setting and equipment
e) Document and report evaluation data

Management

Competency 17: Manage an environment that fosters learning and performance
a) Anticipate and address situations that may impact learning and performance
b) Ensure that learners can access resources
c) Establish ground rules and expectations with learners
d) Employ time management principles during instruction
e) Discourage undesirable behaviors in a timely and appropriate manner
f) Resolve conflicts and problems quickly and fairly

Competency 18: Manage the instructional process through the appropriate use of technology
a) Use technology to support administrative functions
b) Use technology to seek and share information
c) Use technology to store and reuse instructional resources
d) Use technology to maintain the security and privacy of learner information

APPENDIX B: EXPERT'S SURVEY

Online Instructor's Expert Survey

Exit this survey

This worksheet will provide you with the details about this research study and contact information.

Title of Study: Role and constructivist competencies for an online instructor

Principal Investigator (PI): Marsha L. Parker
Wayne State University, Instructional Technology
248-910-9938
email: instructor.competencies@hotmail.com

Purpose:

You are being asked to be in a research study of online instructors because of your background and experience as an online instructor. This study is being conducted at Wayne State University. The estimated number of study participants from iNACOL (International Association for K-12 online teaching and learning) is 400 practitioners as well as 10 experts throughout the United States. Please read this form and ask any questions you may have before agreeing to participate in this study.

In this research study, online instructors will assist in identifying the constructivist role and core competencies for an instructor who facilitates an online course.

Study Procedures:

If you agree to take part in this research study, you will be asked to complete an online survey that provide a list of competencies (behaviors) expected of an online instructor who facilitates, mentors and guides a learner through the learning process. This learning process is focused on creating an engaging, introspective, and participatory learning environment where the learner is accountable for constructing their own knowledge through focused discussion threads, problem-solving scenarios, and reflective learning tools. The instructor is responsible for creating a learning environment that facilitates the development of knowledge and construction of new mental models.

1A. Ten (10) expert participants will be asked to validate content of proposed survey that identifies the constructivist competencies by completing a mini-survey. This mini-survey will allow participants to match constructivist competencies with defined categories. This validation process will ensure that the terminology and descriptors used in proposed model and practitioner survey accurately describe competencies, and performance descriptors. Content validation of survey will involve experts who instruct online courses and are defined as leaders in the field of online learning. Expert will be given a task matching exercise that describes the competencies and associated skills via an electronic survey. Experts will be asked to complete a feedback form that will be used to provide feedback on the survey and competency model along with performance descriptors.

1B. Four hundred (400) practitioners will be asked to validate competency model via an online survey using Survey Monkey. A summary of study and description of responsibilities of participants will be posted on iNACOL's membership website along with a link to survey. Survey will include a consent form, instructions, description of study and competency model.

2. Expert and practitioner surveys will take approximately one-hour to complete. Participants can complete survey at their own progress. Survey tool will allow students to bookmark their progress as they complete the survey.

3. Practitioner participants will be asked to complete ten demographical questions in section one of survey. In section two, participants will be asked to complete a series of questions regarding the role and performance descriptions associated with an online instructor. Participants will be asked to complete a sections based on the frequency and importance of associated performance statements (descriptors). Participants will be given definitions associated with terminology used in survey. Participants will also be given instructions on how to complete survey and confidentiality of results.

4. Participant's identity will be protected using an anonymous coding system. Completed participant's survey will be locked in a file cabinet for three years.

Benefits: As a participant in this research study, there will be no direct benefit for you; however, information from this study may benefit other people now or in the future.

Risks: There are no known risks at this time to participation in this study.

Costs: There will be no costs to you for participation in this research study.

Compensation: You will not be paid for taking part in this study.

Confidentiality: All information collected about you during the course of this study will be kept without any identifiers.

Voluntary Participation /Withdrawal:
Taking part in this study is voluntary. You are free to not answer any questions or withdraw at any time. Your decision will not change any present or future relationships with Wayne State University or its affiliates.

Questions:

If you have any questions about this study now or in the future, you may contact Marsha Parker or one of her research team members at the following phone number 248-910-9938. If you have questions or concerns about your rights as a research participant, the Chair of the Institutional Review Board can be contacted at (313) 577-1628. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call (313) 577-1628 to ask questions or voice concerns or complaints.

Participation:
By completing the electronic survey you are agreeing to participate in this study.

Next

Online Instructor's Expert Survey

Exit this survey

The purpose of this study is to validate the constructivist competencies for an online instructor.

A proposed competency model has been developed based on Jonnassen's constructivist principles. The proposed competency model is comprised of a list of behaviors and skills associated with the tasks performed by a constructivist online instructor operating in their role as a collaborator, designer, consultant and coach.

Instructions: Please complete the following demographical information based on your role as an online instructor.

***1. Please identify the number of years you have experience teaching in an online learning environment?**

- 1 year
- 2 years
- 3 years
- 4 years
- 5 years or more

***2. Please identify the number of professional certifications and awards received within the last five years related to your experience as an online instructor.**

- 0
- 1
- 2
- 3
- 4
- 5 or more

Other (please specify)

***3. Please identify the type of training programs you have completed since becoming an online instructor?**

- Annual Professional Development Workshops
- Certification Program
- Local campus faculty development workshops
- Online Mentoring Session
- Professional Development Workshops
- Webinar in Online Learning

Other (please specify)

***4. Please list any publications or research conducted in the field of online learning within the last five years? Please provide name of publication in response.**

***5. Please identify any online consulting experience within the last five years? Consulting experience includes opportunities to coach and mentor other online instructors.**

***6. Please list your field of study. You can select more than one answer for this question.**

- Communications
- English
- Language Arts
- Math
- Technology
- Other
- Other (please specify)

***7. Please identify the highest educational level you have achieved:**

- Associate degree
- Bachelor degree
- Master degree
- Doctoral degree
- Other

Other (please specify)

***8. Please identify your sector or college that you currently work in within your university. You can select more than one answer for this question.**

- [ ] College of Education
- [ ] College of Humanities
- [ ] College of Information Technology
- [ ] College of Liberal Arts
- [ ] College of Social Work
- [ ] Other (please specify)

***9. Please identify your employment status as an online instructor.**

- Employed full-time, working 40 or more hours per week
- Employed part-time, working 1-39 hours per week
- Not employed, looking for work in online environment
- Not employed, NOT looking for work in online environment
- Retired

Other (please specify)

***10. Please identify the number of online courses you instruct (teach) within a one year timeframe?**

- 1
- 2
- 3
- 4
- 5
- 6
- 7 or more

Back Next

Online Instructor's Expert Survey Exit this survey

The purpose of this exercise is to determine if the competencies identified in research are relevant to the role of an online instructor in real life settings.

Instructions: Please read the following descriptions provided below on the multiple roles of a constructivist online instructor. These roles will be referenced in the following table associated with relevant performance descriptions. Please feel free to print a copy of these descriptions for future reference.

Role of an Online Instructor - Performance Descriptions

A constructivist consultant is an instructor who can mentor and model constructivist behaviors in an online learning environment by providing examples of desired behavior through overt performance called reflection in action.

A cognitive coach has the ability to empower learners to interpret and construct meaning based on their own experiences and interactions.

A constructivist designer has the ability to design instructional materials and promote critical thinking skills in a learner using well-structured or ill-structured problems.

As a collaborator an online instructor would promote learner engagement and interaction through focused discussion threads in a collaborative learning environment.

Reflect on your experiences as an online instructor and complete the following survey questions.

***11. Based on the definition of a constructivist online instructor provided in the instructions. How would you identify your role as a constructivist online instructor?(Check all that apply)**

- [ ] Constructivist Consultant
- [ ] Cognitive Coach
- [ ] Constructivist Designer
- [ ] Collaborator

***12. Explain why you identified your role as a constructivist consultant, cognitive coach, constructivist designer, and collaborator.**

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Online Instructor's Expert Survey Exit this survey

This section will validate the parameters (pedagogy & constructivist)for the proposed competency model. As an expert, you will be asked to select the corresponding performance description with the defined competency based on the constructivist role of an online instructor. Not Applicable is provided for any performance description that does not applicable to the identified competency and associated role. Select only one role for each descriptor.

***13. Competency Descriptors**

	Consultant Role	Cognitive Coach Role	Instructional Designer Role	Collaborator Role	Not Applicable
1. Select appropriate methods and instructional strategies	☐	☐	☐	☐	☐
2. Empower learners to interpret and construct meaning based on their own experiences	☐	☐	☐	☐	☐
3. Provide relevant examples and supporting materials	☐	☐	☐	☐	☐
4. Ability to facilitate and present information in an engaging manner	☐	☐	☐	☐	☐
5. Create technology based instructional materials	☐	☐	☐	☐	☐
6. Design instructional materials	☐	☐	☐	☐	☐
7. Promote critical thinking skills using problems or scenarios	☐	☐	☐	☐	☐
8. Coach learners in the usage of technology and collaborative tools	☐	☐	☐	☐	☐
9. Create and modify instructional materials	☐	☐	☐	☐	☐
10. Promote learner engagement and social interaction	☐	☐	☐	☐	☐
11. Encourage and motivate leaner in an online environment	☐	☐	☐	☐	☐
12. Facilitate and present information in an engaging manner	☐	☐	☐	☐	☐

Back Next

Online Instructor's Expert Survey Exit this survey

Instructions: Please identify the importance of each performance description for the competency role. A definition of the competency role is provided below:

A constructivist consultant is an instructor who can mentor and model constructivist behaviors in an online learning environment by providing examples of desired behavior through overt performance.

***14. Instructions: Please identify the importance of each performance description based on an online instructor's role as a constructivist consultant.**

	1-Not Important	2-Slightly Important	3-Somewhat Important	4-Important	5-Very Important
Ability to provide worked examples to solve complex problems by using cues and associations to promote decision-making and reasoning skills	☐	☐	☐	☐	☐

***15. Constructivist Consultant**

	1-Not Important	2-Slightly Important	3-Somewhat Important	4-Important	5-Very Important
Mentor learners in usage of collaborative tools (e.g. online chats, eBooks, electronic portfolios)	☐	☐	☐	☐	☐

***16. Constructivist Consultant**

	1-Not Important	2-Slightly Important	3-Somewhat Important	4-Important	5-Very Important
Consult with learner on alternative approaches to solve a problem or gain a different perspective on a topic	☐	☐	☐	☐	☐

***17. Constructivist Consultant**

	1-Not Important	2-Slightly Important	3-Somewhat Important	4-Important	5-Very Important
Ability to demonstrate a task and model performance through a focused activity or worked example	☐	☐	☐	☐	☐

***18. Constructivist Consultant**

	1-Not Important	2-Slightly Important	3-Somewhat Important	4-Important	5-Very Important
Ability to articulate the reasoning that learners should use when engaged in performing an activity, task or assessment	☐	☐	☐	☐	☐

Online Instructor's Expert Survey Exit this survey

Instructions: Please identify the importance of each performance description for the competency role. A definition of the competency role is provided below:

A cognitive coach has the ability to empower learners to interpret and construct meaning based on their own experiences and interactions.

***19. Instructions: Please identify the importance of each performance description based on an online instructor's role as a cognitive coach.**

	1- Not Important	2- Slightly Important	3- Somewhat Important	4- Important	5- Very Important
Empower learners to interpret and construct meaning based on their own experiences and class interactions	☐	☐	☐	☐	☐

***20. Cognitive Coach**

	1- Not Important	2- Slightly Important	3- Somewhat Important	4- Important	5- Very Important
Ability to motivate a learner in an online learning environment through use of relevant stories, practical worked examples and personal reflection	☐	☐	☐	☐	☐

***21. Cognitive Coach**

	1- Not Important	2- Slightly Important	3- Somewhat Important	4- Important	5- Very Important
Model higher order thinking by formulating questions to probe a learner's comprehension of core concepts	☐	☐	☐	☐	☐

***22. Cognitive Coach**

	1- Not Important	2- Slightly Important	3- Somewhat Important	4- Important	5- Very Important
Ability to guide learners by providing substantive feedback	☐	☐	☐	☐	☐

***23. Cognitive Coach**

	1- Not Important	2- Slightly Important	3- Somewhat Important	4- Important	5- Very Important
Ability to analyze a learner's performance using cognitive tools and formal assessments	☐	☐	☐	☐	☐

***24. Cognitive Coach**

	1- Not Important	2- Slightly Important	3- Somewhat Important	4- Important	5- Very Important
Ability to coach a learner using online chat feature	☐	☐	☐	☐	☐

Online Instructor's Expert Survey Exit this survey

Instructions: Please identify the importance of each performance description for the competency role. A definition of the competency role is provided below:

A constructivist designer has the ability to design instructional materials that promote critical thinking skills in a learner using well-structured or ill-structured problems.

***25. Instructions: Please identify the importance of each performance description based on an online instructor's role as a constructivist designer.**

	1- Not Important	2- Slightly Important	3- Somewhat Important	4- Important	5- Very Important
Ability to present a problem in a manner that allows the learner to build knowledge in a reflective and analytical manner	☐	☐	☐	☐	☐

***26. Constructivist Designer**

	1- Not Important	2- Slightly Important	3- Somewhat Important	4- Important	5- Very Important
Ability to design and create complex scenarios that allow students to make decisions and select alternative methods	☐	☐	☐	☐	☐

***27. Constructivist Designer**

	1- Not Important	2- Slightly Important	3- Somewhat Important	4- Important	5- Very Important
Ability to stimulate a learner by creating materials based on real authentic problems using collaborative tools, such as; podcasts, blogs, online chats, videos, online games, and simulations	☐	☐	☐	☐	☐

***28. Constructivist Designer**

	1- Not Important	2- Slightly Important	3- Somewhat Important	4- Important	5- Very Important
Ability to design instructional materials (e.g worked examples, case studies, virtual labs) that enable a learner to build knowledge in a reflective and analytical manner	☐	☐	☐	☐	☐

***29. Constructivist Designer**

	1- Not Important	2- Slightly Important	3- Somewhat Important	4- Important	5- Very Important
Ability to design instructional content that can be used to solve a problem or scenario	☐	☐	☐	☐	☐

***30. Constructivist Designer**

	1- Not Important	2- Slightly Important	3- Somewhat Important	4- Important	5- Very Important
Ability to adjust learning problems and scenarios based on difficulty and complexity of a learner's ability to comprehend situations	☐	☐	☐	☐	☐

Online Instructor's Expert Survey

Exit this survey

Instructions: Please identify the importance of each performance description for the competency role. A definition of the competency role is provided below:

As a collaborator an online instructor would promote learner engagement and interaction through focused discussion threads in a collaborative learning environment.

***31. Instructions: Please identify the importance of each performance description based on an online instructor's role as a collaborator.**

	1- Not Important	2- Slightly Important	3- Somewhat Important	4- Important	5- Very Important
Promote learner interaction through focused and engaging discussion threads using authentic tasks in a meaningful context rather than abstract instruction out of context	☐	☐	☐	☐	☐

***32. Collaborator**

	1- Not Important	2- Slightly Important	3- Somewhat Important	4- Important	5- Very Important
Generate new ideas that promote critical thinking and problem solving skills in a collaborative learning environment	☐	☐	☐	☐	☐

***33. Collaborator**

	1- Not Important	2- Slightly Important	3- Somewhat Important	4- Important	5- Very Important
Ability to create a collaborative online environment through the construction of knowledge and social negotiation	☐	☐	☐	☐	☐

***34. Collaborator**

	1- Not Important	2- Slightly Important	3- Somewhat Important	4- Important	5- Very Important
Ability to engage a group of learners in discussion of content that can be used to solve a problem or design a project or portfolio	☐	☐	☐	☐	☐

***35. Collaborator**

	1- Not Important	2- Slightly Important	3- Somewhat Important	4- Important	5- Very Important
Ability to promote a social and engaging online learning environment using online chat feature	☐	☐	☐	☐	☐

***36. Collaborator**

	1- Not Important	2- Slightly Important	3- Somewhat Important	4- Important	5- Very Important
Ability to design social communities that promote engagement and conversation of course participants (learners & instructor)	☐	☐	☐	☐	☐

***37. Collaborator**

	1- Not Important	2- Slightly Important	3- Somewhat Important	4- Important	5- Very Important
Collaborate with learners on alternative interpretations of a topic or problem	☐	☐	☐	☐	☐

***38. Collaborator**

	1- Not Important	2- Slightly Important	3- Somewhat Important	4- Important	5- Very Important
Ability to promote team dynamics and engagement about a project or scenario through team forums and team chat rooms	☐	☐	☐	☐	☐

***39. Collaborator**

	1- Not Important	2- Slightly Important	3- Somewhat Important	4- Important	5- Very Important
Ability to model collaboration techniques when solving a problem through consensus building activities	☐	☐	☐	☐	☐

***40. Collaborator**

	1- Not Important	2- Slightly Important	3- Somewhat Important	4- Important	5- Very Important
Ability to maintain engaging class discussions	☐	☐	☐	☐	☐

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APPENDIX C: EXPERT'S FEEDBACK FORM

Online Instructor's Expert Survey

Dear Expert Participant,
Thank you for participating in this survey. I would like to obtain feedback on survey instrument. This valuable feedback will be used to improve the next phase of validation with practitioners in the field of online learning.

***41. After completing the questionnaire, what did you find informative or useful in the survey?**

***42. What would you change about this survey?**

43. What did you find irrelevant or less helpful in this survey?

***44. Is the language consistent throughout the survey?**

45. Are the instructions easily understandable?

***46. Is the language appropriate for the participants?**

47. If you do not want to respond to the individual questions above, please use this space to provide your overall thoughts related to the language attributes.

*46. Is the language appropriate for the participants?

47. If you do not want to respond to the individual questions above, please use this space to provide your overall thoughts related to the language attributes.

*48. Does the content have value for the participants?

*49. Can the content be integrated into participants' role as an online instructor?

50. Is the content information recent, or up-to-date?

51. If you do not want to respond to the individual questions above, please use this space to provide your overall thoughts related to this survey.

Thank you for your time! Please feel free to use the space below to write any additional comments pertaining to competencies for an online instructor.

APPENDIX D: PRACTITIONER'S SURVEY

Online Instructor (Practitioner's) Survey

Exit this survey

This worksheet will provide you with the details about this research study and contact information.

Title of Study: Role and constructivist competencies for an online instructor

Principal Investigator (PI): Marsha L. Parker
Wayne State University, Instructional Technology
248-910-9938
email: instructor.competencies@hotmail.com

Purpose:

You are being asked to be in a research study of online instructors because of your background and experience as an online instructor. This study is being conducted at Wayne State University. The estimated number of study participants from iNACOL (International Association for K-12 online teaching and learning) is 400 practitioners as well as 10 experts throughout the United States. Please read this form and ask any questions you may have before agreeing to participate in this study.

In this research study, online instructors will assist in identifying the constructivist role and core competencies for an instructor who facilitates an online course.

Study Procedures:

If you agree to take part in this research study, you will be asked to complete an online survey that provide a list of competencies (behaviors) expected of an online instructor who facilitates, mentors and guides a learner through the learning process. This learning process is focused on creating an engaging, introspective, and participatory learning environment where the learner is accountable for constructing their own knowledge through focused discussion threads, problem-solving scenarios, and reflective learning tools. The instructor is responsible for creating a learning environment that facilitates the development of knowledge and construction of new mental models.

1A. Ten (10) expert participants will be asked to validate content of proposed survey that identifies the constructivist competencies by completing a mini-survey. This mini-survey will allow participants to match constructivist competencies with defined categories. This validation process will ensure that the terminology and descriptors used in proposed model and practitioner survey accurately describe competencies, and performance descriptors. Content validation of survey will involve experts who instruct online courses and are defined as leaders in the field of online learning. Expert will be given a task matching exercise that describes the competencies and associated skills via an electronic survey. Experts will be asked to complete a feedback form that will be used to provide feedback on the survey and competency model along with performance descriptors.

1B. Four hundred (400) practitioners will be asked to validate competency model via an online survey using Survey Monkey. A summary of study and description of responsibilities of participants will be posted on iNACOL's membership website along with a link to survey. Survey will include a consent form, instructions, description of study and competency model.

2. Expert and practitioner surveys will take approximately 30-45 minutes to complete. Participants can complete survey at their own progress. Survey tool will allow students to bookmark their progress as they complete the survey.

3. Practitioner participants will be asked to complete ten demographical questions in section one of survey. In section two, participants will be asked to complete a series of questions regarding the role and performance descriptions associated with an online instructor. Participants will be asked to complete a sections based on the frequency and importance of associated performance statements (descriptors). Participants will be given definitions associated with terminology used in survey. Participants will also be given instructions on how to complete survey and confidentiality of results.

4. Participant's identity will be protected using an anonymous coding system. Completed participant's survey will be locked in a file cabinet for three years.

Benefits: As a participant in this research study, there will be no direct benefit for you; however, information from this study may benefit other people now or in the future.

Risks: There are no known risks at this time to participation in this study.

Costs: There will be no costs to you for participation in this research study.

Compensation: You will not be paid for taking part in this study.

Confidentiality: All information collected about you during the course of this study will be kept without any identifiers.

Voluntary Participation /Withdrawal:
Taking part in this study is voluntary. You are free to not answer any questions or withdraw at any time. Your decision will not change any present or future relationships with Wayne State University or its affiliates.

Questions:

If you have any questions about this study now or in the future, you may contact Marsha Parker or one of her research team members at the following phone number 248-910-9938. If you have questions or concerns about your rights as a research participant, the Chair of the Institutional Review Board can be contacted at (313) 577-1628. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call (313) 577-1628 to ask questions or voice concerns or complaints.

Participation:
By completing the electronic survey you are agreeing to participate in this study.

Next

Online Instructor (Practitioner's) Survey

Exit this survey

A brief description of a constructivist approach used for this research is provided below. Please read and review the following definitions before proceeding with survey.

Definition & Description of Constructivist Approach

A constructivist online instructor is defined as an instructor who facilitates, mentors and guides a learner through the learning process by creating an engaging, introspective, participatory learning environment where the learner is accountable for constructing their own knowledge through focused discussion threads, problem-solving scenarios, and reflective learning tools enabling the development of new mental models regarding a topic or concept (Jonassen, 2004). The instructor is a facilitator of knowledge within this learning environment.

Description of Constructivist Learning Environment

In a constructivist learning environment knowledge is constructed and co-constructed with an instructor, a learner and online community. In a constructivist learning environment an instructor must become a learner of new knowledge and define instructional strategies (e.g. problem solving, critical thinking) that will work in an online learning environment (Jonassen, 1999). An online instructor must create an atmosphere that engages active discussion and promotes critical-thinking skills, along with building a social online community.

It's necessitates a commitment by the instructor to understand the learning needs of each student, create a classroom structure that can easily be navigated, develop activities and simulations that support the learning objectives, and measure comprehension through quizzes and tutorials.

In 1999, Jonassen designed a model that illustrates the components required for a successful constructivist learning environment. This model is the foundation for how online instructors create an engaging and interactive learning environment.

Jonassen, D. H. (1999). Designing constructivist learning environments. Instructional design theories and models: A new paradigm of instructional theory, 2, 215-239.

Jonassen, D. H. (2004). Learning to solve problems: An instructional design guide (Vol. 6). John Wiley & Sons.

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Online Instructor (Practitioner's) Survey

Exit this survey

The purpose of this study is to validate the constructivist competencies for an online instructor.

A proposed competency model has been developed based on Jonnassen's constructivist principles. The proposed competency model is comprised of a list of behaviors and skills associated with the tasks performed by a constructivist online instructor operating in their role as a collaborator, designer, consultant and coach.

Instructions: Please complete the following demographical information based on your role as an online instructor.

MAKE SURE YOU COMPLETE THE ENTIRE SURVEY. A partially completed survey will not count towards research results.

Competency Model

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***1. Please identify your organization affiliation for obtaining access to this survey.**

- ASTD
- iNACOL (International Association for K-12 Online Learning)
- Georgia Virtual School
- Linked In (Discussion forum)
- Michigan Virtual University
- Other (please specify)

***2. Please identify the number of years you have experience teaching in an online learning environment?**

- 1 year
- 2 years
- 3 years
- 4 years
- 5 years or more

*3. Please identify the number of professional certifications and awards received within the last five years related to your experience as an online instructor.

- 0
- 1
- 2
- 3
- 4
- 5 or more

Other (please specify)

*4. Please identify the type of training programs you have completed (as a participant) since becoming an online instructor?

- Annual Professional Development Workshops
- Certification Program
- Local campus faculty development workshops
- Online Mentoring Session
- Professional Development Workshops
- Webinar in Online Learning
- None

Other (please specify)

*5. Please list any publications or research conducted in the field of online learning within the last five years? Please provide name of publication in response.

*6. Please identify any online consulting experience within the last five years? Consulting experience includes opportunities to coach and mentor other online instructors.

*7. Please list your field of study. You can select more than one answer for this question.

- Business Administration
- Education
- Human Resources
- Instructional Technology
- Entry level courses
- Communications
- English
- Language Arts
- Math
- Technology
- Other
- Other (please specify)

*8. Please identify the highest educational level you have achieved:

- Associate degree
- Bachelor degree
- Master degree
- Doctoral degree
- Other

Other (please specify)

*9. Please identify your sector or college that you currently work in within your university. You can select more than one answer for this question.

- College of Education
- College of Humanities
- College of Information Technology
- College of Liberal Arts
- College of Social Work
- Not Applicable
- Other (please specify)

***10. Please identify your employment status as an online instructor.**

- Employed full-time, working 40 or more hours per week
- Employed part-time, working 1-39 hours per week
- Not employed, looking for work in online environment
- Not employed, NOT looking for work in online environment
- Retired

Other (please specify)

***11. Please identify the number of online courses you instruct (teach) within a one year timeframe?**

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7 or more

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Online Instructor (Practitioner's) Survey Exit this survey

The purpose of this exercise is to determine if the competencies identified in research are relevant to the role of an online instructor in real life settings.

Instructions: Please read the following descriptions provided below on the multiple roles of a constructivist online instructor. These roles will be referenced in the following table associated with relevant performance descriptions. Please feel free to print a copy of these descriptions for future reference.

Role of an Online Instructor - Performance Descriptions

A constructivist consultant is an instructor who can mentor and model constructivist behaviors in an online learning environment by providing examples of desired behavior through overt performance called reflection in action. Constructivist Consultant is called Consultant for this survey.

A cognitive coach has the ability to empower learners to interpret and construct meaning based on their own experiences and interactions.

A constructivist designer has the ability to design instructional materials and promote critical thinking skills in a learner using well-structured or ill-structured problems.Constructivist Designer is called Designer for this survey.

As a collaborator an online instructor would promote learner engagement and interaction through focused discussion threads in a collaborative learning environment.

Reflect on your experiences as an online instructor and complete the following survey questions.

***12. Based on the definition of a constructivist online instructor provided in the instructions. How would you identify your role as a constructivist online instructor?(Check all that apply)**

- Consultant
- Cognitive Coach
- Constructivist Designer
- Collaborator

***13. Explain why you identified your role as a consultant, cognitive coach, constructivist designer, and collaborator.**

Online Instructor (Practitioner's) Survey Exit this survey

Instructions: Please identify the importance and frequency of use for each performance description for the competency role. A definition of the competency role is provided below:

A consultant is an instructor who can mentor and model constructivist behaviors in an online learning environment by providing examples of desired behavior through overt performance. A consultant is also focused on developing the critical thinking skills of a learner.

***14. Instructions: Please identify the importance and frequency of each performance description based on an online instructor's role as a consultant.**

	Importance	Frequency
Ability to provide worked examples to solve complex problems by using cues and associations to promote decision-making and reasoning skills		

Additional comments (please specify)

***15. Consultant**

	Importance	Frequency
Mentor learners in usage of collaborative tools (e.g. online chats, eBooks, electronic portfolios)		

Additional comments (please specify)

***16. Consultant**

	Importance	Frequency
Consult with learner on alternative approaches to solve a problem or gain a different perspective on a topic		

Additional comments (please specify)

***17. Consultant**

	Importance	Frequency
Ability to demonstrate a task and model performance through a focused activity or worked example		

Additional comments (please specify)

***18. Consultant**

	Importance	Frequency
Ability to articulate the reasoning that learners should use when engaged in performing an activity, task or assessment		

Additional comments (please specify)

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Online Instructor (Practitioner's) Survey Exit this survey

Instructions: Please identify the importance and frequency of use for each performance description for the competency role. A definition of the competency role is provided below:

A cognitive coach has the ability to empower learners to interpret and construct meaning based on their own experiences and interactions.

***19. Instructions: Please identify the importance and frequency of each performance description based on an online instructor's role as a cognitive coach.**

	Importance	Frequency
Empower learners to interpret and construct meaning based on their own experiences and class interactions		

Additional comments (please specify)

***20. Cognitive Coach**

	Importance	Frequency
Ability to motivate a learner in an online learning environment through use of relevant stories, practical worked examples and personal reflection		

Additional comments (please specify)

***21. Cognitive Coach**

	Importance	Frequency
Model higher order thinking by formulating questions to probe a learner's comprehension of core concepts		

Additional comments (please specify)

***22. Cognitive Coach**

	Importance	Frequency
Ability to guide learners by providing substantive feedback		

Additional comments (please specify)

***23. Cognitive Coach**

	Importance	Frequency
Ability to analyze a learner's performance using cognitive tools and formal assessments		

Additional Comments (please specify)

***24. Cognitive Coach**

	Importance	Frequency
Ability to coach a learner using online chat feature		

Additional comments (please specify)

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Online Instructor (Practitioner's) Survey Exit this survey

Instructions: Please identify the importance and frequency of use for each performance description for the competency role. A definition of the competency role is provided below:

A "constructivist" designer has the ability to design instructional materials that promote critical thinking and problem-solving skills in a learner using well-structured or ill-structured problems.

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***25. Instructions: Please identify the importance and frequency of each performance description based on an online instructor's role as a constructivist designer.**

	Importance	Frequency
Ability to present a problem in a manner that allows the learner to build knowledge in a reflective and analytical manner		

Additional comments (please specify)

***26. Constructivist Designer**

	Importance	Frequency
Ability to design and create complex scenarios that allow students to make decisions and select alternative methods		

Additional comments (please specify)

***27. Constructivist Designer**

	Importance	Frequency
Ability to stimulate a learner by creating materials based on real authentic problems using collaborative tools, such as; podcasts, blogs, online chats, videos, online games, and simulations		

Additional comments (please specify)

***28. Constructivist Designer**

	Importance	Frequency
Ability to design instructional materials (e.g worked examples, case studies, virtual labs) that enables a learner to build knowledge in a reflective and analytical manner		

Additional comments (please specify)

***29. Constructivist Designer**

	Importance	Frequency
Ability to design instructional content that can be used to solve a problem or scenario		

Additional comments (please specify)

***30. Constructivist Designer**

	Importance	Frequency
Ability to adjust learning problems and scenarios based on difficulty and complexity of a learner's ability to comprehend situations		

Additional comments (please specify)

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Online Instructor (Practitioner's) Survey Exit this survey

Instructions: Please identify the importance and frequency of use for each performance description for the competency role. A definition of the competency role is provided below:

As a collaborator an online instructor would promote learner engagement and interaction through focused discussion threads in a collaborative learning environment.

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***31. Instructions: Please identify the importance and frequency of each performance description based on an online instructor's role as a collaborator.**

	Importance	Frequency
Promote learner interaction through focused and engaging discussion threads using authentic tasks in a meaningful context rather than abstract instruction out of context		

Additional comments (please specify)

***32. Collaborator**

	Importance	Frequency
Generate new ideas that promote critical thinking and problem solving skills in a collaborative learning environment		

Other (please specify)

***33. Collaborator**

	Importance	Frequency
Ability to create a collaborative online environment through the construction of knowledge and social negotiation		

Additional comments (please specify)

***34. Collaborator**

	Importance	Frequency
Ability to engage a group of learners in discussion of content that can be used to solve a problem or design a project or portfolio		

Additional comments (please specify)

***35. Collaborator**

	Importance	Frequency
Ability to design social communities that promote engagement and conversation by learners to peer(s) or instructor(s)		

Additional comments (please specify)

***36. Collaborator**

	Importance	Frequency
Collaborate with learners on alternative interpretations of a topic or problem		

Additional comments (please specify)

***37. Collaborator**

	Importance	Frequency
Ability to promote team dynamics and engagement about a project or scenario through team forums and team chat rooms		

Additional comments (please specify)

***38. Collaborator**

	Importance	Frequency
Ability to model collaboration techniques when solving a problem through consensus building activities		

Additional comments (please specify)

Online Instructor (Practitioner's) Survey

Exit this survey

Thank you note

Thank you for participating in this study. The results of this study will help in progressing the certifications standards for an online instructor. Your support of this study is greatly appreciated.

Marsha Parker, Primary Researcher

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APPENDIX E: RESEARCH INFORMATION SHEET

Invitation to Experts

Greetings! Online Instructor,

As a key thought leader in the field of online learning, I'm requesting your assistance in completing a brief survey regarding competencies for an online instructor.

I am writing to request 45 minutes to one hour of your time to share your valuable inputs and validate competencies by completing a brief questionnaire along with a feedback form.

As a part of the PhD program in Instructional Technology & Design at Wayne State University, I'm conducting a study on "The Role & Constructivist Competencies for an Online Instructor."

Please click on this link to access the questionnaire:

[SurveyLink] https://www.surveymonkey.com/s/XX

This link is uniquely tied to this survey and your email address. Please do not forward this message.

We (research committee) want to ensure you that we will maintain strict confidentiality and will not share the details of this study with anyone at any time by using unique identifiers. Also, I'm willing to share a summary of this study with you, if you are interested.

I would appreciate if you can submit the completed survey and feedback form by Sept. 20th, 2013.

If you have any questions regarding this survey, please send an email to instructor.competencies@hotmail.com

Thank you for your support and feedback. It is greatly appreciated to support research development in the field of online learning.

Please note: If you do not wish to receive further emails from us, please click the link below, and you will be automatically removed from our mailing list.
[RemoveLink]

Best regards,
Marsha Parker
248-910-9938

WAYNE STATE UNIVERSITY

IRB Administration Office
87 East Canfield, Second Floor
Detroit, Michigan 48201
Phone: (313) 577-1628
FAX: (313) 993-7122
http://irb.wayne.edu

CONCURRENCE OF EXEMPTION

To: Marsha Parker
Administration & Organization Stud

From: Dr. Scott Millis S Millis, PhD
Chairperson, Behavioral Institutional Review Board (B3)

Date: August 27, 2013

RE: IRB #: 075913B3X

Protocol Title: Role & Constructivist Competencies for an Online Instructor

Sponsor:

Protocol #: 1307012203

The above-referenced protocol has been reviewed and found to qualify for **Exemption** according to paragraph #2 of the Department of Health and Human Services Code of Federal Regulations [45 CFR 46.101(b)].

- A waiver of requirement for written documentation of informed consent has been granted according to 45CFR 46 116(d) and justification provided by the Principal Investigator in the Protocol Summary Form. This waiver satisfies: 1) the only record linking the participant and the research would be the consent document; 2) the principal risk would be potential harm resulting from breach of confidentiality, 3) the consent process is appropriate with an information sheet disclosing the required elements of consent provided to the participants.
- Receipt of Social/Behavioral/Education/Exempt Protocol Summary Form (PSF), revision received 08-26-13.
- Receipt of an Research Information Sheet, dated 08-25-13.
- Data Collection Tools: Receipt of "Expert Survey" and "Practitioner's Survey"
- Receipt of a Research Protocol, received 07-17-13.

This proposal has not been evaluated for scientific merit, except to weigh the risk to the human subjects in relation to the potential benefits.

- Exempt protocols do not require annual review by the IRB.
- All changes or amendments to the above-referenced protocol require review and approval by the IRB **BEFORE** implementation.
- Adverse Reactions/Unexpected Events (AR/UE) must be submitted on the appropriate form within the timeframe specified in the IRB Administration Office Policy (http://irb.wayne.edu/policies-human-research.php).

NOTE: Forms should be downloaded from the IRB Administration Office website http://irb.wayne.edu at each use.

Research Information Sheet

Title of Study: *Role and constructivist competencies for an online instructor*

Principal Investigator (PI): Marsha L. Parker
Instructional Technology
248-910-9938

Purpose:

You are being asked to be in a research study of online instructors because of your background and experience as an online instructor. This study is being conducted at Wayne State University. The estimated number of study participants from iNACOL (International Association for K–12 online teaching and learning is 321 practitioners as well as about 10 experts throughout the United States. **Please read this form and ask any questions you may have before agreeing to be in the study.**

In this research study, online instructors will assist in identifying the constructivist role and core competencies for an instructor who facilitates an online course.

Study Procedures:

If you agree to take part in this research study, you will be asked to complete an online survey that provide a list of competencies (behaviors) expected of an online instructor who facilitates, mentors and guides a learner through the learning process by creating an engaging, introspective, and participatory learning environment where the learner is accountable for constructing their own knowledge through focused discussion threads, problem-solving scenarios, and reflective learning tools.

1. A. Expert Participants will be asked to validate content of proposed survey that identified the constructivist competencies by completing a mini-survey. This mini-survey will allow participants to match constructivist competencies with defined categories. This validation process will ensure that the terminology and descriptors used in proposed model and practitioner survey accurately describe competencies, and performance descriptors. Content validation of survey will involve experts who instruct online courses and are defined as leaders in the field of online learning. Expert will be given a task matching exercise that describes the competencies and associated skills via an electronic survey. Experts will be asked to complete a feedback form that will be used to provide feedback on the survey and competency model along with performance descriptors.

    a. 1 B. Practitioners will be asked to validate competency model with a larger group of online practitioners via an online survey using Survey Monkey. A summary of study and description of responsibilities of participants will be posted on iNACOL's membership website along with a link to Survey Monkey (survey). Survey will include a consent form, instructions, description of study and competency model.

2. Expert and practitioner surveys will take approximately 45 minutes to one-hour to complete. Participants can complete survey at their own progress. Survey tool will allow students to bookmark their progress as they complete the survey.

3. Participants will be asked to complete four demographical questions in section one of survey. In section two, participants will be asked to complete 23 questions regarding the role and performance descriptions associated with an online instructor. Participants will be asked to complete two sections based on the frequency and importance of associated performance statements (descriptors). Participants will be given definitions associated with terminology used in survey. Participants will also be given instructions on how to complete survey and confidentiality of results.

4. Participant's identity will be protected using an anonymous coding system. Completed participant's survey will be locked in a file cabinet for three years.

Benefits

- As a participant in this research study, there will be no direct benefit for you; however, information from this study may benefit other people now or in the future.

Risks

There are no known risks at this time to participation in this study.

Costs

- There will be no costs to you for participation in this research study.

Compensation

- You will not be paid for taking part in this study.

Confidentiality:

- All information collected about you during the course of this study will be kept without any identifiers.

Voluntary Participation /Withdrawal:

Taking part in this study is voluntary. You are free to not answer any questions or withdraw at any time. Your decision will not change any present or future relationships with Wayne State University or its affiliates.

Questions:

If you have any questions about this study now or in the future, you may contact Marsha Parker or one of her research team members at the following phone number 248-910-9938. If you have questions or concerns about your rights as a research participant, the Chair of the Institutional Review Board can be contacted at (313) 577-1628. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call (313) 577-1628 to ask questions or voice concerns or complaints.

Participation:

By completing the electronic survey you are agreeing to participate in this study.

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REFERENCES

Anderson, T. (2001). Assessing teacher presence in a computer conferencing context. *Journal of Asynchronous Learning Networks*, *5*(2), pp. 1-17.

Anderson, T. (Ed.). (2008). *The theory and practice of online learning*. Athabasca, Canada:Athabasca University Press.

Andrews, T. and Klease, G. (1998). Challenges of multisite video conferencing: The development of an alternative teaching/learning model. *Australian Journal of Educational Technology*, 14(2), 88-97.

Aragon, S. R., & Johnson, S. D. (2002). Emerging roles and competencies for training in e-learning environments. *Advances in developing human resources*, 4(4), 424-439.

Arbaugh, J. B. (2005). Is there an optimal design for on-line MBA courses? *Academy of Management Learning & Education*, *4*(2), 135–149.

Aydin, C. H. (2005). Turkish mentors' perception of roles, competencies and resources for online teaching. *Turkish Online Journal of Distance Education*, 6(3), 501-520.

Baker, C. (2010). The impact of instructor immediacy and presence for online student affective learning, cognition, and motivation. *The Journal of Educators Online*, *7*(1), 1–30.

Barab, S., Squire, K. (2004). Design-based research. Putting a stake in the ground. *The Journal of Learning Sciences*, *13*(1), 1–14.

Baran, E., (2011). Transforming online teaching practices: critical analysis of the literature on the roles and competencies of online instructors. *Distance Education. 32*(3), 421–439.

Barbazette, J. (2006). Training needs assessment: Methods, tools, and techniques. San Francisco, CA. John Wiley & Sons.

Barr, R. B., & Tagg, J. (1995). From teaching and learning: A new paradigm for undergraduate education. *Change*, *27*(6), 13–25.

Bawane, J., & Spector, J. M. (2009). Prioritization of online instructor roles: Implications for competency-based teacher education programs. *Distance Education, 30*(3), 383–397.

Bedwell, W. L., & Salas, E. (2008). If you build it, will they interact? The importance of the instructor. *Industrial & Organizational Psychology*, *1*(4), 491–493. doi:10.1111/j.1754-9434.2008.00093.x

Behrens, J. T., & Yu, C. H. (2003). Exploratory data analysis. *Handbook of Psychology*. San Francisco, CA. John Wiley & Sons.

Benson, H. H. (2000). *Socratic wisdom: The model of knowledge in Plato's early dialogues*. Oxford: Oxford University Press.

Berge, Z. L. (1995). The role of the online instructor/facilitator. *Educational Technology*, *35*(1), 22–30.

Berge, Z. L. (1998). Barriers to online teaching in post-secondary institutions: can policy changes fix it?. *Online Journal of Distance Learning Administration*, *1*(2).

Berge, Z. L. (1999). Interaction in post-secondary web-based learning. *Educational Technology, 39*(1), 5–11.

Berge, Z. L. (2008). Changing instructor's roles in virtual worlds. *Quarterly Review of Distance Education*, *9*(4), 407–414.

Berge, Z. L., & Collins, M. P. (2000). Perceptions of e-moderators about their roles and functions in moderating electronic mailing lists. *Distance Education, 21*(1), 81–100.

Bernthal, P. R. (2004). *ASTD 2004 competency study: Mapping the future: New workplace learning and performance competencies* (Vol. 1). American Society for Training and Development.

Bigatel, P. M., Ragan, L. C., Kennan, S., May, J., & Redmond, B. F. (1987). The identification of competencies for online teaching success. *Journal of Asynchronous Learning Networks, 16*(1), pp. 59-77.

Bock, H., & Ruyak, R. (2006). Constructing core competencies: Using competency models to manage firm talent. American Bar Association.

Bogdan, C. B., & Biklen, S. K. (1998). *Qualitative research in education: An introduction to theory and methods*. Needham Heights, MA: Allyn and Bacon.

Boghossian, P. (2002). Socratic pedagogy, race, and power. *Education Policy Analysis Archives, 10*, 3. Retrieved from http://epaa.asu.edu/ojs/article/view/282/408

Boghossian, P. (2006). Behaviorism, constructivism, and Socratic pedagogy. *Educational Philosophy and Theory, 38*(6), 713–722.

Bonk, C. J., & Zhang, K. (2008). *Empowering online learning:100+ activities for reading, reflecting, displaying, and doing*. New York: John Wiley & Sons.

Borman, W. C., & Motowidlo, S. J. (1997). *Task Performance and Contextual Performance:* The meaning for personnel selection research. *Human Performance 10*(2), 99–109.

Bostock, S. J. (1998). Constructivism in mass higher education: A case study. *British Journal of Educational Technology, 29*(3), 225–240.

Chaijaroen, S. (2008). Educational Technology: Principles Theories to Practices. *Khon Kaen: Klungnanawittaya*.

Chiabaru, D. (2000, March/April). *The long way from personality to performance*. Paper presented at the Society for Advancement of Management International Conference, St Augustine, FL.

Chickering, A. W., Gamson, Z. F., & Poulsen, S. J. (1987). Seven principles for good practice in undergraduate education.

Chyung, S. Y. (2008). *Foundations of Instructional and Performance Technology*. Massachusetts: HRD Press.

Clark, R. E. (1983). Reconsidering research on learning from media. *Review of Educational Research*, *53*(4) 445–459.

Cochran, W. G. (1977). *Sampling techniques*. (3rd ed.). New York: John Wiley & Sons.

Collis, B. (1996). *Tele-learning in a digital world: The future of distance learning*. London: International Thomson Computer Press.

Comrey, A. L., & Lee, H. B. (1992). *A first course in factor analysis*. Hillsdale, NJ. Lawrence Erlbaum Associates, Inc.

Connelly, L. M (2009) Mixed methods studies. *MEDSURG Nursing*, *18*, 31–36.

Cooper, D. R., & Schindler, P. S. (2006). *Business Research Methods* (3rd ed.). New York: McGraw Hill.

Coppola, N. (1997). Sage on stage or mentor in MUD: Changing roles for teachers of technical communication. *INTERCOM*, *44*(1), 6–9.

Coppola, N., Hiltz, S. R., and Rotter, N. (1998, November). *Becoming a virtual professor: Preliminary results of semi-structured interviews*. Paper presented at the Fourth International Conference on Asynchronous Learning Networks, New York, NY.

Coppola, N., Hiltz, S. R., and Rotter, N., (2002). Becoming a virtual professor: Pedagogical roles and asynchronous learning networks. *Journal of Management Information Systems, 18*(4), 169–190.

Cowan, J. (2006). *On becoming an innovative university teacher: Reflection in action*. Berkshire, England: Open University Press.

Cunningham, D., & Duffy, T. (1996). Constructivism: Implications for the design and delivery of instruction. *Handbook of Research for Educational Communications and Technology*. New York, NY: Lawrence Erlbaum Associates, Inc.

Dalton, M. (1997). Are competency models a waste? *Training & Development, 51*(10), 46.

Darabi, A. A., Sikorski, E. G., & Harvey, R. B. (2006). Validated competencies for distance teaching. *Distance Education, 27*(1), 105–122. Retrieved from http://search.proquest.com.proxy.lib.wayne.edu/docview/217783181?accountid=14925

Davis, N. E., & Roblyer, M. D. (2005). Preparing Teachers for the" Schools that Technology Built": Evaluation of a Program to Train Teachers for Virtual Schooling. *Journal of Research on Technology in Education, 37*(4), 399-409.

Dean, P., & Ripley, D. E. (1997). *Performance improvement pathfinders: Models for organizational learning*. Washington, DC: International Society for Performance Improvement.

Dede, C. (1990). The evolution of distance learning: Technology-mediated interactive learning. *Journal of Research on Computing in Education*, *22*(3), 247–264.

Diamond, R. M. (1989). *Designing and improving courses and curricula in higher education*. San Francisco: Jossey-Bass.

Dirckinck-Holmfeld, L. (2002). Designing virtual learning environments based on problem orientated project pedagogy. In L. Dirckinck-Holmfeld and B. Fibiger (Eds.), *Learning in Virtual Environments* (pp. 31-54), Samsfundslitteratur, Frederiksberg.

Dirkx, J. M., Mezirow, J., & Cranton, P. (2006). Musings and reflections on the meaning, context, and process of transformative learning: A dialogue between John M. Dirkx and Jack Mezirow. *Journal of Transformative Education*, *4*(2), 123–139.

Duffy, T. M., Lowyck, J., & Jonassen, D. (Eds.), (1993). *Designing environments for constructivist learning*. Heidelberg: Springer-Verlag.

Ehmann, C., & Hewett, B. L. (2005). Designing a principles-based online training program for instructors. *Distance Learning*, *2*(2), 9–13. Retrieved from http://search.proquest.com.proxy.lib.wayne.edu/docview/230685986?accountid=14925

Egan, T. M., & Akdere, M. (2005). Clarifying distance education roles and competencies: Exploring similarities and differences between professional and student-practitioner perspectives. *The American journal of distance education, 19*(2), 87-103.Fabro, K. G., & Garrison, D. R. (1998). Computer conferencing and higher-order learning. *Indian Journal of Open Learning*, *7*, 41–53.

Fink, L. D. (2003). *Creating significant learning experiences: An integrated approach to designing college courses*. San Francisco: Jossey-Bass.

Flood, P., Guthrie, J., Liu, W., Mkamwa, T., Armstrong, C., O'Regan, C., & MacCurtain, S. (2008). *New models of high performance work systems: The business case for strategic HRM, partnership and diversity and equality systems.* Dublin, Ireland. Equality Authority and National Center for Partnership Performance.

Flottenmesch, K. (2000). Building effective interaction in distance education: A review of the literature. *Educational Technology, 40*(3), 46–51.

Giani, E., & Schroeder, U. (2004). *Situated learning with the learning environment*. Proceedings of the International Conference on Web-Based Education WBE04, Innsbruck.

Gilbert, T. F. (1978). *Human competence: Engineering worthy performance*. New York: McGraw-Hill.

Glasersfeld, E. V. (2005). Thirty years constructivism. *Constructivist Foundations, 1*(1), 9–12.

Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The qualitative report*, *8*(4), 597-607.

Gold, S. (2001). A constructivist approach to online training for online teachers. *Journal of Asynchronous Learning Networks, 5*(1), 35–57.

Goodyear, P., Salmon, G., Spector, M., Steeples, C., & Tickner, S. (2001) Competencies for online teaching. *Educational Technology Research & Development*, *49*(1), 65–72.

Gorsky, P., & Blau, I. (2009). Online teaching effectiveness: A tale of two instructors. *The International Review of Research in Open and Distance Learning, 10*(3).

Graham, C. R. (2006). Blended learning systems. *CJ Bonk & CR Graham, The handbook of blended learning: Global perspectives, local designs. Pfeiffer*.

Greening, T. (1998). Building the constructivist toolbox: An exploration of cognitive technologies. *Educational Technology*, *38*(2), 23–35.

Guascha, T., Espasa, A. (2009a). University teacher roles and competencies in online learning environments: A theoretical analysis of teaching and learning practices. *European Journal of Teacher Education*, *32*(3), 321–336.

Guascha, T. (2009b). *University teacher competencies in a virtual teaching/learning environment. Analysis of a teacher training experience.* http://dx.doi.org.proxy.lib.wayne.edu/10.1016/j.tate.2009.02.018.

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. *Handbook of Qualitative Research*, *2*, 163–194.

Gunawardena, C. N. (1992). Changing faculty roles for audiographics and online teaching. *The American Journal of Distance Education. 6*(3), 58–71.

Hamel, G., & Prahalad, C. K. (1989). Strategic Intent. *Harvard Business Review*.

Hannafin, M. J., Hannafin, K. M., Land, S. M., & Oliver, K. (1997). Grounded practice and the design of constructivist learning environments. *Educational Technology Research and Development*, *45*(3), 101–117.

Harasim, L. (1989). On-line education. A new domain. In R. Mason, & A. Kaye (Eds.), *Mindweave: Communication Education, 37*(1), 40–53.

Harless, J.H. (1973). An analysis of front-end analysis. Improving Human Performance: *A Research Quarterly*, Vol. *4*, 229–244.

Harless, J. H. (1987). An analysis of front-end analysis. *Performance+ Instruction*, *26*(2), 7-9.

Hartwig, F. (1979). *Exploratory data analysis*. Newberry Park, CA: Sage.

Hesse-Biber, S. N. (2010). *Mixed methods research: Merging theory with practice*. New York, NY: Guilford Publication.

Hmelo, C. E., & Evenson, D. H. (2000). Problem-based learning: Gaining insights on learning interactions through multiple methods of inquiry. In D. Evensen & C. Hmelo (Eds.). *Problem-based learning; a research perspective on learning interactions* (pp. 1–16). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Hmelo-Silver, C. E. & Barrows, H. S. (2006). Goals and strategies of a problem-based learning facilitator. *Interdisciplinary Journal of Problem-based Learning*, 1, 21–39.

Hoffman, B., & Ritchie, D. (1997). Using multimedia to overcome the problems with problem based learning. *Instructional Science*, *25*, 97–115.

Hong, S., & Jung, I., (2011). The distance learner competencies: A three-phased empirical approach. *Educational Technology Research and Development*, 59, 21-42.

Houston, W. R., & Howsam, R. B. (1972). Competency-Based Teacher Education; Progress, Problems, and Prospects.

Huang, H. M. (2002). Toward constructivism for adult learners in online learning environments. *British Journal of Educational Technology*, *33*(1), 27–37.

Huer, B. H. & King, K. P. (2004). Leading the band: The role of the instructor in online learning for educators. *The Journal of Interactive Online Learning, 3*(1).

Hutchison, C., Stein, F., & Shepherd, J. (1988). *Instructor Competencies: The Standards,* Vol. 1. Syracuse, NY: ERIC Clearinghouse on Information and Technology

Isavea, I. (2007). Classification of instructor's personal and professional competencies. *Russian Education and Society*, *49*(9), 31–41.

Johnson, D. W., & Johnson, F. P. (1994). *Joining together: Group theory and group skills*. Boston: Allyn and Bacon.

Johnson, R. B. & Onwuegbuzie, A. J. (2004). Mixed-methods research: A research paradigm whose time has come. *Educational Researcher*, *33*(7), 14–26.

Jonassen, D. H. (1994). *Computers in schools:Mindtools for critical thinking*. University Park, PA: Pennsylvania State University Press.

Jonassen, D. H. (1999). Designing constructivist learning environments. *Instructional design theories and models: A new paradigm of instructional theory, 2*, 215–239.

Jonassen, D. H. (2000). Toward a design theory of problem-solving. *Educational Technology Research and Development*, *48*(4), 63–85.

Jonassen, D. H. (2004). *Learning to solve problems: An instructional design guide*, Vol. 6. San Francisco, CA: John Wiley & Sons.

Jonassen, D. H., Carr, C., & Yueh, H. P. (1998). Computers as mindtools for engaging learners in critical thinking. *TechTrends, 43*(2), 24–32.

Jonassen, D., Davidson, M., Collins, M., Campbell, J., & Haag, B. B. (1995). Constructivism and computer-mediated communication in distance education. *American Journal of Distance Education*, 9(2), 7-26.

Kabilan, M. K. (2005). Online professional development: A literature analysis of teacher competency. *Journal of Teacher Education*, 21(2), 51-57.

Keller, J. M. (1987a). Strategies for stimulating the motivation to learn. *Performance+ Instruction*, *26*(8), 1–7.

Keller, J. M. (1987b). Development and use of the ARCS model of instructional design. *Journal of instructional development*, *10*(3), 2–10.

Kenny, JDJ and Quealy, J and Young, J, RMIT ICT DLS Competency Framework - A basis for effective staff development. *UltiBase Online Journal,* EJ ISSN 1443-7023 (2002)

Kim, J. O., & Mueller, C. W. (Eds.). (1978). *Factor analysis: Statistical methods and practical issues* (Vol. 14). Newberry Park, CA: Sage.

Kim, K. J. (2006). The future of online teaching and learning in higher education. *The EDUCAUSE Quarterly*, *29*, 22.

Kimberlin, C. L. & Winterstein, A. G. (2008). Validity and reliability of measurement instruments used in research: Research fundamentals. *American Journal of Health Systems*, *65*, 12.

Kirby, E., and Driscoll, M. (1997, March). *Facilitator and students roles and performance in a high school distance education course*. Paper presented at the annual meeting of the Association of American Education Research Association, Chicago, IL.

*Klein, J. M., Spector, J. M., Grabowski, B., & de la Teja, I. (2004). *Instructor competencies: Standards for face-to-face, online, and blended settings*. Greenwich, CT: Information Age.

Klemp Jr, G. O. (1980). The Assessment of Occupational Competence. Final Report: I. Introduction and Overview.

Kogan, M., & Hanney, S. (2000). *Reforming higher education*. *Higher education policy series 50*. Philadelphia, PA: Jessica Kingsley Publishers.

Kommers, P., Jonassen, D. H., & Mayers, T. (1992). *Cognitive tools for learning*. Heidelberg, FRG: Springer-Verlag.

Köymen, U. S. (1992). Comparison of learning and study strategies of traditional and open-learning-system students in Turkey. *Distance Education, 13*(1), 108-117.

Kotrlik, J. W. K. J. W., & Higgins, C. C. H. C. C. (2001). Organizational research: Determining appropriate sample size in survey research appropriate sample size in survey research. Information technology, learning, and performance journal, 19(1), 43.

Kurt, S. (2011). Use of constructivist approach in architectural education. *Procedia Social and Behavioral Sciences*, *15*, 3980–3988.

LaPointe, D. K., & Gunawardena, C. N. (2004). Developing, testing and refining of a model to understand the relationship between peer interaction and learning outcomes in computer mediated conferencing. *Distance Education*, *25*(1), 83–106.

Lee, Chris. (1988, December). The HRD hall of fame. *Training*, *25*(12), 71. Retrieved from *ProQuest Education Journals*. (Document ID: 826579)

Leedy, P. D., & Ormrod, J. E. (2001). *Practical research & design* (7th ed.). Upper Saddle River, NJ: Merrill Prentice Hall.

Lewis-Snow, L. K., and Farris, E. (1999). *Distance education at postsecondary education institutions*: *1997–1998*. U.S. Department of Education, NCES #2000-013. Washington, DC: U.S. Government Printing Office.

Longanecker, D. (2002). Is Merit-Based Student Aid Really Trumping Need-Based Aid?. *Change: The Magazine of Higher Learning*, *34*(2), 30-37.

Lucia, A. D., & Lepsinger, R. (1999). *The art and science of competency models: Pinpointing critical success factors in organizations*. San Francisco: Jossey-Bass/Pfeiffer.

Mansfield, R. S. (1996). Building competency models: Approaches for HR professionals. *Human Resource Management*, *35*(1), 7-18.

Markel, M. (1999). Distance education and the myth of the new pedagogy. *Journal of Business & Technical Communication, 13*(2), 208–223.

Marker, A. (2007). Synchronized analysis model: Linking Gilbert's behavior engineering model with environmental analysis models. *Performance Improvement*, *46*(1), 26–32. Retrieved from *ProQuest Education Journals*. (Document ID: 1614106161)

Markus, L., Thomas, H. C., & Allpress, K. (2005). Confounded by competencies? An evaluation of the evolution and use of competency models. *New Zealand Journal of Psychology*, *34*(2), 117.

McClelland, D. C. (1973). Testing for competence rather than for intelligence. *American Psychologist, 28*(1), 1–14.

McClelland, D. C., & Boyatzis, R. E. (1980). Opportunities for counselors from the competency assessment movement. *The Personnel and Guidance Journal, 58*(5), 368–372.

McCombs, B. L., & Whisler, J. S. (1997). The learner-centered classroom and school: Strategies for increasing student motivation and achievement. *The Jossey-Bass Education Series*. San Francisco, CA: Jossey-Bass.

McLagan, P. A. (1989). Models for HRD Practice. *Training and Development Journal*, *43*(9), 49-59.

Merriam, S. B., & Caffarella, R. S. (1999). *Learning in adulthood: A comprehensive guide* (2nd ed.). San Francisco: Jossey-Bass.

Merrill, M. D. (1994). *Instructional design theory*. Engelwood Cliffs, NJ: Educational Technology.

Mezirow, J. (2000). *Learning as transformation: Critical perspectives on a theory in progress*. San Francisco, CA: Jossey-Bass.

Moore, M. G. (1989). Three types of interaction. *The American Journal of Distance Education, 3*(2), 1–6.

Moore, M. G. (2004). Editorial, Constructivists: Don't Blame the Tools!. *The American Journal of Distance Education*, *18*(2), 67-72.

Mory, E. H. (2004). Feedback research revisited. *Handbook of Research on Educational Communications and Technology*, *2*, 745–783.

National Education Association, Washington, DC. (2000). *A survey of traditional and distance learning higher education members*. Washington, DC: ERIC Clearinghouse.

Nicol, A. A., & Pexman, P. M. (1999). *Presenting your findings: A practical guide for creating tables.* Washington DC: American Psychological Association.

Northrup, P. (2001). A framework for designing interactivity into web-based instruction. *Educational Technology, 41*(2), 31–39.

O'Neil, T. (2006). How distance education has changed teaching and the role of the instructor. *Proceedings ISECON 2007, v24 (Pittsburgh).*

Palincsar, S. (1998). Social Constructivist Perspectives on Teaching and Learning. *Annual Rev Psychology*. *49*: 345-75.

Palloff, R., & Pratt, K. (2001). *Lessons from the cyberspace classroom: The realities of online teaching.* San Francisco: Jossey-Bass.

Pape, L., & Wicks, M. (2009). National Standards for Quality Online Programs. *International Association for K-12 Online Learning*.

Parry, S. B. (1998). Just what is a competency? And why should you care? *Training, 35*(6), 58–64.

Parsons, E. C., Capka, M. A. (1997). Building a successful risk-based competency assessment model. *AORN Journal*, 1997 Dec;66(6):1065-71. Retrieved from http://www.aornjournal.org/article/S0001-2092%2806%2962545-3/fulltext

Patrick, S. (2008, May 7). About iNACOL. [Overvew of iNACOL]. Retrieved from http://www.inacol.org/about/overview/

Patton, M. Q. (1999). Enhancing the quality and credibility of qualitative analysis. *Health Services Research*, *34*, 1189.

Pershing, J. A. (2006). Human performance technology fundamentals. *Handbook of human performance technology*, 5-34.

Phillips, R., & Merisotis, J. (2000). Quality on the line: Benchmarks for success in Internet-based distance education. *The Institute for Higher Education Policy*. Washington, DC: National Education Association.

Piskurich, G. M., & Sanders, E. S. (1998). ASTD models for learning technologies: Roles, competencies, and outputs (Vol. 1). *American Society for Training and Development*. Alexandria, VA: ASTD.

Polk, J. A. (2006). Traits of effective teachers. *Arts Education Policy Review*, *107*(4), 23–29.

Porter, L. A. (1997). *Creating the virtual classroom: Distance learning with the Internet.* New York: John Wiley & Sons.

Purdy, L. N., & Wright, S. J. (1992). Teaching in online education: A faculty perspective. *The American Journal of Online education*, *6*(3), 2–4.

Ragin, C. C. (1987). *The comparative method: Moving beyond qualitative and quantitative strategies*. Berkeley: University of California Press.

Ramsay, J., & Sorrell, E. (2007). Problem-Based Learning An Adult-education-oriented Training Approach For SH&E Practitioners. *Professional safety, 52*(9).

Reaves, C.C. (1992). *Quantititative research for behavioral sciences*. New York: John Wiley & Sons.

Reid, D. (2002). *A classification schema of online tutor competencies.* Computers in Education, 2002. Proceedings. International Conference on Digital Object Identifier: 10.1109/CIE.2002.1186147 Publication Year: 2002, Page(s): 1049 - 1050 vol.2

Richardson, J. C. and Swan, K. (2003). Examining social presence in online courses in relation to students' perceived learning and satisfaction. *Journal of Asynchronous Learning Networks, 7*(1), 68–88.

Richey, R., Fields, D., Foxon, M., Roberts, R. C., Spannaus, T., & Spector, J. M. (2001). *Instructional design competencies: The standards* (3rd ed.). New York, NY: International Board of Standards for Training, Performance and Instruction (IBSTPI).

Richey, R., Klein, J. D., & Tracey, M. W. (2011). *The instructional design knowledge base: Theory, research, and practice*. New York, NY: Taylor & Francis.

Rohfeld, R. W. & Hiemstra, R., (1995). Moderating discussions in the electronic classroom. In Z. Berge & M. Collins (Eds.), *Computer mediated communication and the online classroom* (Vol. 3, pp. 91–104). Cresskill, NJ: Hampton Press.

Rovai, A. P. (2003). Strategies for grading online discussions: Effects on discussions and classroom community in Internet-based university courses. *Journal of Computing in Higher Education, 15*(1), 89–107.

Rovai, A. P. (2004). A constructivist approach to online college learning. *The Internet and Higher Education*, *7*(2), 79–93.

Rowley, D. J., Lujan, H. D., & Dolence, M. G. (1998). *Strategic choices for the academy: How demand for lifelong learning will re-create higher education.* San Francisco, CA: Jossey-Bass.

Ruoma, W. E. (2005). Applying qualitative data. In R. A. Swanson & E. F. Holton (Eds.), *Research in organizations*. San Francisco, CA: Berrett-Koehler Publishers.

Russo, T., & Benson, S. (2005). Learning with invisible others: Perceptions of online presence and their relationship to cognitive and affective learning. *Educational Technology & Society*, *8*(1), 54–62.

Salkind, N. J. (1997). *Exploring research* (3rd ed.). Upper Saddle River, NJ: Prentice Hall.

Salmon, G. (2000) Computer mediated conferencing for management learning at the Open University. *Management Learning*, *31*(4), 491–502.

Salmon, G. (2003). *E-moderating: The key to teaching and learning online*. New York, NY: Routledge.

Salmon, G. (2004). E-*Moderating: the key to online teaching and learning* (2nd ed.). London: Taylor & Francis.

Savery, J. R., and Duffy, T. M. (2001). Problem based learning: An instructional model and its constructivist framework. *Educational Technology*, *35*, 31–38.

Savery, J. R. (2005). BE VOCAL: Characteristics of successful online instructors. *Journal of Interactive Online Learning*, *4*(2), 141–152.

Sawyer, J. C., (2010). High performance work systems for online education. *Online Journal of Distance Learning Administration, Vol 13.* Retrieved from http://www.westga.edu/~distance/ojdla/Fall133/sawyer_revels_ciampa133.html

Schmidt, H. G., Loyens, S. M., Van Gog, T., & Paas, F. (2007). Problem-based learning is compatible with human cognitive architecture: Commentary on Kirschner, Sweller, and Clark (2006). *Educational Psychologist*, *42*(2), 91–97.

Schmidt, H. G., Van der Molen, H. T., Te Winkel, W. W., & Wijnen, W. H. (2009). Constructivist, problem-based learning does work: A meta-analysis of curricular comparisons involving a single medical school. *Educational Psychologist*, *44*(4), 227–249.

Sellers, R. G. (2001). *Learning to teach in a virtual environment: A case study of the Louisiana virtual classroom teachers.* (Order No. 3016578, Louisiana State University and Agricultural & Mechanical College). *ProQuest Dissertations and Theses*,,190-190 p. Retrieved from http://search.proquest.com.proxy.lib.wayne.edu/docview/275812977?accountid=14925. (275812977).

Sener, J. (March, 1997). Constructivism: Asynchronous Learning Networks. *ALN Magazine*, *1*(1).

Sener, J. (2010). Why online education will attain full scale. *Journal of Asynchronous Learning Networks*, *14*(4)*, 3–16*.

Shank, P. (2004). Competencies for online instructors. *Denver, CO: Learning Peaks, LLC. Retrieved from http://ets.tlt.psu.edu/learningdesign/onlinecontent/instructors*.

Shea, P. & Bidjerano, T. (2006). Community of inquiry as a theoretical framework to foster epistemic engagement and cognitive presence in online education. *Computers and Education, 52, 543–553*.

Shirvani, H. (2007). Effects of teacher communication on parents' attitudes and their children's behaviors at schools. *Education*, *128*(1*), 34–47.*

Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology and Distance Learning*, *2*(1), 3-10.

Sikora, A. C., & Carroll, C. D. (2002). *Postsecondary education descriptive analysis reports.* U.S. Department of Education, NCES 2003-154. Washington, DC: US Government Printing Office.

Simonson, M. R., Smaldino, S., Albright, M., & Zvacek, S. (2000). *Teaching and learning at a distance*. Upper Saddle River, NJ: Merrill.

Sjogren, J., & Fay, J. (2002). Cost issues in online learning: Using "co-opetition" to advantage. *Change, 34*, 53–53. Retrieved from http://search.proquest.com.proxy.lib.wayne.edu/docview/208055074?accountid=14925.

Smith, T. C. (2005). Fifty-one competencies for online instruction. *The Journal of Educators Online, 2*(2*), 1–18.*

Smith, M., & Berge, Z. L. (2009). Social learning theory in Second Life. *Journal of online learning and teaching*, *5*(2), 439-445.

Spector, J. M., & Anderson, T. M. (Eds.) (2000). *Integrated and holistic perspectives on learning, instruction and technology*: *Understanding complexity*. Dordrecht: Kluwer.

Spector, J. M., & de la Teja, I. (2001). *Competencies for online teaching*. ERIC Digest. Syracuse, NY: ERIC Clearinghouse on Information & Technology. EDO-IR-2001-09

Spector, J. M. (2007). Competencies for online teachers. In J. M. Spector (Ed.), *Finding your online voice: Stories told by experienced online educators* (pp. 1–18). Mahwah, NJ: Lawrence Erlbaum.

Spencer, L. M. (1997). Competency assessment methods. What Works: Assessment, Development, and Measurement, 1–36. *American Society for Training and Development*. Alexandria, VA: ASTD.

Stacey, E. (2004). Collaborative learning in an online environment. *Journal of Distance Education*, *14*(2*), 14–33.*

Stevenson, K., Sander, P., & Naylor, P. (1996). Student perceptions of the tutor's role in distance learning. *Open Learning*, *11*(1), 22–30.

Stodel, E. J., Thompson, T. L., & MacDonald, C. J. (2006). Learners' perspectives on what is missing from online learning: Interpretations through the community of inquiry framework. *The International Review of Research in Open and Distance Learning, 7*(3).

Swan, K. (2003). Learning effectiveness: What the research tells us. In J. Bourne & J. C. Moore (Eds.), *Elements of quality online education: Practice and direction* (Vol. 3, pp. 13–45). Needham, MA: Sloan Consortium.

Tabachnick, B. G., Fidell, L. S., & Osterlind, S. J. (2001). Using multivariate statistics. *International Edition*. New York, NY: Pearson.

Tabata, L. N., & Johnsrud, L. K. (2008). The impact of faculty attitudes toward technology, distance education, and innovation. *Research in Higher Education*, *49*(7*), 625–646.*

Tammelin, M. (1998). From telepresence to social presence: The role of presence in a network-based learning environment. *Aspects of Media Education, 8*, 219–231.

Tanner, J., Noser, T., & Totaro, M. (2009). Business faculty and undergraduate students' perceptions of online learning: a comparative study. *Journal of Information Systems Education, 20*(1), 29–40.

Taylor, E. W. (1998). The Theory and Practice of Transformative Learning: A Critical Review. Information Series No. 374.

Thach, E. (1994). *Perceptions of distance education experts regarding the roles, outputs, and competencies needed in the field of distance education*. Ph.D. diss., Texas A & M University, College Station. Retrieved from http://search.proquest.com.proxy.lib.wayne.edu/pqdtft/docview/304154727/79F90DE638C7471EPQ/1?accountid=14925

Thompson, J. E., Stuart, R., Lindsay, P. R. (1997). The competence of top team members: A framework for successful performance. *Team Performance Management*, *3*(2), 57–75.

Treacy, Barbara, & Baltunis, Sara. (2011, October). National Standards for Quality Online Teaching Version 2. In B. Bakken & B. Bridges (Eds.), iNACOL course standards (International Association for K–12 Online Learning No. 2, p. 4). iNACOL. Retrieved from http://www.inacol.org/cms/wp-content/uploads/2013/02/iNACOL_TeachingStandardsv2.pdf

Tu, C. H., & McIsaac, M. S. (2002). The relationship of social presence and interaction in online classes. *The American Journal of Distance Education*, *16*(3), 131–150.

Van den Akker, J., Gravemeijer, K., McKenney, S., & Nieveen, N. (Eds.). (2006). *Educational design research*. New York, NY: Routledge.

Varvel, V. (2001). Facilitating every student in an online course. In Pointers & Clickers. *Illinois Online Network, 4*. Retrieved from http://www.ion.uillinois.edu/Resources/pointersclickers/2001_03/ionpointers0301.pdf

Varvel, V. (2004). Shifting to online education and back again: One educators experience learning to teach online, and transferring instructional knowledge to face-to-face practice. *ION Research Case Studies, 3*(2). Retrieved from http://www.ion.uillinois.edu/resources/casestudies/vol3num2/index.asp

*Varvel, V. E. (2007). Master online teacher competencies. *Online Journal of Distance Learning Administration*, *10*(1).

Vrasidas, C. (2000). Constructivism versus objectivism: Implications for interaction, course design and evaluation in distance education. *International Journal of Educational*, *6*(4), 339-362.

Vrasidas, C., & McIsaac, M. S. (1999). Factors influencing interaction in an online course. *American Journal of Distance Education*, *13*(3), 22–36.

Voorhees, R.A. (2001). Competency-Based Learning Models: A Necessary Future. *New Directions for Institutional Research*, *110, 5–13*.

Waddell, D., Cummings, T. G., & Worley, C. G. (2008). *Organisation development & change*. Mason, OH: Cengage Learning.

Wang, F. & Hannafin, M. J. (2005). Design-based research and technology-enhanced learning environments. *Educational Technology Research and Development*, 53(4), 5–23.

Watwood, B., Nugent, J., & Deihl, W. (2009). *Building from content to community: Rethinking the transition to online teaching and training*. Richmond, VA: VCU Center for Teaching Excellence.

Wedemeyer, C. A. (2009). *Learning at the back door. Reflections on nontraditional learning in the lifespan*. Madison, WI: The University of Wisconsin Press.

Westera, W. (1999). Paradoxes in open, networked learning environments; toward a paradigm shift. *Educational Technology*, *39*, 17-23.

Wiesenberg, F., & Stacey, E. (2005). Reflections on teaching and learning online: Quality program design, delivery and support issues from a cross global perspective. *Distance Education*, *26*(3), 385–404.

*Williams, P. E. (2003). Roles and competencies for distance education programs in higher education institutions. *The American Journal of Distance Education*, *17*(1), 45–57.

Williams, P. E., & Hellman, C. M. (2004). Differences in self-regulation for online learning between first-and second-generation college students. *Research in Higher Education*, *45*(1), 71-82.

* Wilson, B. G. *Constructivist learning environments: Case studies in instructional design*. Englewood Cliffs NJ: Educational Technology Publications.

Wilson, B. G. (2004). Designing e-learning environments for flexible activity and instruction. *Educational Technology Research and Development*, *52*(4), 77–84.

Wilson, K. A., Bedwell, W. L., Lazzara, E. H., Salas, E., Burke, C. S., Estock, J. L., & Conkey, C. (2009). Relationship between Game Attributes and Learning Outcomes Review and Research Proposals. *Simulation & Gaming*, *40*(2), 217–266.

Yeung, A., Woolcock, P., & Sullivan, J. (1996). Identifying and developing HR competencies for the future: Keys to sustaining the transformation of HR functions. HR. *Human Resource Planning*, *19*(4), 48–58.

Yew, E. H., & Schmidt, H. G. (2012). What students learn in problem-based learning: A process analysis. *Instructional Science*, *40*(2), 371–395. doi:10.1007/s11251-011-9181-6

Young, S., (2006). Student Views of Effective Online Teaching in Higher Education. *The American Journal of Distance Education*, *20 (2)*, 65-77.

Yuksel, I. (2009). Instructor Competencies for Online Courses. *Procedia-Social and Behavioral Sciences, 1*(1), 1726-1729.

* All references marked with an asterisk were used in the formulation of the competency model for this study.

ABSTRACT

ROLE AND CONSTRUCTIVIST COMPETENCIES FOR ONLINE INSTRUCTORS: ELEMENTS OF A QUALITY ONLINE COURSE

by

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Distance education programs in higher education are evolving into the preferred model for how we educate learners in the 21st century. The traditional role of an instructor was focused on creating an effective learning environment based in a physical classroom setting. In this decade, institutions are educating and training online instructors to a virtual online asynchronous learning environment. Online programs based in higher education, specifically those focused on adult learners, are transforming how and why we educate our communities. This study will focus on online instructors who facilitate in an asynchronous learning environment populated by adult learners who attend higher-education institutions. Institutions are asking how we can transition instructors into the role of constructivist facilitators of knowledge while building their competencies as effective online instructors. This question is explored by defining the criteria for success based on core and functional (unique) competencies focused on creating a stimulating and engaging online learning environment. This research study will examine the role of an online instructor, explore current competency models, and define the unique (constructivist) competencies needed for success as an online instructor. Eventually, a certification

program is needed that supports the competency development of an online instructor. This certification structure will also support how institutions (colleges as well as profit and nonprofit universities) hire, evaluate, and rank the performance of online instructors using the proposed constructivist competency model. As higher-education institutions focus on retention of the adult learner population, a shift must occur in the performance standards required of online instructors. These performance standards must be clearly defined and communicated by an institution if it is to remain competitive in the industry of delivering online courses. The proposed constructivist competency model in this study will establish the performance standards for measuring a quality online learning course. This constructivist competency model will also ensure that the next generation of online instructors has the tools and resources needed to create a vibrant and engaging online learning environment. As the online learning community expands to include profit institutions, business and industry, collaborative communities, online universities, local community colleges, local high schools, and government organizations, there is an increasing need to define how we create a quality online learning experience for our learners. The learner is demanding that we, as a learning community, provide them with the best tools, resources, and knowledge to prepare them for the real world. This learning community is challenged to inspire, develop, and cultivate the talents of our learners by ensuring they have the best online learning experience. Any shortcuts would hinder the development and ability of our future generation to compete within a global society. As (online) instructors, our purpose is to ensure that we prepare our learners with the opportunity to compete at the local, international, and global levels. Our desire should be to continue to improve our own skills through professional development opportunities, workshops, coaching, mentoring, and acknowledging the need for certification standards. These certification standards would give instructors the opportunity to invest in their own development by achieving recognized standards with financial incentives for creating a quality online learning experience. Accreditation in the field of online learning is needed to ensure that instructors are properly trained, hired according to relevant standards & competencies, receive ongoing career development, practice consistent standards, and are held accountable for providing a quality online experience for learners. If we (i.e., organizations, institutions, universities) fail to implement a consistent set of standards, we provide a disservice to our learners by not ensuring that the same or higher standards required in a traditional classroom are applied in an online course.

Keywords: constructivist, online learning, online instructor, competencies

AUTOBIOGRAPHICAL STATEMENT

Marsha Parker has a proven track record, having provided consultant services to local and international companies for the past 15 years, working exclusively within automotive, health care, and banking. Marsha has focused on providing performance improvement and instructional design services to her clients by identifying areas for continuous improvement and designing instructional systems. A core area that Marsha is extremely proud of is her experience as an online instructor. Marsha has facilitated online courses for eight years at the University of Phoenix. This experience has given her an understanding of the challenges that an online instructor faces when facilitating a new or existing course. Marsha understands how this environment has changed and wants to be a part of the significant improvements that will occur in the field of online learning.

Marsha is currently employed full-time as a senior instructional designer at Ford Motor Company in the information technology (IT) division of Learning and Development. This position has enabled her to understand the dynamics of a global organization that serves to improve and enhance the skills of the IT community. Her responsibilities include managing the launch of a global curriculum for IT, conducting front-end analysis for various business units, designing instructional events, and managing vendor relationships. Marsha is excited about the potential impact her research will have on the field of learning and development, the online instructor, her community, and the online learner.