Considerations for delivery of online professional development courses for childcare professionals

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University of Northern Iowa

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CONSIDERATIONS FOR DELIVERY OF ONLINE PROFESSIONAL DEVELOPMENT COURSES FOR CHILDCARE PROFESSIONALS

An Abstract of a Dissertation

Submitted

in Partial Fulfillment

of the Requirements for the Degree

Doctor of Education

Approved:

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Dr. Susan Hudson, Committee Co-Chair

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July 2007
ABSTRACT

In an age of increasing accountability, childcare professionals are held responsible for providing young children quality early care and education. The unfortunate reality is that it is challenging for childcare professionals to pursue training because of the cost of training, family responsibilities, and scheduling conflicts. The Internet has the capability to knock down those barriers in the childcare profession, and has expanded the availability of information and has created avenues for teaching and learning.

The purpose of this study was to gain an understanding of the factors that will give online professional development instructors a better insight into the characteristics and attitudes of childcare professionals in order to deliver the most effective and efficient online professional development. The study utilized an online survey collecting quantitative and qualitative data from childcare professionals who had completed an online professional development course.

The study found that childcare professionals who had completed an online professional development course had a positive attitude towards Internet learning and classified themselves as experienced Web users. The findings revealed that participants’ learning styles and characteristics were diverse. In addition, there were also participation barrier themes that emerged. These included childcare professionals’ knowledge of computers or the Internet, their dedication and determination, and the quality of online professional development.

It was evident from the findings in the study that there are two considerations that instructors need to reflect on for the delivery of online childcare professional
development programs. The online learning environment and the childcare professional as a learner are key elements for designing effective online professional development courses for childcare professionals. The online learning environment consists of four components: (a) computer capabilities and Internet attitudes, (b) course quality, (c) instructor accessibility, and (d) networking opportunities. The childcare professional as a learner is made up of four factors: (a) learner characteristics, (b) experience levels, (c) learning styles, and (d) motivation. These elements guided the creation of the Childcare Professional Development Online Characteristic Model, which is intended to help guide instructors to deliver effective and efficient online professional development. Suggestions for further research and educational implications are offered.
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July 2007
DEDICATION

This work is dedicated to my family, especially Ben and Lyle, for believing and supporting me, and to childcare professionals who have made a difference in the lives of children. Because you cared, you made a difference.
ACKNOWLEDGMENTS

This work is the result of people believing in me and helping me make it happen. During this journey, there have been many people who have provided their time, guidance, and support in my work. It is with extreme gratitude that I acknowledge these individuals for their encouragement.

I am indebted to Dr. Susan Hudson for the countless hours you spent with me. From your encouragement to apply for the doctoral program to your invaluable mentoring, this journey would not have started or finished without your support. You are part of my academic foundation that I am extremely grateful for.

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This journey was an exciting adventure. The University of Northern Iowa is a fantastic place with many outstanding faculty, staff, and students. I am proud to be a Panther. Many friends and family supported my adventure. I am extremely thankful for those friends that kept asking how I was doing. Larry Bruya, Deedra Dahlager, Mark Jacobson, Kristy Leen, Donna Mokricky, Jean Schappett, Darrin Seifken, Delann Soenksen, Annie VanderWerff, and Julie Werling thank you for caring and your prayers.
Dad, Mom, Lana, Derrick, and Riley Bauer; Tim, Marty, and Rena Olsen; and Emily, Martin, and Maddy Moen your support was appreciated. Lyle, you’re the light of my life. Thanks for your big smiles, laughs, and kisses. You have taught me so much. My husband, Ben, deserves all the credit for this journey. I would not have been able to accomplish this goal if you did not support me. I appreciated the countless hours you listened and read. Most importantly, thank you for giving me the time to do this. Your gift of patience, understanding, and love is remarkable.
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CHAPTER I

INTRODUCTION

In an age of increasing accountability, childcare professionals are held responsible for providing young children quality early care and education. The need for early childhood professional training has expanded throughout the United States. In fact, ninety-seven percent of states require childcare professionals to receive training annually (Smith, 2006). The training of childcare professionals is intimately connected to the development of the field of early childhood education. As more than six in ten children are cared for regularly by someone other than their parents, research on childcare professionals training, education, and ability to provide a safe and stimulating environment has an impact on children's cognitive and emotional development (National Association for Child Care Resource and Referral [NACCRRA], 2006). Research reports verify that childcare professional training has had a positive effect on the quality of care childcare professionals provide for the children they serve (National Association for the Education of Young Children [NAEYC], 2005).

A major problem with childcare training requirements is that there are barriers. Training barriers typically exist that reduce access for the childcare professional (e.g., inconvenient scheduling, prohibitive costs, personal childcare needs), leaving many of them unable to attend training (Bailey & Osborne, 1994). The National Association for the Education of Young Children (1993) suggested that many training barriers include lack of money, scheduling problems, institutional racism, language communication, and literacy expectations, and skills. Findings from the literature review indicate that it is
professionals know about the early childhood field. For example, some individuals have entered into the early childhood field after their experiences as a parent. Many of these individuals have received a college degree in another field and they do not have the educational background of the early childhood field. This challenges childcare professionals to pursue training because of the cost of training, other family duties, scheduling conflicts, and the lack of incentives for completion of training. The diverse educational qualifications and experiences that individuals have when they enter into the profession sometimes create an inconsistency of what childcare professionals know about the early childhood field. Additionally, there are individuals who have never received any formal educational training.

As the world changes, so does education and training. The Internet has expanded the availability of information and has created avenues for teaching and learning. The knowledge available on the Internet is the “finest knowledge resource ever to exist,” because it is easy to access, more complete, frequently updated, interactive, and easier to understand (Breck, 2006, p. 6). The Internet has the capability to knock down those barriers in the childcare profession. “Technology is here to stay, so the question is not if we should use it, but rather, what is, what can, and what should be, the role of technology in training, continuing education and professional development for childcare professionals” (Donohue, 2002, p. 3). This is a positive trend if the childcare profession believes and accepts the idea that the Internet is one possibility to provide training to those that work with young children.
The Internet has expanded in recent years with the rapid growth with online and web-based instruction both in the higher education and the corporate environment. But this trend is not as available in the childcare environment. After reviewing the literature, the researcher found that most of the online training environments for childcare professionals were delivered through a higher educational institution and a few were offered by for profit organizations. If childcare training organizations are considering embracing online training because it is the new thing, rather than for effective delivery of instruction, the result of training may not be as effective.

Those that offer training to childcare professionals should not rush into providing training through the Internet. The delivery of effective online courses is more than just duplicating the traditional classroom course. Levin and Sun (2002) described the current state of Internet-based distance education:

Most distance learning courses resemble traditional classroom courses or poor imitations—talking heads, lots of text, and streaming video. Distance education has failed to take advantage of the Internet as a new medium. It tends to be more mass than individual, to involve more one-way than interactive communication. This typical primitive response to new media mirrors past actions: When motives were invented, producers filmed plays. With the advent of television, radio actors performed on screen. And when distance learning started happening via Internet, universities asked faculty to duplicate their courses online. (p. 5)

While many educators have reported on the possibilities of online learning, the research has not yet proven that this is of interest to childcare professionals. Thus, there is not an understanding of the characteristics and learning styles of childcare professionals as learners. What do online teachers need to know about childcare professionals that are taking online training courses?
Online learning has emerged. Those interested in teaching online to the childcare professionals need to know more about these individuals. Few research findings have reported who these childcare professionals are. Questions still exist in the area. What are the learning characteristics? Do childcare employers provide training opportunities? What are the education levels of childcare professionals? These are just a few questions that need to be addressed to give a clear understanding of childcare professionals in order to effectively meet their learning needs.

Understanding the learning characteristics and learning styles of childcare professionals can help online teachers deliver effective training courses online. Designing instruction is challenging. Online educators who provide training to childcare professionals can make a more effective use of technology and media if one has a basic grasp of the current understanding of the childcare professionals, their attitudes towards the Internet, and their learning styles. As a teacher, one must be prepared to choose the best tools to engage students in learning (Smaldino, Russell, Heinich, & Molenda, 2005). Therefore, it is necessary to understand the learners whom one is teaching so that teachers can design instruction that is most appropriate for the learners (Dick, Carey, & Carey, 2005).

The effectiveness of online training courses, like traditional courses, is dependent upon many factors. Included in these factors are learner characteristics, course organization, preparation of the teachers with the delivery of the course, and teaching activities (Willis, 1992). The role of the person delivering the instruction plays a key part in the learning environment. The teacher is the key to a successful distance education
program (Office of Technology Assessment, 1989). The teacher has the power to make the program succeed or to lead the program to failure. An effective teacher needs to be aware of different learning characteristics (Gardner, 1999) in order to decide what type of online experience one will create. The involvement of the student in an online course will need to be active. Online instructors need to give guidance and opportunities to all students so that all will be involved in the online learning environment (Conrad & Donaldson, 2004).

There have been limited studies conducted about online learning in the childcare profession. The recent emergence of online training has provided little time for empirical data to be collected and published. There is also limited literature on the use of online training with a population outside of academia. A qualitative case study by LaBonte (2003) examined two courses in an online post-baccalaureate professional certification program in childcare program administration. The study showed that the students' experiences in online distance education were convenient, satisfying, and successful (LaBonte, 2003).

There are still many questions that are unanswered: Would childcare professionals enroll in professional development training courses delivered online? What type of childcare professionals (center based teachers, home providers, center directors, etc.) would want professional development training online? What type of learners are childcare professionals? What is their attitude towards the Internet?

In an effort to understand the considerations that should be made before effective training is delivered, this study will examine factors that training developers should
examine before offering training courses to childcare professionals. Research about childcare professionals' characteristics, their attitudes towards the Internet, learning styles, and training barriers could contribute to the understanding of childcare professionals' online learning experience.

Need for the Study

Childcare professional development training is expanding rapidly throughout the country. The increase of the number of children in childcare, the advocacy of training by professional organizations, and the demand for early childhood training will continue to grow. The rationale and recommendation that is suggested for childcare professional development training, and a review of the literature confirms, that ongoing staff development and training will continue to provide opportunities for childcare professionals. Childcare professional training will enhance staff motivation, advance their professional skills, and provide current research and information on child development, developmentally appropriate practices, and healthy and safety practices.

Research on online educational environments has started to change the way childcare teachers and training organizations view teaching and learning. Access to technology, more specifically the Internet, has made training and development of training much easier and more cost-effective. Research is beginning to report the effectiveness of online education including investigating technology, media, course design, teaching methods, and cost-effectiveness (Moore & Kearsley, 1996).

However, the research has not led to an understanding of childcare professionals. There is a need to understand the characteristics of childcare professionals. Herring and
Smaldino (2005) indicated that learning experience is enhanced when instructors have a general understanding of the characteristics of the learners. Research is needed to have an understanding of childcare professionals learning styles, demographic characteristics, Internet attitudes, and training barriers so that online training programs can deliver them effectively.

**Observations of Childcare Professionals**

I begin the study with the view that childcare professionals truly care about and want the best for children. I believe that childcare professionals want to provide quality care and that they will do just about anything in order to receive the most current information to help them succeed. For instance, at a national childcare convention, it is common to see childcare professionals carrying bags of information from the exhibit hall. I once asked a woman if she would actually read all the information she had in her two bags and the roller cart she was pulling. She said, “Of course! I have to be current on all the latest standards, research, and curriculum. This is how I stay connected.” This person really is the image of a childcare professional. They are hard working, child advocates, and life-long learners.

I recognize that people who work with children deserve to receive the best possible training and education. Childcare professionals are surrounded by training opportunities and most states mandate training. Unfortunately, there are organizations, groups, and individuals who are offering training just to be a part of the childcare training market. As I have learned throughout my course of study, educating adults takes time,
knowledge, experience, and established relationships. One of the most valuable pieces I have learned is that a teacher must understand one's learner.

My work experiences spans a variety of environments where I have taught a diversity of individuals; including childcare professionals, childcare directors, elementary education teachers, children, front line maintenance workers, and playground supervisors. I believe these experiences have helped me to formulate a question that will guide me to having a better understanding of childcare professionals. I believe that understanding who the childcare professionals are, their learning styles, and their attitudes towards technology will help me and others deliver effective online instruction in the future.

Statement of the Problem

There is a need for effective training of childcare professionals. Childcare professionals are required to receive professional development training. However, the lack of research on the topic suggests that those that are providing the training do not have a good understanding of the learning styles, attitudes towards the Internet, demographic characteristics, and participation barriers of childcare professionals.

Purpose of the Study

The purpose of this study was to gain an understanding of the factors that will give online training instructors a better insight into the characteristics and attitudes of childcare professionals, in order to deliver the most effective and efficient online training programs.
Research Questions

The following primary question was used to guide this study. What are considerations that instructors and instructional designers need to address for effective delivery and development of online training courses for childcare professionals? The following supporting questions guided this study.

1. What are the backgrounds, educational levels, technology experiences, income levels, and the ages of childcare professionals?

2. What are childcare professionals perceived attitudes towards Internet learning?

3. What types of learning styles are present with childcare professionals?

4. What barriers to participate are perceived to exist for childcare professionals who enroll in online professional development training?

Assumptions

The following assumptions were made in pursuit of this study.

1. The respondents to the questionnaires would provide honest and sincere answers.

2. The respondents were capable of understanding all the statements in the survey.

3. The measuring instrument is valid, reliable, and an objective measuring tool.

Limitations of the Study

The results of the study were limited to the population studied. The population is only generalized within the context of childcare professionals who completed an online
training professional development course. The study is also limited to electronic submissions of the survey and subsequent responses.

**Definition of Terms**

To enhance the understanding of this study, definitions are given for relevant terms. The uses of these definitions were limited to the population, settings, and results of this study. The principal investigator of this study, unless noted otherwise, developed the definitions.

1. **Childcare Director**: A person in charge of administrative duties. This person may have teaching responsibilities with children and with the staff.

2. **Childcare Professional**: People who care for children in early care and education programs. They could include assistant teachers, teachers, and teacher directors.

3. **Childcare Teacher**: A person in charge of a group or classroom of children.

4. **Learning Styles**: The way individuals prefer to absorb and incorporate new information. Learning styles affect the way individuals make decisions, solve problems, perceive new information, and respond to situations.

5. **Online Education**: Education that is delivered electronically through the Internet. Distance education and E-learning are terms that are synonymous to online education. The terms are considered to be included within online education:

   a. **Distance Education**: A method of formal education, where the learners are separated and "where interactive telecommunications systems are used to
connect learners, resources, and instructors” (Simonson, Smaldino, Albright, & Zvacek, 2003).

b. E-Learning (electronic learning): Learning that is mediated by an electronic medium (Driscoll, 2002).

6. Teaching Strategy: The instructional activities and the instructional tools that are used in an online learning environment.

7. Training: Professional development activities that occur outside the formal education system (Maxwell, Field, & Clifford, 2004).
CHAPTER II
REVIEW OF THE LITERATURE

In an age of increasing accountability, childcare professionals are held responsible for providing young children quality early care and education. In an effort to provide quality care and education to young children, states are requiring childcare professionals to become better caregivers. Childcare professionals must receive annual training as a way to achieve quality early care and education to young children. The unfortunate reality is that childcare professionals have reported that it is not easy to receive training. One possibility for childcare professionals to receive training is to provide the training through the Internet. The purpose of this study was to identify key factors and considerations that training instructors should examine before offering online training courses to childcare professionals. A review of the literature summarizes the importance of understanding the learners so that online educational programs can be delivered effectively to childcare professionals. More specifically, the literature review describes learning styles, components of online education, and the characteristics of the childcare profession and the childcare professional.

Understanding the Learner

The way, in which teachers view the role of training, whether it is in the classroom or through the Internet, should depend very much on understanding the learners and what types of teaching strategies are appropriate for the learners. This section will outline the importance of understanding the learners before instruction is delivered and will explore a variety of adult learning styles.
Many researchers would agree that if instructional media and technology are to be used effectively, instructors must understand the learner characteristics and their lifestyles (Johnson, 2003). There are several widely known researchers that address the design of online instruction (Alessi & Trollip, 2001; Dick, Carey, & Carey, 2001; Driscoll, 2002; Gagne, Briggs, & Wager, 1988; Kearsley, 2005; Rothwell & Kazanas, 1998; Smaldino, Russell, Heinich, & Molenda, 2005). Each one of these researchers addressed that for online education to be effective, there needs to be an understanding of who the learners are. The first step in all these cited models was to analyze the learners.

Gillani (2003) suggested that the most important thing to remember when designing learning environments is to gather adequate information about the learners to help determine which teaching strategy should be implemented. In addition, Smaldino, Russell, Heinich, and Molenda (2005) indicated that one should analyze the learner by determining the learners’ characteristics, specific entry competencies, and learning styles.

Analyzing the learners will give the instructor background information for the design phase and guide the decision on what teaching strategy should be implemented. Analyzing the learners would help instructors recognize information for design features, organization of the information, communication with learners, level of interactivity, types of graphics to be used, and types of media to be used (Gillani, 2003). Further, Gillani (2003) suggested that learning about the personalized needs of learners include:

(a) becoming involved and seeking information about the community (creating surveys and interviews to gain information about the learners’ social characteristics, communication styles, personality, cognitive ability, linguistic style, and academic background),
(b) seeking appropriate information about the learners,
(c) determining their learning styles, and
(d) recognizing design implications. (p. 232)
Online instructors can appropriately and effectively deliver the content of the course if they understand the demographics and learning styles of the learners. Driscoll (2002) asserted that the audience, task, and the environment must be analyzed for online training development. In addition, the researcher suggested that the learners' comfort level and computer skill should be examined in order to determine what types of instructional strategies should be offered to the learner. The computer environment needs to be analyzed in order to determine what activities (i.e., streaming video, audio, visuals, course readings, etc) should be delivered (Driscoll, 2002).

There are two types of information, general and specific, that need to be examined in order to determine the characteristics of the learners (Gillani, 2003). The general types of information that was recommended to be collected include age, academic level, sex, family status, ethnicity, religion, level of computer and internet experience, and access to technology from home and school (Gillani, 2003). Further, the author noted that the specific types of information to include were the personalized needs of the student’s social characteristics, communication styles, personality, cognitive ability, and linguistic styles.

Age, gender, social class, and ethnicity also need to be analyzed in order to understand who the learners are. Gender research has indicated that female students, more than males, tend to display a preference for cooperative learning in environments where they can express their challenges and achievements (Kumar, 1999). Women are motivated by affiliate motives and social approval (Elizur & Beck, 1994). It has been suggested (Kirkup & von Prummer, 1997) that more female than male distance education
students suffer from the isolation of studying at a distance, and that, for women, it was particularly important to have access to personal communication with the instructor to "humanize their studies and help them feel valued." (Hipp, 1997, p. 44)

One study reported that women chose to study by distance to gain new information and knowledge, whereas for men, they wanted higher professional qualifications and income (von Prummer, 1990). Further, the von Prummer (1990) study found that more of the women said they studied to improve themselves and increase their self-esteem. Gibson (2000) indicated that woman and men learn differently in distance education. If in fact, women and men respond differently to different aspects of learning environments and styles, then it is necessary for online instructors to differentiate these factors so that positive experiences can be made that will enhance achievement for all individuals. Conclusions drawn from the literature review suggest that understanding the learner must first be understood before online learning training programs are created.

Learning Styles

The question of how adults learn has gained the attention of scholars and practitioners since the 1920s when adult education became a professional field of practice (Merriam, 2001). Adult learners need to be engaged and encouraged to integrate what is learned into their daily experiences. Godbey (1978) indicated that adult learners need the opportunity to develop relationships with instructors and other learners through participation in educational programs relevant to their interest.

Educators have, for many years, realized that individuals prefer certain methods of learning to others. Instructional designers and teachers not only have to analyze their
learners, but they need to understand different learning styles. Learning styles was defined as “a cluster of psychological traits that determine how an individual perceives, interacts with, and responds emotionally to a learning environment” (Smaldino et al., 2005, p. 22). By understanding different learning styles, effective educational online training programs can be planned, designed, and developed that are conducive to the educational goals of the learners.

Witkin (1950) first developed learning style theory in the 1940s when he developed a theory of perception called field dependence and independence. The idea was later expanded when Witkin and his colleagues observed different types of learning styles. They reported that some people were able to learn things in isolation, whereas others needed to learn more holistically (Witkin, Lewis, Hertzman, Machover, Meissner, & Wapner, 1954).

Years later, Howard Gardner described learning styles through his theory of multiple intelligences. Gardner’s (1983) multiple intelligence theory has been widely used by teachers in the school setting. Gardner (1983) presented that not all people learn the same way or have the same abilities, so in his book, *Frames of Mind*, he examined the educational implications of Multiple Intelligences (MI). Gardner’s Multiple Intelligence theory suggested that all people possess at least seven distinct forms of intelligence (1983). These intelligences were linguistic, logical-mathematical, musical, spatial, bodily-kinesthetic, interpersonal, and intrapersonal intelligence. Gardner’s MI theory implied that effective instructors needs to be aware of different learning styles, so that
they can implement a variety of teaching methods for learners to develop different aspects of intelligence.

Similarly, Gagne, Briggs, and Wager (1988) proposed five qualities that are learned by individuals: intellectual skills, cognitive strategies, verbal information, motor skills, and attitudes. In addition, Dick, Carey, and Carey (2001) asserted that the instructional designers must carefully consider intellectual skills, cognitive skills, verbal information, motor skills, and attitudes when designing online learning environments.

Intellectual skills include an individual knowing how to do something through interacting with the environment (Gagne, et al., 1988). Characteristics of intellectual skills are dependent upon what the learner already knows (Gagne, Wager, Golas, & Keller, 2005). The intellectual skills that a person has play a role in how instructional designers deliver the instruction. Training delivered to a person with intellectual skills should be done in a sequence (Dick, Carey, & Carey, 2005).

The second quality that is learned by individuals is cognitive skills. Cognitive strategies are skills by which learners regulate their own internal processes of attending, learning, remembering, and thinking (Gagne, et al., 1988). The third quality that is learned by individuals is verbal information. Verbal information includes a person being able to state or tell a fact or a set of events by using oral speech or by writing, typewriting, or drawing a picture (Gagne, et al., 2005). Verbal information becomes an essential component for online instructor, because verbal information needs to be included (Dick, et al., 2005).
The fourth quality that is learned by individuals is motor skills. Motor skills consist of the learner executing movements in a variety of physical actions (Gagne, et al, 1988). Online training teachers will want to pay attention to the types of motor skills that should be offered (Dick, et al., 2005). The last quality that is learned by the individuals is attitudes. Attitudes are an internal state that modifies choices of personal action toward objects, persons, or events (Gagne, et al., 2005). Attitudes consist of feelings, behaviors, and cognitive understandings. The learner's attitude can have a direct effect of the learning experience. Johnson (1980) defined attitudes as “combinations of concepts, information, and emotions that results in a predisposition to respond favorably or unfavorably toward particular people, groups, ideas, events, or objects.” (p. 46)

Motivation is also important in adult learning. Motivation is defined as the concept that is used to describe the forces acting on or within the adult learner to initiate or direct behavior (Wlodkowski, 1999). Motivation defines what people will do rather than what they can do (Keller, 1987). John Keller, an instructional designer, developed a motivation model. Keller's (1987) ARCS model identified the four essential aspects of motivation: attention, relevance, confidence, and satisfaction. He stated:

Attention refers to gaining the attention of the learners and keeping it throughout the instruction. Relevance refers to whether learners believe the instruction has meet their need or if the information is important. Confidence refers to whether learners expect to succeed based on their own efforts. Satisfaction refers to the intrinsic and extrinsic motivation rewards learners receive from the instruction. (p. 136)

For adult learners, motivation is often determined by outside factors. Instructional designers must try to identify the motives of students and to channel them into activities that can accomplish their educational goals (Gagne, 1985). In order for
online instructors to motivate students to succeed in the training program, one must understand who the learners are.

Gibson (2000) challenged online education instructors to “know the learner” (p. 140). She noted that online learners are a heterogeneous group and that instructors should design learning activities to capitalize on this diversity (p. 141). Individuals that are learning online are likely to have the same learning styles as individuals that learn in a traditional classroom setting. However, the learning activities and options are different in the fact that they may be limited and sometimes their preferred training approaches are not available (Smith & Dalton, 2005). Therefore, instructors need to know learning styles and be prepared to have alternative approaches of delivering instruction so that learners can achieve their learning goal. Herring and Smaldino (2005) indicated that the delivery of an online course might offer a variety of techniques of instruction, such as animation, text, visuals, audio, or video to meet the learning styles of the learners.

Learning styles has been presented to understand the different types of individual’s learning styles and the variety of theories that address learning styles.

Learning Style Instruments

There are a variety of instruments designed to determine learning styles. Tests vary in length, language, content, price, and accessibility. There is not an abundance of research in the area of learning styles and online education. Most of the studies focused on the discovery of relationships between learning styles and student achievement outcomes.
One of the most popular learning style inventories and one that is most often used in online education research is the Kolb Learning Style Inventory (Diaz & Cartnal, 1999). Kolb (1976) suggested that individuals learn and solve problems by progressing through four basic modes. The four basic modes of the learning in Kolb’s experiential learning model (Kolb, 1976) are abstract-conceptualization, active-experimentation, concrete-experience, and reflective-observation. Kolb described the modes in the following ways:

1. Abstract-conceptualization learning mode emphasized preference for learning through logical ideas and concepts. Learners focused on thinking as opposed to feeling. Learners are good at the manipulation of abstract symbols and quantitative analysis. (Kolb, 1985, p. 3)

2. Active-experimentation mode focused on a preference for learning through practical application. This mode emphasized doing as opposed to reflective understanding. Learners with active-experimentation enjoyed getting things done. (Kolb, 1985, p. 3)

3. Concrete-experience mode relates to learning through direct experience and dealing with immediate situations in a personal way. This mode focuses on feeling as opposed to thinking. Learners with concrete-experience characteristics enjoy learning and are good at relating to others. (Kolb, 1985, p. 3)

4. Reflective-observation focused on a preference for learning through careful observation. The learners with reflective-observation could form their own
opinions and were good at viewing things from different perspectives. (Kolb, 1985, p. 3)

Kolb (1985) suggested that each individual’s learning style is usually a combination of two learning modes. Kolb used the four modes of learning to identify the four basic learning styles. He named the four learning styles accommodator, assimilator, converger, and diverger. Kolb described them as follows:

1. An accommodator was the combination of concrete-experience and active-experimentation. This type of learner learned by doing. They were good at carrying out plans and getting involved in new experiences. (Kolb, 1985, p. 4)

2. An assimilator was the combination of abstract-conceptualization and reflective-observation. This type of learner was more concerned with abstract concepts than with people and was good at putting a wide range of information into logical form. They were good at inductive reading and creating theoretical models. (Kolb, 1985, p. 4)

3. A converger was the combination of abstract-conceptualization and active-experimentation. This type of learner preferred to deal with things rather than people and was best at finding practical uses for ideas and theories. A converger could do best where there was one answer to a question. (Kolb, 1985, p. 4)

4. A diverger was the combination of concrete-experience and reflective-observation. This type of learner was interested in people and was good at
generating ideas and seeing things from different perspectives. (Kolb, 1985, p. 4)

Kolb (1985) suggested that it is possible that a person might prefer one style in one situation, and another style in another situation. Therefore, the learning style may vary depending on the task. Figure 1 illustrates the four quadrants of Kolb’s (1976) learning style theory.

![Figure 1. Kolb’s Learning Style Theory Grid](image_url)

James and Gardner (1995) described Kolb’s Learning Style Inventory as a cognitive learning style mode. Cognitive learning was identified as information that is stored and retrieved in the brain and how the learner perceives, thinks, problem-solves,
and remembers (James & Gardner, 1995). It has been questioned whether or not Kolb’s Learning Style Inventory is the best instrument to use to determine learning styles for online learners. Diaz and Cartnal (1999) argued that Kolb’s Learning Style Inventory is not the best learning style instrument to use because it does not address social preference issues that are important in online education. On the other hand, Driscoll (2002) asserted that when cognitive skills are to be learned they are the best-suited skills for delivery by online training. Further, she stated that cognitive skills could be communicated online by using “language, text, numbers, and symbols” (p. 105).

There have been researchers that have used Kolb’s Learning Style Inventory with relationship to online education. One research study used Kolb’s Learning Style Inventory to identify predictors of high risk among community college telecourse students (Dille & Mezack, 1991). High risk was described as being more prone to being unsuccessful (Dille & Mezack, 1991). Students that were successful in the telecourse had lower scores on their preferences for concrete experiences than did non-successful students. Further, they reported that students with high concrete experience have a greater sensitivity to feelings, and thus would be expected to require more interactions with other learners and the instructor. The researcher related the Kolb’s Learning Style Inventory to the telecourse students. The researcher indicated that since online education courses lead to social isolation and require a greater amount of independent learning, students with less needs for concrete experience may be better suited to online education.

Further, Dille and Mezack (1991) concluded that students who needed concrete
experience and were not able to think abstractly were more the high-risk students in a telecourse.

The findings agree with the Terrell and Dringkus study. Terrell and Dringkus (2000) found that the majority of learning students preferred working alone and were "more interested in abstract concepts and ideas than people" (p. 233). They found that convergers and assimilators were more comfortable with computer based training than with divergers and accommodators. These classifications are consistent with Kolb's (1985) definition of a converger in the fact that convergers would rather deal with things than people.

Another study conducted in 2004 described the relationship between adult learners' learning styles and their preferred instructional activities within computer-based technical training. Wein-Pin (2004) concluded that accommodators and convergers preferred the hands-on learning of the simulation exercises and convergers did not like to work in teams. Further, the research reported that accessing additional information outside of the curriculum by Web links, simulation labs, guided learning activity in labs, visual aides, and example exercises were preferred instructional strategies. Table 1 outlines the preferred instructional strategies that were reported in Wein-Pin's (2004) research.
Table 1

Wein-Pin's (2004) Preferred Instructional Activities

<table>
<thead>
<tr>
<th>Preferred Instructional Activities</th>
<th>Accommodators</th>
<th>Assimilators</th>
<th>Convergers</th>
<th>Divergers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simulation Exercises</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Play Active Roles</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Interactive Post Test</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Non-Interactive Strategies</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reader-Friendly Text and Slides</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Controlling Visual Aides</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

The less preferred learning styles that were reported by accommodators, assimilators, convergers, and divergers were drag and drop activities, matching words, and definitions. Table 2 describes the less preferred instructional strategies that were reported in Wein-Pin’s (2004) study.
Table 2

*Wein-Pin's (2004) Less Preferred Instructional Activities*

<table>
<thead>
<tr>
<th>Less Preferred Instructional Activities</th>
<th>Accommodators</th>
<th>Assimilators</th>
<th>Convergers</th>
<th>Divergers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work In Teams</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math Activities</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Interactive Pre-Questions</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Reader-Friendly Text and Slides</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Controlling Visual Aides</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Determining learning styles can be instrumental in selecting the teaching strategies for an online course. Teaching strategies are the instructional activities and the instructional tools that are used in an online learning environment. Conclusions drawn from the literature review suggest that teaching strategies for an online training program, based on the findings of Kolb's (1985) learners, can be drawn from learners who are accommodators, assimilators, convergers, and divergers.

An accommodator learns by doing. They learn by getting involved in new experiences. Facilitators of online experiences that offer courses for accommodators will want to utilize teaching strategies that include instructional multimedia, listservs, chats, simulators, and role-playing activities. Instructional multimedia incorporates a mix of media, including sound, graphics, animation, text, and video (Johnson, 2003). Chats
allow learners to have a live discussion with anyone that is connected to the chat (Palloff & Pratt, 1999). Simulators engage the learner to analyze, synthesis, organize, and evaluate content by doing the activity in a virtual environment (Driscoll & Carliner, 2005). Role-playing situations that include a problem with many scenarios should be used for learners that are accommodators (Henke, 2001). Accommodators would need to solve the problem in the role-playing situation.

Online training programs that are offered for accommodators will want to provide opportunities for accommodators to get to know one another. Conrad and Donaldson (2004) recommended that online icebreakers be used to increase communication in a non-threatening manner. For instance, when childcare professionals attend training in a traditional classroom environment, they have time before class or during breaks to converse with other colleagues. In the online environment, Conrad and Donaldson (2004) encouraged online instructors to assign icebreakers so learners can get to know one another. Childcare professionals who are accommodators will need to have team activities, so they be involved in online activities with other colleagues. Pairing learners to team activities can help the learners “develop and exchange academic ideas” and for those new to the online experience it helps them feel more comfortable with the experience (Conrad & Donaldson, 2004, p. 60).

An assimilator is good at putting a wide range of information into logical order (Kolb, 1985). They are good at inductive reading and creating theoretical models (Kolb, 1985). Online instructors will want to consider implementing print medium into the course to meet the needs of assimilators. Print formats include textbooks, journal articles,
study guides, workbooks, course syllabi, case studies, and tests (Johnson, 2003). In addition, images may also be helpful for those assimilators in an online course. Examples of images are prints, charts, tables, illustrations, and pictures (Johnson, 2003). Online instructors need to be extremely careful in how they offer the print formats and images to assimilators, because online teachers should provide enough information that forces them to use their inductive reasoning.

Assimilators are good at viewing things from different perspectives, so online instructors need to present information that will encourage them make careful observations. Theory and practice need to be described in the online course for assimilators. Assimilators need situations where they are challenged to apply theories. Henke (2001) indicated that assimilators need detailed information on how and why something is supposed to work and then examples and illustrations that show how and why it works. Problem situations should be available, so that they have to explain why problems exist. Assimilators should be asked to provide reasons for a problem’s existence (Henke, 2001).

Online instructors need to guide discussion between assimilators to help them create relationships with one another. Creating relationships may include putting individuals together to work on a problem or a case study. Live virtual classrooms would also appeal to assimilators. Live virtual classrooms provide PowerPoint presentations with a lecture (Driscoll & Carliner, 2005). Assimilators need to be engaged with their learning. Conrad and Donaldson (2004) indicated that engaged learning could occur with
authentic activities. Examples of authentic activities are case studies, celebrity chat, team problem solving, pyramid, and social responsibility (Conrad & Donaldson, 2004).

A converger is best at dealing with people rather than things (Kolb, 1985). Online instructors may want to consider providing opportunities so learners can learn through finding single answers. Hands-on examples or role-playing can be used so the converger would have to determine the best solution (Henke, 2001). Henke (2001) further recommended that many facts need to be available online so that the converger can sort the facts and use their hypothetical reasoning to solve the problem.

Streaming media would be one way an instructor could deliver information so that convergers have a better understanding of the content. Streaming has been defined as “synchronized video, audio, graphics, and animation sent over the Internet or over campus networks, where personal computers play media streams directly” (Sircar, 2000, p. 54). Streaming media requires a streaming system, such as RealPlayer, to access the streaming media (Johnson, 2003). Instructional designers must not offer streaming media if the learners do not have a high speed Internet connection. Other instructional activities that may be appropriate for convergers are audio, video, and hands-on assignments. Audio can be used to provide narrative or dramatic examples and video can capture attention and convey information (Moore & Kearsley, 2005). Team activities would be another way to get convergers to communicate with one another. The following team activities develop by Conrad and Donaldson (2004) may be appropriate for convergers: (a) contest of the week, (b) dyad debate, (c) medieval shield, (d) peer partner critique, (e) structured chat, and (f) structured discussion.
A diverger is interested in people and is good at generating ideas. Online classrooms will need to get the divergers deeply involved with one another. Storytelling is one approach to allow learners to meet each other. Driscoll and Carliner (2005) indicated that storytelling is the recounting of events, incidents, and experiences. In the beginning of an online course, learners should be assigned to write a description about oneself to the class. Kolb (1985) classified divergers as brainstormers. The course should provide divergers with the ability to choose from multiple facts and ideas so that they have the opportunity to determine an answer (Henke, 2001).

Divergers need collaboration. Collaboration between the instructor and learner and among the learners should occur. Kearsley (2000) indicated that collaboration includes E-mail, discussion forums, and conferencing. Participation with divergers needs to be frequent. The instructor needs to provide assignments that require participation. Assignments would be participating in a chat, reflecting on a situation, or posting to a discussion message. The most important role of the instructor in an online class is to ensure high participation especially when individuals are new to the online environment or are busy with outside distractions, such as work (Kearsley, 2000). Group activities, simulations, and the use of listservs are a few additional activities that can be used to achieve interaction and participation.

Interaction and communication are extremely important in effective online training courses. "Passive learning is not acceptable in the distance learning environment" (Herring & Smaldino, 2005, p.2). Instructors must communicate and develop activities that encourage and enforce learners to participate. Communication
must be ongoing, regular, continuous, and easy for both the instructor and students (Johnson, 2003). Students should be given the opportunity to learn and to enhance their skills. Herring and Smaldino (2005) indicated that designs of online education courses should have a variety of presentation formats, such as using animation, text, visuals, audios, or video segments to address multiple learning characteristics. Further, Pratt and Palloff (1999) suggested that a variety of designs and approaches should be included to match learners with their learning styles.

Online courses must be useable and have appropriate aesthetics. Kearsley (2000) pointed out that online education must be easy for the user to recover from errors and the aesthetics must be organized and presented clearly. Hara and Kling (2000) reported that technical and pedagogical problems are the two kinds of problems that frustrate adult learners. Learners need guidance from an instructor who is familiar with the media and teaching strategies used (Moore & Kearsley, 2005). Online instruction activities must be relevant and useful. Instructors must manage the course effectively and provide feedback and attention to all students (Johnson, 2003). Learners must have a clear understanding of the expectations and the workload should be appropriate for the type of course and level of course (Kearsley, 2000).

Online Education

The researcher is defining online education as education that is delivered electronically through the Internet. Because online education aims to provide instruction through technology rather than in the classroom, many people use the terms distance education, distance learning, and e-learning. Distance education and distance learning
research and theories are typically in an academic setting. E-learning research and theories are usually conducted in the corporate setting. The researcher used the term online education as a synonym for distance education, distance learning, and e-learning.

Education and training are changing. The field of online education and training is an emerging one. As instructional theory moves from traditional views to constructivism, so does distance education theory. With the change in technology, online education is becoming a popular method of delivering education. Piskurich (2004) indicated that the demand of continuing education and training and the availability of information through technology have created demand for education and training, and all kinds of companies and organizations have emerged to address the demand.

Moore and Kearsley (1996) defined distance education as “planned learning that normally occurs in a different place from teaching and as a result requires special techniques of course design, special instructional techniques, special methods of communication by electronic and other technology, as well as special organizational and administrative arrangements” (p.2). Keegan (1996) proposed a definition that described the characteristics of distance education: (a) teacher and learner are separated, (b) student effort needs to be part of the educational experience, (c) media will include print, audio, and computer, and (d) communication needs to be two way between instructor and learner or between groups of learners. (p. 32)

In addition to distance education at traditional schools and universities, corporate and governmental organizations that spend large amounts of dollars, time, and resources on employee training have developed computer-delivered systems as cost-effective
alternative to classroom training. In the corporate setting, this type of training and educating is called e-learning. E-learning is training delivered through a computer including CD-ROM, or Internet. E-learning is a structured, purposeful use of electronic systems or computers in support of the learning process (Allen, 2003). The American Society of Training and Development (ASTD), a worldwide association for workplace learning and performance professionals, offers the following definition of e-learning in its Web-published glossary. E-learning covers a wide set of applications and processes such as Web-based learning, computer-based learning, virtual classrooms, and digital collaboration (ASTD, n.d.). It includes the delivery of content via internet, audio and videotape, satellite broadcast, interactive TV, and CD-ROM. Gillani (2003) described the e-learning environment as both stimulating and troublesome. “It is stimulating because technology gives teachers and learners the opportunity to expand and create the learning environment, however, it can be troublesome because without adequate knowledge and a systematic approach, e-learning environments may not fulfill its full potential. (p. 17)

Online education can deliver the best teachers’ knowledge and skills that can be used to teach students that are spread out over the world, at times that suit the students. Through online education, large number of students can be reached including many who formerly did not have opportunities to further their education (Hawkridge, 1999). Kearsley (2000) indicated that “the world of education will be very different: almost everyone will become lifelong learners continually engaged in some form of learning activity, either formal or casual. (p.2)
The effectiveness of online education, like traditional courses, is dependent upon many factors. Included in these are: learner characteristics, preparation and organization of the course, preparation of the teachers in the use of the delivery system, and teaching activities (Willis, 1992). The teacher is the key to a successful distance education program (Office of Technology Assessment, 1989). The teacher has the power to make the program succeed or to lead the program to failure. Driscoll and Carliner (2005) indicated “the role of the instructor is to encourage learners to discover principals, engage learners in dialog, and make information accessible to learners.” (p. 45)

Online instructors need to teach students how to be better online learners. Kearsley (2000) indicated that learners should understand how to use software correctly, manage time, how to conduct online searches, and how to communicate through email and discussions. Management of the online education environment needs to be planned and organized so that all learners have the opportunity to succeed. Herring and Smaldino (2005) suggested that online instructors must have the instruction planned, have the content outlined on how and when it will be delivered, and have the instructional methods relevant to the learners.

There are many advantages to online learning. Online education is a method of education, allowing students to work and study on their own time, at the place of their choice, and without face-to-face contact with a teacher (Bates, 2005). Salvador (2004) indicated that online learning offers freedom, convenience, and the ability to connect with colleagues all over the country. Individual learner benefits include reducing travel time
and costs, self-paced learning whereby learners can control their own schedule, and the convenience of studying any time and any place (Piskurich, 2004).

On the other hand, there are disadvantages to online learning. Learners need to determine if online education will meet their needs. First, learners that consider taking online courses must enroll in online courses that are reputable. Piskurich (2004) encouraged that learners only take legitimate online programs, especially those that relate to certificate or diploma, require comparable time for study and practice as is required in traditional face-to-face instruction. Second, students need to determine if certain types of classes are appropriate for their needs. Online education may not be the right fit for all learners. Herring and Smaldino (2005) stated “passive learning is not acceptable in the distance learning environment.” (p. 2)

One study examined online learners experience in the field of medicine. Piskurich (2004) indicated that it “isn’t easy to become an e-learner.” (p.2) The researcher found that there was strong evidence that successful e-learning requires a high commitment and drive as well as acceptance of responsibility to work alone. Comments that were reported by the online learners included:

(a) The first part of e-learning is learning to use the software. (b) Software is the hardest part. (c) Experience with the software will make you more comfortable with it. (d) Once you master the software, learning the content material comes easy. (e) Being comfortable with learning on your own makes it easier to succeed at e-learning. (f) Use the Web to help you learn to learn on your own. (g) Over time, you’ll not only become good at it but you won’t want to do without e-learning. (h) I found that e-learning provides me with easier, faster, and more up-to-date content than classrooms. (p. 2-5)

Online education settings can lead to distraction that would not happen in the traditional classroom setting. Effeh (1991) suggested that distractions, especially in the
home environment, could be detrimental to a student’s study time. Piskurich (2004) discussed five assumptions that may affect individuals learning online. The assumptions online learners sometimes have include:

(a) Online learning requires much less time than traditional educational methods, (b) course work does not need to be planned in advanced, because of the flexible time and schedules, (c) learners have the personal characteristics and motivation to study and practice in a highly independent mode, (d) learners have the necessary prerequisite skills and knowledge, and (e) all online learning programs are legitimate and reputable. (p. 7)

As the demand for continued childcare professional development training emerges, there has been a growth of literature about the variety of ways to deliver training. Alexander (1994) suggested in Young Children that training could be delivered through the computer. One example, she recommended for childcare professionals is for them to be subscribers to the America Tomorrow Leadership Information Service (ATLIS). ATLIS is a telecommunication network devoted to education-related issues. “As computers and programs become more affordable, accessible, and user-friendly, and as people entering the early childhood field are increasingly computer literate, the time is ripe for rapid advances in computer networking for professional development through ATLIS” (Alexander, 1994, p. 27).

There is no doubt that the childcare professional field has seen an increase with the use of technology. Neugebauer (2000) presented that childcare centers have embraced technology by communicating through E-mail, installing video cameras in classrooms, and using cellular phones. Listservs have also become popular in the childcare field. Listservs allow professionals to share experiences and knowledge about building new professional and personal relationships (Levin & Ostvold, 2002). In
addition, higher educational institutions are offering early childcare certificates and
diplomas online. In fact, Donohue (2003) provided the first directory of online early
childhood degree and certificate programs.

Education and training are changing in the childcare profession. However, there
have been limited studies on the quality and effectiveness of these online learning
experiences for early childhood students (Donohue, Fox, & LaBonte, 2004; LaBonte,
2003). “Technology is here to stay, so the question is not if we should use it, but rather,
what is, what can, and what should be, the role of technology in training, continuing
education, and professional development for childcare professionals” (Donohue, 2002, p.
3). While many educators have reported on the possibilities of online learning, the
research has not yet proven that this is an interest for childcare professionals or that
online training would meet their learning needs.

Childcare Professionals

Today, with nearly 12 million children under the age of five in some type of
childcare setting every week (National Association for Childcare Resource and Referral
Agencies [NACCRA], 2006), the need for high quality education and training
opportunities for childcare professionals continues to grow. The momentum behind the
movement of the importance of quality in early care and required training for childcare
professionals has been a hot topic since the early 1990s.

On November 7 and 8, 1990, Carnegie Corporation of New York and the
Rockefeller Brothers Fund brought together the nation’s top experts in the field of
childcare and early education (Copple, 1990). The purpose of the meetings was to
"explore the components of an effective, broad-scale, early childhood education preparation and training system that would increase the numbers being trained and also improve quality, access, and continuity of training, and to devise long- and short-term strategies for bringing this system about." (p. 2)

To help support the efforts of improving the quality of early childcare professionals, several national foundations (The Carnegie Foundation, The Ford Foundation, and Rockefeller Brothers fund) funded initiatives. These initiatives established organizations that would improve the quality of training for childcare professionals. The Center for Career Development in Early Care and Education at Wheelock College and the Professional Development Institute of the National Association for the Education of Young Children (NAEYC) were started to determine the condition of state quality efforts in licensing and professional development throughout the country. The Center for Career Development in 1993 indicated that there is a "hodgepodge of differing licensing standards, training requirements and training programs throughout the country" (Morgan & Costley, 2004. p.7). This hodgepodge has created difficulty in understanding how to have consistent training programs with individuals who work with young children throughout United States.

The Professional Development Institute of NAEYC established the requirements for content knowledge for early childcare professionals (NAEYC, 1993). The first principals that were developed that all early childcare professionals must be able to know and be able to do included:

1. Demonstrate an understanding of child development and be able to apply the knowledge in practice.
2. Observe and assess children's behavior in planning and individualizing teaching practices and curriculum.
3. Establish and maintain a safe and healthy environment for children.
4. Plan and implement developmentally appropriate curriculum that advances all areas of children's learning and development, including social, emotional, intellectual, and physical.
5. Establish supportive relationships with children and implement developmentally appropriate techniques of guidance and group management.
6. Establish and maintain positive and productive relationships with family.
7. Support the development and learning of individual children. (p. 2)

From 1992 to 2002, with the involvement of national organizations and state and local agencies, statewide initiatives addressing professional development have been underway in almost all 50 states (Morgan & Costley, 2004). Further, Morgan and Costley indicated that NAEYC and Center for Career Development in Early Care and Education recommended the following policies to state early childcare agencies. The recommended policies include:

1. Demonstrate an understanding of child development and be able to apply the knowledge in practice.
2. Raise training and education standards for practitioners.
3. Monitor the coherence and quality of the training provided at all levels of professional development.
4. Develop financial incentives and rewards for practitioners who enter and complete training and education programs; and for the programs in which they work.
5. Increase access to training and education leading to professional credentials and degrees.
6. Provide higher levels of state funding for higher quality childcare. (p. 7)

Since the meeting in 1990, there have been studies that have examined training and quality of care. A 1993 study conducted by High/Scope Educational Foundation investigated the High/Scope model for improving the quality of early childhood programs and enhancing young children's development and the role of in-service training in improving early childhood program quality (Epstein, 1993). The data that were analyzed
for the study came from 793 participants, surveyed a random sample of 203 endorsed trainers, interviewed and observed 244 High/Scope teachers and 122 teachers not in the High Scope setting, and assessed 97 children in High Scope program and 103 children in other programs. It was found that in-service training contributed significantly to program quality and children’s development. Teachers’ formal education, in-service training, and their experiences contributed significantly to program quality (Epstein, 1993). This supports Dwyer, Chait, and McKee’s (2000) findings that for a high quality childcare environment, “teacher expertise” is considered to be “the crucial ingredient.” (p. 6)

Other studies have identified childcare professional’s specialized training and education as one of the strongest predictors of childcare quality (Arnett, 1989; Cost, Quality, & Child Outcomes Study Team, 1995). In fact, Cost, Quality, and Child Outcomes Study Team (1995) indicated that childcare advocates have strengthened their commitment to improving professional development for childcare professionals.

Training and education in childcare have an effect in the quality of care, but there is no consistency amongst states in the requirements. State agencies are the most influential determiners setters of training requirements because their regulatory systems are backed up by legal enforcement. This can become a problem in the profession, because of the wide differences within the state regulations that govern childcare professionals’ preparation and continuing education (Azer & Bowie, 2000). These inconsistent standards are “situated within political, economic, regulatory, and ideological frameworks that [can] constrain innovation” (Horm-Wingerd, Hyson, & Karp, 2001, p. 10).
Copple (1990) argued that a dichotomy exists in the division of responsibility between state agencies. He pointed out the division exists because state departments of education set standards for certification of teachers in public schools and state social service agencies or health departments determine standards for personnel in childcare centers and preschools (p. 3). For instance, all 50 states require kindergarten teachers to have a minimum of a bachelor’s degree, and some states also require endorsements or certifications that are specifically related to the early childhood field (Bureau of Labor Statistics, 2002). Only 18 states require that teachers in early childhood settings undergo any training before they work in a childcare setting (Ackerman, 2004).

To prepare childcare professionals for the profession, organizations have advocated that states require pre-service and annual training. Ninety-seven percent of states have a specific number of hours each year childcare professionals have to spend in training (Smith, 2006). Since 1999, eight states have increased the minimum pre-service training requirements for teachers in private early childcare settings (Ackerman, 2004). Further, 11 states have increased the number of ongoing training hours that early childcare professionals must complete on an annual basis, ranging between 6 and 30 hours a year (LeMoine, 2003).

Many other states have created professional development systems for childcare professionals and have implemented educational programs. These efforts are vital to improving childcare nationwide because they represent an investment in the childcare work force. An important point is that there are no states that have the same rules and regulations when it comes to the types of training childcare professionals should receive.
States vary considerably in the methods and rules of training childcare professionals (American Academy of Pediatrics, 2002). Appendix A outlines each state's annual required training hours for center directors, center teachers, family home care providers, and home care providers.

Opportunities for continued training and education need to be available. Munton, Mooney, and Rowland (1996) reported that ongoing training is necessary for continuous quality improvements. Even though there is not a nationwide requirement for professional development training, research reports found that training is worthwhile for quality care. Researchers have shown that state childcare policies such as licensing standards can affect the quality of early care and education programs (Helburn & Howes, 1996). A study that was conducted found that after 20 hours of training, childcare professionals improved the quality of care giving skills and engaged in more activities that enhanced the social development of children (Smith, 2006).

Childcare Training

The National Association for Childcare Resource and Referral Agencies (NACCRA) reported in their 2006 annual conference that most states (97%) are requiring a specific number of hourly requirements. The number of required hours that are required by states range from 5 to 20. For example, the state of Iowa enhanced the early childhood knowledge by requiring professional development training for childcare professionals. Training requirements for the state of Iowa became rule in November 1, 1998 (Iowa Department of Human Services [IDHS], 2003). First year center directors, on-site supervisors, and staff that work 20 hours or more a week are required to take ten
contact hours of training from one or more of the following areas: child development, guidance and discipline, developmentally appropriate practices, nutrition, health and safety, communication skills, professionalism, business practices, and cross-cultural competences. After their first year of employment, all staff that are employed more than 20 hours a week need to have 20 hours of training annually (IDHS, 2003).

NACCRA identified whom they are training. Smith (2006) reported that

1. More than 97% are female.
2. Forty-one percent have their own children.
3. Ten percent are single moms.
4. Two out of 5 childcare professionals are self-employed.
5. Most of the childcare professionals have a high school diploma.
6. The average earning is $7.86 per hour.
7. Childcare professionals do not have health insurance.
8. There is a 30% plus turnover rate each year. (p. 4-8)

An additional study conducted by the School of Family Studies and Human Services at Kansas State University reported that childcare professionals in Kansas have a wide range of educational levels. The study showed that childcare professionals that had a high school diploma include 48.3%, followed by 23% had an Associate Degree, 10% had a Bachelors Degree, and 1.6% had a Masters Degree (Kansas Association for the Education of Young Children [KAECY], 2002).

Another area that needs to be addressed is how childcare professionals receive training. Smith (2006) indicated that 92% of childcare professionals received training from their local Childcare Resource and Referral Agency. The types of training programs that childcare professionals enrolled in include (a) licensing training (82%), (b) continuing education (53%), (c) child development associate (59%), and (d) academic credit (40%). (p. 9)
The Iowa Early Care and Education Professional Development Project with support from a federal Head Start grant conducted a survey of Iowa early care and education practitioners, including program and family home practitioners, regarding their training needs. Childcare professionals that were in the databases of five Iowa Child Care Resource and Referral services delivery areas, all Iowa Head Start Programs, and all Iowa Title I programs (Iowa State University Extension, 2001). A total of 456 childcare professionals returned the survey for a 48% response rate. It was reported that on-site training, offered in the evening, was the most desirable time and format for training and was preferred by more than 90% of directors (Iowa State University Extension, 2001).

Training programs that received the highest ratings for positive effect reported were Childcare Resource and Referral agencies (95%), Iowa State University Extension (94%), Area Education Agency (94%), and on-site from program staff (94%); (Iowa State University Extension, 2001).

On-site training (95%), workshops (75%), and videos (50%) were reported as the most highly preferred training formats and training and books (2%), newsletters (5%), and Internet (15%) were reported as the least preferred programs (Iowa State University Extension, 2001). The Iowa State University Extension findings were different than the findings of the Kansas State University findings. The School of Family Studies and Human Services at Kansas State University reported that childcare professionals want to get training by classroom setting (face-to-face); (22.1%), on-line courses (14.2%), self-directed study (13.6%), independent study (13.0%), correspondence courses (12.7%), and satellite programs (9.2%); (KAECY, 2002). Two research studies have asked their
childcare professionals if online training is an interest for them. The Iowa childcare professionals reported that online training was less preferred (15%). However, the childcare professionals in Kansas reported that they wanted to receive online training (14.2%). Conclusions can be drawn that there is need for further investigation to determine whether or not childcare professionals are willing to participate in Internet training programs.

**Training Barriers**

There are many barriers that childcare professionals struggle with to receive the training for professional growth. Whitebook (1999) reported that there is an unfortunate reality that the childcare profession offers low wages, few job benefits, and many barriers to professional advancement. Barriers have been consistent for many years with childcare professional development training. Copple (1990) reported that the common obstacles that make training difficult include the cost of class, the time and energy to pursue training, the fear and lack of self-confidence, and the irrelevant or low quality of training. Bailey and Osborne (1994) indicated that barriers typically include inconvenient scheduling, prohibitive costs, and finding childcare for one’s own children. These types of barriers leave many childcare professionals unable to attend training.

The childcare profession pays at the minimum salaries, ranging from $6.25 per hour for childcare works in Louisiana to $12.61 per hour for preschool teachers in the District of Columbia (Laverty, Siepak, Burton, Whitebook, & Bellm, 2002). Because of the inadequate pay, the rate of turnover for workers is high. Researchers have reported that turnover averages around one third each year (Whitebook, Sakai, Gerber, & Howes,
Another study conducted by Laverty et al. (2002) reported that turnover of childcare professionals was between 20% and 60%. Given the average salaries of childcare professionals, Ackerman (2004) questioned why college graduates with teaching certificates “would willingly enter-and remain-in the field.” (p. 326)

Another barrier to childcare professionals training is the age of the workforce (Ackerman, 2004). The average childcare professional is 39 years old (Saluja, Early, & Clifford, 2002). It can be assumed that some of these professionals in this age range have children of their own. In 2000, a study revealed that childcare professionals that had their own children were less likely to perceive continuing education in a positive light, compared to those without their own children (Dowswell, Bradshaw, & Hewison, 2000). Further, Horn and Carroll (1996) indicated that childcare professionals reported that work responsibilities and family often make it difficult to find enough time to attend training.

A study in 2002 was conducted to describe one state’s childcare workforce, their beliefs about pre-service training, education and compensation, and the barriers to accessing professional development (Gable & Halliburton, 2003). It was found that inconvenient scheduling received the highest importance rating for providers not attending training (Gable & Halliburton, 2003).

Childcare training programs across the United States have found that one of the biggest challenges with qualifications of childcare professionals is the amount of time and energy they would need to dedicate (Early & Winton, 2001). Ackerman (2004) indicated that even if states offer incentives for training, such as partial scholarships, they “may not be sufficient to induce teachers to attend classes after working all day in such
an energy-demanding job, particularly if their wages will not increase even after
obtaining additional education or credentials.” (p. 329)

Kansas’s childcare professionals identified a list of reasons why training is
difficult to attend (KAEYC, 2002). The respondents were asked to identify one reason
why training is difficult to attend. The majority of the respondents replied not enough
time (14.9%) followed by home or job responsibilities (14.1%); (KAEYC, 2002). Table 3
summarizes childcare professionals training barriers in the state of Kansas.

Those research studies are consistent with the findings of the Iowa Early Care and
Education Professional Development study. They reported that training that does not
increase earnings (42%), the cost of training (40%), inconvenient time of training (38%),
distance or location of course (38%), training that does not advance career (37%), the
difficulty locating appropriate training (23%), training topics not relevant (21%), and
poor quality of training or the trainer (14%) were rated as barriers (Iowa State University
Extension, 2001). Further, they reported that the following barriers may hinder the
effectiveness of training: (a) lack of release time and unavailability of substitutes for
practitioners to participate in training, (b) absence of wage incentives for practitioners
who complete training, and (c) high turnover rates among practitioners (Iowa State
University Extension, 2001).
Table 3

*Kansas's Childcare Professionals Training Barriers*

<table>
<thead>
<tr>
<th>Reason</th>
<th>Number of Respondents</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not enough time</td>
<td>345</td>
<td>14.9</td>
</tr>
<tr>
<td>Home/Job responsibilities</td>
<td>328</td>
<td>14.1</td>
</tr>
<tr>
<td>Cost, including tuition, books, childcare</td>
<td>259</td>
<td>11.2</td>
</tr>
<tr>
<td>Courses aren't scheduled when I can attend</td>
<td>250</td>
<td>10.8</td>
</tr>
<tr>
<td>Amount of time required to complete training</td>
<td>198</td>
<td>8.5</td>
</tr>
<tr>
<td>Courses I want don’t seem to be available</td>
<td>159</td>
<td>6.8</td>
</tr>
<tr>
<td>No childcare</td>
<td>115</td>
<td>5.0</td>
</tr>
<tr>
<td>Not enough energy</td>
<td>106</td>
<td>4.6</td>
</tr>
<tr>
<td>No way to get credit or degree</td>
<td>80</td>
<td>3.4</td>
</tr>
<tr>
<td>Don't enjoy studying</td>
<td>72</td>
<td>3.1</td>
</tr>
<tr>
<td>Too much red tape in getting enrolled</td>
<td>69</td>
<td>3.0</td>
</tr>
<tr>
<td>Tired of school, tired of classrooms</td>
<td>63</td>
<td>2.7</td>
</tr>
<tr>
<td>Friends or family don't like the idea</td>
<td>59</td>
<td>2.5</td>
</tr>
<tr>
<td>No transportation</td>
<td>54</td>
<td>2.3</td>
</tr>
<tr>
<td>Don't meet requirements to begin program</td>
<td>50</td>
<td>2.2</td>
</tr>
<tr>
<td>Other</td>
<td>43</td>
<td>1.9</td>
</tr>
<tr>
<td>Hesitate to seem too ambitious</td>
<td>31</td>
<td>1.3</td>
</tr>
<tr>
<td>Low grades in past, not confident of my ability</td>
<td>28</td>
<td>1.2</td>
</tr>
<tr>
<td>No response/Not a problem</td>
<td>13</td>
<td>0.6</td>
</tr>
<tr>
<td>Totals</td>
<td>2322</td>
<td>100%</td>
</tr>
</tbody>
</table>


Another training barrier that has been reported is the time in which the training is offered. Training programs will not mean much if childcare professionals cannot access classes (Ackerman, 2004). The Iowa State University Extension (2001) study reported evening training times are more highly preferred. Eight-five percent of the directors
reported that it is "very or somewhat likely" their childcare professionals would participate in evening training (Iowa State University Extension, 2001). The KAECY (2002) study resembled the Iowa State University Extension study in the fact that evening training (50%) is preferred followed by weekend training (40%).

Language, cultural backgrounds, educational backgrounds, and the location of training have been reported as barriers to enrolling in training. Training instructors should determine where childcare professionals are in terms of language, previous educational experiences, and proximity to the training programs (Ackerman, 2004). Some states have started to provide training programs in a variety of languages, because of the diversity of childcare professionals and the children they serve. For example, California and New Mexico offer training courses in Spanish, Navajo, and Chinese (Ackerman, 2004). Training programs that are offered in a variety of languages reach a more diverse staff, benefit the cultural diversity of children, and establish stronger relationships with families (Whitebook, et al., 2001). The location of the training programs is important because childcare professionals must be able to reach the training programs. Training programs will mean very little if childcare professionals cannot access classes because of geographic location and if the training requirements are not understood and easy to enroll (Ackerman, 2004).
Summary

The literature review presents information that gives the reader an understanding of learning styles, online education, training requirements of childcare professionals, and barriers that childcare professionals encounter with training. Professional development for childcare professionals has proven to be a necessity when developing and teaching our future generations. The unfortunate reality is that childcare professionals are strapped for the required time, money, resources, and energy to be able to receive training to further their quality of care. If training is a requirement and an important component in providing opportunities for our children, then training programs need to consider other options of training. As presented in this literature review, online education may be a possibility that could help childcare professionals find time to complete training. Online training can be taken at anytime and at any location. Online education may also save the high turn over rates of childcare professionals because they can complete training courses on their own time.

Not every childcare professional will succeed in every learning setting. However, many childcare professionals have the potential to succeed. The first step in training childcare professionals online is to analyze the learners. The next chapter outlines the methodology for undergoing such a study.
CHAPTER III

METHODOLOGY

This study was based on using survey research collecting quantitative and qualitative data. This study answered the research questions and developed an online consideration model that online training instructors should examine before offering training courses to childcare professionals. Using a survey for quantitative data and open-ended questions for qualitative data allowed the researcher to identify characteristics of childcare professionals and formulate recommendations for online professional development.

Research Questions

To identify childcare professionals’ online learning characteristics, a study was conducted to get an understanding of childcare professionals. The following supporting questions were posed:

1. What are the backgrounds, educational levels, technology experiences, income levels, and the ages of childcare professionals?
2. What are childcare professionals perceived attitudes towards Internet learning?
3. What types of learning styles are present with childcare professionals?
4. What barriers to participate are perceived to exist for childcare professionals who enroll in online professional development?
Research Design

The study was non-experimental and descriptive in nature. The data for this study were both quantitative and qualitative. Using the quantitative data and three open-ended questions for qualitative data, the researcher described the considerations for effective online instruction for childcare professionals. A survey was developed in an effort to identify childcare professionals' learning styles, demographic characteristics, perceived attitudes towards Internet learning, and online professional development participation barriers. Surveys is an appropriate type of instrument to use when the study is non-experimental, as it provides a sense of privacy for the participants and it minimizes sampling error (Salant & Dillman, 1994).

Sample

The researcher selected a sample that suited the purpose of the study. The sample of the study was purposefully chosen because it provided the researcher with a group of childcare professionals who have completed an online training program. Purposeful sampling was the technique the researcher used. Patton (2002) indicated that purposive sampling allows the researcher to purposely select a group of individuals that will give the best information. Further, Stake (2000) advised that researchers should choose groups they believe they can learn the most from.

Childcare professionals who completed a one-hour online professional development course by the National Program for Playground Safety served as the sample for this study. All childcare professionals who were enrolled during the months from March 2006 to February 2007 (156 in number) were solicited to participate in this study.
The training course that the childcare professionals completed was called *Playground Supervision for Childcare Providers*.

Representation of childcare professionals who completed the professional development lived in five time zones in the continental United States (eastern, central, mountain, Pacific, and Alaska). The participants who completed the survey represented a subsample of childcare professionals who have completed an online professional development course. Subsample is used because it is a term that represents the larger population (Lodico, Spaulding, & Voegtle, 2006). The population in this study was childcare professionals who had completed an online professional development course. Fifty-three participants participated in the study that lived in four of the time zones (eastern, central, Pacific, and Alaska). The data that was coded for the study was from 53 participants.

*Protection of Human Rights*

The Institutional Review Board (IRB) at the University of Northern Iowa approved the research application (Appendix B). Participation in the study was voluntary and participants were free to withdraw at any time in the study. The purpose and duration of the study was explained to the participants in the initial E-mail. The benefits of this study and a better understanding of childcare professionals learning characteristics in order to deliver effective online professional development was explained to the participants. Anonymity and confidentiality was ensured. All data was destroyed at the conclusion of the study. Privacy and confidentiality was given to all participants to
ensure their freedom from harm or embarrassment. No participants will be recognized on an individual basis when the results of the research are published.

**Procedures for Questionnaire Administration**

An E-mail (Appendix C) was sent to all the childcare professionals who were enrolled in the course during the months of March 2006 to February 2007 requesting their participation in the survey. The E-mail was sent on March 6, 2007. The E-mail informed the childcare professionals about the study and provided them with a direct link to access the survey. The participants were assured confidentiality of their responses and identity. Twenty-one participants completed the survey. The researcher sent reminder E-mails on March 19 and March 28 seeking for participation for those individuals who had not completed the survey (Appendix D). Participants were asked to complete the online survey by March 30, 2007. From March 19 to March 30, an additional 10 participants completed the survey. On March 30, 20% of the sample responded to the survey.

The researcher extended the deadline to April 26, 2007. On April 11, an E-mail was sent to the participants who had not completed the survey asking for their participation (Appendix E). Twenty participants completed the survey. The researcher sent reminder E-mails on April 18 and April 23 seeking for participation for those individuals who had not completed the survey. Two participants completed the survey.

The online survey was hosted on the University of Northern Iowa’s Instructional Technology Server (ITS). The ITS online survey was designed to collect data anonymously. The online survey was submitted anonymous unless the participant responded to the questions that asked for their E-mail address. The survey had a question
that asked the participants to provide their E-mail address. The researcher had thought she may need clarification or further explanation about a comment they wrote in the open-ended questions. The online survey question read:

If you would be willing to further discuss online training for childcare professionals with the researcher or would be willing to allow the researcher to contact you to further explain your response, please provide your E-mail address. This is voluntary and is not required. Your e-mail address will not be used in any other way and will be destroyed immediately after the data is collected.

The researcher used three of the participants E-mails to ask them to further explain their comment, because the comment was vague and the researcher wanted to correctly interpret their response. All three participants responded within a week.

Description of Instrument

The online survey that was used for this research was based on a combination of reliable instruments developed through the literature review. The survey instrument was divided into four parts (Appendix F). The first part of the survey instrument was to identify childcare professionals learning styles and used Kolb’s Learning-Style Inventory (LSI). After the researcher reviewed different learning style instruments, the researcher decided to use Kolb’s Learning-Style Inventory, because it was easy to read and to understand and completion time of the instrument took approximately five minutes.

The second part of the instrument was designed to understand childcare professionals perceived attitudes towards Internet learning. Liaw’s (2002) Web Attitude Scale (WAS) was used to determine Internet attitudes. The researcher reviewed several computer attitude surveys, computer technology surveys, and computer anxiety scales. The researcher decided to use Liaw’s (2002) WAS because the instrument asked
questions that related to the cognitive and behavioral attitudes of an individual's beliefs of the Internet. In addition, the scale was easy to read and completion time took approximately 10 minutes.

The third part of the survey instrument was to answer the questions that related to training barriers that are perceived to exist for childcare professionals who enroll in online professional development. The field of distance education needs qualitative research as it seeks to develop theory and can do so by using qualitative methods (Lockee, Burton, & Cross, 2001; McIsaac & Gunawardena, 1996). Three opened-ended questions were created and included in the middle of the survey to allow respondents to provide in-depth answers. Stake (2000) indicated that collecting open-ended questions allows the researcher to take a holistic view of the phenomenon and make an interpretation of the data.

The fourth part of the survey described the childcare professionals' demographic characteristics. More specifically, information was gathered to determine backgrounds, age, educational levels, technology experiences, job responsibilities, and income levels. The demographic information helped describe the characteristics of childcare professionals. The demographic information guided the researcher in determining any relationships that existed between the learning styles and characteristics of the childcare professional.

**Validation of the Instrumentation**

Content validity of the instrument was established by the literature review. The researcher used Kolb's Learning-Style Inventory (KLSI) to determine learning styles for
child care professionals. Kolb's Learning-Style Instrument was used because it has been the longest used and is well represented in the literature reviewed. In addition, the literature reviewed highlighted that Kolb's Learning-Style Inventory had strong validity (Cornwell, Manfredo, & Dunlap, 1991) and the Training Resource Group (1995) rated the Kolb's Learning-Style Instrument as reliable. For these reasons, it was chosen as the basis for determining learning styles and applying learning styles to online professional development for childcare professionals. The instrument contained 12 sentences and each sentence had four endings. The researcher used Kolb's method for determining learning styles (Appendix G).

The researcher also used Liaw's (2001) Web Attitude Scale because it related to the research question in regards to perceived childcare professional's attitudes towards Internet learning. The results of the study were limited to the population studied. The population was only generalized within the context of childcare professionals who completed an online professional development course that was offered by the National Program for Playground Safety.

Analysis of the Data

The data analyses of this study were expressed using a variety of methods. Hatch (2002) described the data analysis process as a "systematic search for meaning" (p. 148). The goal of data analysis is to communicate understanding (Merriam, 1998). In order for the researcher to describe considerations that instructors and instructional designers need to address for effective delivery and development of online training courses for childcare professionals, the data was analyzed using both quantitative and qualitative methodology.
Quantitative Data Methodology

The quantitative data analyses of this study were analyzed using the Statistical Package for the Social Sciences (SPSS) software program. In determining the statistics to be used, each research question was explored to determine which statistics would answer the questions. To determine participant backgrounds, educational levels, technology experiences, income levels, and the ages of childcare professionals, the researcher used quantitative methods including mean, median, frequency counts, cross tabulations, and chi-square. Learning styles were determined by following Kolb’s Learning Style Instrument process (Appendix G). Cross tabulations were reported to investigate childcare professional’s job titles and salaries, and education levels and instructional activity preferences.

Chi-square were reported to investigate those childcare professionals who are convergers, divergers, assimilators, and accommodators to the potential of the Internet as a learning tool. A chi-square was also used to report the differences between childcare professionals who work out of their home, in a childcare center, or another setting to their perceived learning styles. Validity of the data was strengthened when another researcher independently analyzed the data.

Qualitative Data Methodology

Qualitative data was gathered to get a rich description of the phenomenon being studied. Eisner (1991) explained, “qualitative thought is ubiquitous in human affairs. It is not some exotic form of doing or making, but a pervasive aspect of daily life. For that reason and for others it is useful” (p. 5). Qualitative methodology is appropriate where:
(a) Detailed, in-depth information was needed about certain programs;
(b) The focus on diversity among, idiosyncrasies of, and unique qualities exhibited by individuals; and
(c) The intent was to understand the program theory—that was, the staff members' (and the participants') beliefs as to the nature of the problem they are addressing and how their actions will lead to desired outcomes (Patton, 2002, p. 163).

In this study, findings of the open-ended questions yielded common responses that were expressed in the childcare professional's own writings. Patton (2002) stated that the purpose of qualitative analysis in research was to "gather comprehensive, systematic, and in-depth information about the case at hand" (p. 447). The data process of the open-ended survey questions took place as soon as the online surveys were submitted. This approach was consistent with the literature in qualitative research that suggested that data analysis should be ongoing, taking place at the same time as data collection (Bogdan & Biklen, 2003; Merriam, 1998).

The collection, analysis, and interpretation of the data during the study were gathered with the participants' responses. The first step the researcher completed was reading each response from each participant. The researcher then used whole-text analysis methodology to analyze the data. Whole-text analysis forced the researcher "to make judgment about the meaning of contiguous blocks of text" (Denzin & Lincoln, 2003, p. 274).

Whole-text analysis was conducted through coding the data. The survey responses from the participants were coded according to emerging subcategories, categories, and themes (Denzin & Lincoln, 2003). Coding helped the researcher discover
relationships and themes and put them into categories (Hatch, 2002). Codes were developed by the researcher to provide a detailed picture of the phenomena that was studied.

The second step in the analysis was to find common threads. Individual codes, words, and phrases were analyzed and sorted to examine both individual and collect themes. The constant comparative method (Glaser & Strauss, 1967) of data interpretation and analysis were used. The data was analyzed to determine themes, categories, relationships, and other circumstances that may have made the difference with the childcare professional’s attitudes towards online learning or barriers with professional development.

The third step in the analysis phase included finding unique responses. The data analysis of the qualitative questions provided opportunities for the researcher to seek clarifications and dig deeper into the professional development barriers and perceived attitudes of online professional development that were addressed by the participants.

The last step included the researcher identifying unique responses and common themes by different groups. The researcher used information gathered in the quantitative data to classify the respondents. For example, the researcher coded the respondents by age, the frequency of how often they access the Internet, and learning styles. Categories and subcategories were examined, reviewed, and reexamined until an understanding of the participants emerged. The qualitative techniques gave the participants an opportunity to communicate their thoughts and feelings through writing. The open-ended responses contributed to identifying information and beliefs that may have otherwise been missed in
the quantitative methodology. The researcher discovered similar motivation themes that emerged from the different groups. In addition, the researcher found common themes that became apparent as to barriers for online professional development. The researcher developed a system by which the data was organized, coded, and categorized, so the researcher could prepare for the analyses (Appendix H). Validity of the qualitative research was established when another researcher independently reviewed the statements made by the participants. The themes that emerged from the analyses were similar. The researchers discussed the emerging themes and determined what categories should be highlighted based on the themes.

Summary

This research study examined considerations that online training instructors need to consider before offering professional development to child care professionals. This chapter discussed the choice of methodology, sample selection, instrument and survey, data collection, and analysis methods. The next chapters will present findings of the online survey, namely, the characteristics of childcare professionals. In addition, the researcher will provide a discussion of the data analysis and implications of the study.
CHAPTER IV
RESULTS

This study was designed to investigate considerations that online training instructors should examine before offering online professional development courses to childcare professionals. Both quantitative and qualitative data were gathered through an online survey. The researcher identified characteristics of childcare professionals and formulated recommendations for online professional development programs. This chapter presents the study findings based on the analyses of the data.

The chapter has been organized into four sections to report the findings. The sections include (a) characteristics of the sample, (b) attitudes and motivation towards Internet learning, (c) types of learning styles, and (d) participation barriers. The research questions that guided this study included:

1. What are the backgrounds, educational levels, technology experiences, income levels, and the ages of childcare professionals?

2. What are childcare professionals perceived attitudes towards Internet learning?

3. What types of learning styles are present with childcare professionals?

4. What barriers to participate are perceived to exist for childcare professionals who enroll in online professional development?
Characteristics of Sample

The research question that this section examined was: What are the backgrounds, education levels, technology experiences, income levels, and the ages of childcare professionals? One hundred sixty-six invitations to participate in this study were e-mailed to childcare professionals who had completed a one-hour online professional development course about supervision offered by the National Program for Playground Safety. Of the original 166 invitations, 12 email messages were undeliverable, 3 individuals declined to participate, and 98 individuals did not respond. The final sample consisted of the 53 childcare professionals (32%) who completed the study.

Childcare professionals who participated in the survey lived in five time zones (eastern, central, mountain, Pacific, and Alaska) in the United States. Sixty-seven percent of the childcare professionals who completed the survey represented the central time zone, 29% were from the eastern time zone, 3% were from the Pacific time zone, 5% were from the Alaska, and no participants from the mountain and Hawaii time zones completed the survey.

The time zones that were represented in the study are comparable to the time zones of childcare professionals who completed the online professional development course. Table 4 shows the time zones of childcare professionals who have completed the online professional development course and those who participated in the study’s survey.
Table 4  

*Time Zone Representation*

<table>
<thead>
<tr>
<th>Time Zone</th>
<th>Professionals Who Completed Course</th>
<th>Professionals Who Completed Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central</td>
<td>53%</td>
<td>67%</td>
</tr>
<tr>
<td>Eastern</td>
<td>39%</td>
<td>29%</td>
</tr>
<tr>
<td>Pacific</td>
<td>7%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Alaska</td>
<td>.5%</td>
<td>.5%</td>
</tr>
<tr>
<td>Mountain</td>
<td>.5%</td>
<td>0%</td>
</tr>
</tbody>
</table>

As can be seen in Table 4 the central time zone had slightly higher representation. Overall, the sample was represented in the study. The literature reviewed highlighted that the majority of childcare professionals are women. Similar findings were discovered in this study. Forty-six (85%) of the participants who returned the survey were females and 7 (15%) were males. This gender comparison was also similar to the comparison of those who completed the online professional development course, 93% were females and 7% were males.

The age range of the participants was from 21 to over 56. The mean age category was 36-45 years (41%). When asked where respondents presently work, 43% indicated they were employed at a childcare center, 24% worked in home or family childcare, 7% were employed by headstart or a Pre-K program, and 20% responded other. Other
settings included consultant, summer program, licensing consultant, lab school teacher, and health consultant. Fifty-two percent were employed in a nonprofit center, followed by private center (13%), public center (11%), and for-profit center (4%). Table 5 presents the distribution of the childcare professionals’ employment and their age.

Table 5

*Ages of Childcare Professionals and Setting Where They Work*

<table>
<thead>
<tr>
<th>Ages</th>
<th>Childcare Center n</th>
<th>Home/ Family PreK n</th>
<th>Head Start/ Other n</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 and under</td>
<td>5 (19%)</td>
<td>5 (35%)</td>
<td>1 (33%)</td>
</tr>
<tr>
<td>36-45</td>
<td>12 (46%)</td>
<td>6 (43%)</td>
<td>2 (66%)</td>
</tr>
<tr>
<td>46-55</td>
<td>6 (23%)</td>
<td>2 (14%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>56 years and above</td>
<td>3 (12%)</td>
<td>1 (8%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Total</td>
<td>26 (100%)</td>
<td>14 (100%)</td>
<td>3 (100%)</td>
</tr>
</tbody>
</table>

As can be seen, the majority of the participants were between the ages of 36 to 45. In addition, the largest group worked in a nonprofit childcare center. Close to 80% of childcare professionals that worked in either a home or family childcare setting were under the age of 45.

Childcare professionals who responded to the survey reported the number of years childcare professionals had worked in their current job. The mean category of the
number of years that they had worked in their current job was 6 to 10 years. Thirty percent of childcare professionals had worked between 6 to 10 years; 28% had worked between 3 to 5 years; 19% had worked between 11 to 20 years; 12% had worked between 1 to 2 years; 7% had worked over 21 years; and 4% had worked less than a year. The findings show that over 56% of the childcare professionals in this study, who have completed a professional development course, have been in their current job for over five years.

Another interesting finding was that over half of the participants (55%) have worked more than 10 years in early childhood. The study also found that less than 20% have been in early childcare for less than five years. The mean category of the number of years worked in early childhood was 6 to 10 years. Table 6 provides a description of the total number of years each participant has worked in early childcare. The study revealed that 40% had worked between 11 to 20 years, 26% had worked between 6 to 10 years, 15% had worked over 21 years, 13% had worked between 3 to 5 years, and 6% had worked less than 3 years. Thus, an intriguing finding was that there has not been a high turnover with this sample. This was a unique finding as compared to what was presented in the literature review, because other studies reviewed showed that there was a high turnover rate with childcare professionals.
Table 6

Childcare Professional’s Total Years of Service in Early Childcare

<table>
<thead>
<tr>
<th>Years of Service</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 3 years</td>
<td>3</td>
<td>6%</td>
</tr>
<tr>
<td>3-5 years</td>
<td>7</td>
<td>13%</td>
</tr>
<tr>
<td>6-10 years</td>
<td>14</td>
<td>26%</td>
</tr>
<tr>
<td>11-20 years</td>
<td>21</td>
<td>40%</td>
</tr>
<tr>
<td>21 years and above</td>
<td>8</td>
<td>15%</td>
</tr>
</tbody>
</table>

To get a clearer understanding of the backgrounds of the participants, the study identified current education levels. Seven individuals (13%) indicated that they held a master’s degree. Forty percent indicated that they held a bachelor’s degree followed by 28% with an associate degree. Seventeen percent of the participants responded that they had a high school or GED degree. Overall, the study showed that these participants were educated with 83% holding a degree in higher education. The findings in the study were extremely different than the findings of a study conducted by the Kansas Association for the Education of Young Children (KAEYC). The results were reversed in the fact that KAEYC studied found that 48% of childcare professionals in the state of Kansas have a high school diploma and only 11% had either a Bachelors or Masters degree.

Childcare professionals in this study acknowledged the types of instructional learning activities that would be most helpful for them in an online professional
development course. The participants could choose numerous instructional learning activities. Sixty-eight percent of the participants indicated that pictures and explanations would be the most helpful, 64% responded with video instruction, 55% selected handouts, 43% reported that they needed conversations with other childcare professionals, and 32% indicated assignments. Table 7 reports a comparison of the childcare professional’s educational levels and their instructional activity preferences.

Table 7

*Instructional Activity Preferences and Educational Levels*

<table>
<thead>
<tr>
<th>Instructional Activity Preferences</th>
<th>High School or GED</th>
<th>Associate Degree</th>
<th>Bachelor’s Degree</th>
<th>Master’s Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Pictures and Explanations</td>
<td>6</td>
<td>(17%)</td>
<td>9</td>
<td>(25%)</td>
</tr>
<tr>
<td>Video</td>
<td>6</td>
<td>(29%)</td>
<td>7</td>
<td>(21%)</td>
</tr>
<tr>
<td>Handouts</td>
<td>6</td>
<td>(21%)</td>
<td>8</td>
<td>(29%)</td>
</tr>
<tr>
<td>Conversation with Childcare Professionals</td>
<td>5</td>
<td>(22%)</td>
<td>4</td>
<td>(17%)</td>
</tr>
<tr>
<td>Assignments</td>
<td>4</td>
<td>(25%)</td>
<td>4</td>
<td>(25%)</td>
</tr>
</tbody>
</table>

*Participants could choose numerous instructional learning activities.*
As can be seen in the data, there appears to be a preference difference for instructional learning activities for those participants with bachelor’s degree. Videos, pictures and explanations, and conversations with other childcare professionals were identified as preferred instructional activity choices. Further, the study found that there was no apparent difference between those with a high school or GED degree or those with a master’s degree in the preference for instructional activities.

Director or managerial positions represented 48% of the childcare professionals that were in the study. Job titles included center director, executive director, assistant director, facilities manager, and education director. Nineteen percent were home or family consultants, 15% were classroom teachers, 8% were consultants, and 2% were nurse specialists.

Studies reviewed in the literature addressed the fact that childcare professionals can earn either salary or hourly wages, so the survey asked the participants to identify how they get paid. In this study 55% earned a salary wage, 36% earned an hourly wage, and 9% did not answer the question. Table 8 and 9 summarize the earnings of the sample. More specifically, Table 8 reports the hourly wages and job title. Table 9 reports the salaries and job title. The mean hourly wages category was $10.01 to $14.00 an hour. Childcare directors in the study reported that they earned more than $10.00 an hour. The majority of teachers (71%) earned $6.01 to $10.00 an hour. The childcare professionals that were classified as other were paid the highest with 24% of those who received an hourly wage made more than $14.01 an hour.
Table 8

*Hourly Wages and Job Title*

<table>
<thead>
<tr>
<th>Hourly Wages</th>
<th>Director</th>
<th>Teacher</th>
<th>Home/Family Provider</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>$6.00 and below</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>$6.01 - $10.00</td>
<td>0</td>
<td>0%</td>
<td>5</td>
<td>26%</td>
</tr>
<tr>
<td>$10.01 - $14.00</td>
<td>1</td>
<td>5%</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>$14.01 and above</td>
<td>1</td>
<td>5%</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

*Percentages represent the hourly wage participants.*

Table 9 highlights the salary wages. Childcare directors had a wide range of salaries. Seven percent earned less than $23,000, while 18% earned $23,001 - $33,001, 14% earned $33,001-$48,001, and 7% earned over $48,000 each year. In addition, 39% of the childcare professionals in this study earned $23,001-$33,000, 24% earned $33,001-$48,000, and 23% earned less than $23,000. The findings revealed that the childcare professionals in this study earned more than the research studies that were highlighted in the literature review. For example, a national study conducted by the National Association of Childcare Resource and Referral reported that the average earning of childcare professionals was $7.86 per hour (Smith, 2006).
The literature reviewed indicated that most childcare professionals are female and have their own children. The study investigated the characteristics of the participant’s family status and whether or not they have children of their own. Table 10 reports the participants’ relationship status. Seventy-nine percent of respondents were married with children, 11% were single without children, 4% were single with children, and 4% were married without children. For those childcare professionals with children, 54% had children under the age of 18. It was found that this group of childcare professionals has similar relationships status as with the studies in the literature review.

Eighty-nine percent of the participants indicated that they were white, 4% were Asian Pacific Islander, 4% were African American, and 2% were Hispanic. When asked what language(s) they spoke, 89% responded English, 8% reported Spanish, and 4% said other. The other languages that participants identified were Vietnamese, French, and
American Sign Language. In the literature review, Ackerman (2004) discussed the importance of offering professional development programs that are diverse in language. This study found that the majority of the participants were white and spoke English; however, there was representation from other ethnicities.

Seventy-four percent of the participants in the sample indicated that they accessed the Internet several times throughout the day and 15% accessed the Internet once per day. In addition, 79% responded that they accessed the Internet at home, followed by 60% at work, and 4% at a library. Therefore, it can be concluded that childcare professionals who have access to the Internet at home may be better suited for online professional development than those who do not have Internet at home.

Eighty-three percent of the respondents have both downloaded programs from the Web and installed them on their own. Only 17% have neither downloaded programs from the Web nor installed programs on their own. Further, 76% classified themselves as an experienced Web user and stated the name of the Web browser they used. Seventy percent used Internet Explorer, 11% used Firefox, and 4% worked with America Online. In addition, 94% of the childcare professionals knew how their Internet was connected. Sixty-four percent had DSL connection, 15% had dial up, and 15% used another method. Other methods that were reported were cable modem, telecommunications programs, school programs, and broadband.

From findings of the study, the research paints a picture of the typical childcare professional who would consider participating in an online professional development course. To depict a common profile of this person, the researcher has named this person
Julie. Julie would be a white female who speaks English and she would be between the age of 36 to 45. She would be married with children who are under the age of 18. Julie would be in an early childcare profession for ten years. She would hold a managerial position at a large nonprofit setting, such as a childcare center, Head Start, or preschool program. Julie would have a bachelor’s degree and would earn approximately $33,000 a year. Julie would have Internet at home connected by DSL. Lastly, Julie would frequently access the Internet and would consider herself as an experienced Internet user.

**Attitudes Towards Internet Learning**

The research question that this section explored was: What are childcare professional’s perceived attitudes towards Internet learning? Descriptive statistics were collected to demonstrate how the participants rated their attitudes towards Internet learning. An open-ended question was used in the survey to collect information to describe the reasons each person was motivated to take the online professional development course.

Seventy-four percent indicated that they were confident using E-mail and 72% like to use E-mail to communicate with others. It was found that 66% of the participants indicated that they strongly agreed that they felt confident using the Internet. Further, 51% of the respondents strongly agreed that they liked to work with the Internet and World Wide Web and 64% indicated that they liked to use the Internet from home. Table 11 delineates the participant’s attitudes about the Internet and World Wide Web.
Table 10

*Internet and World Wide Web Attitudes*

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel confident using E-mail.</td>
<td>0%</td>
<td>0%</td>
<td>2%</td>
<td>25%</td>
<td>74%</td>
</tr>
<tr>
<td>I like to use E-mail to</td>
<td>0%</td>
<td>4%</td>
<td>8%</td>
<td>17%</td>
<td>72%</td>
</tr>
<tr>
<td>communicate with others.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel confident using WWW</td>
<td>0%</td>
<td>4%</td>
<td>8%</td>
<td>21%</td>
<td>68%</td>
</tr>
<tr>
<td>browsers.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel confident using the</td>
<td>0%</td>
<td>2%</td>
<td>6%</td>
<td>26%</td>
<td>66%</td>
</tr>
<tr>
<td>Internet.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I like to use the Internet</td>
<td>0%</td>
<td>2%</td>
<td>6%</td>
<td>28%</td>
<td>64%</td>
</tr>
<tr>
<td>from home.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I like to work with the</td>
<td>0%</td>
<td>2%</td>
<td>4%</td>
<td>43%</td>
<td>51%</td>
</tr>
<tr>
<td>Internet/WWW.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I enjoy talking with others</td>
<td>0%</td>
<td>4%</td>
<td>38%</td>
<td>34%</td>
<td>25%</td>
</tr>
<tr>
<td>about the Internet.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As the literature addressed, learners must be confident in order to succeed based on their efforts (Keller, 1987). Learners' attitudes and beliefs about the Internet and World Wide Web play a role in whether or not childcare professionals' participate in successfully offered online courses. The survey asked childcare professionals about whether or not participants believed the Internet can be used as a learning tool or if the Internet is worthwhile. Table 12 displays information about childcare professionals' beliefs about the Internet and World Wide Web. The findings reveal that the Internet is
an effective mode of communication. In fact, 79% indicated that they strongly agreed that the Internet helps them find information. In addition, 72% of the participants indicated that they strongly agreed that the Internet and World Wide Web have potential to be a learning tool. Seventy percent believed that the Internet and World Wide Web was able to offer online learning activities.

Table 11

*Childcare Professionals’ Beliefs About the Internet and World Wide Web*

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Internet/WWW helps me to find information.</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>21%</td>
<td>79%</td>
</tr>
<tr>
<td>I believe that learning how to use the Internet is worthwhile.</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>25%</td>
<td>75%</td>
</tr>
<tr>
<td>I believe the Internet/WWW has potential as a learning tool.</td>
<td>0%</td>
<td>0%</td>
<td>2%</td>
<td>26%</td>
<td>72%</td>
</tr>
<tr>
<td>I believe the Internet is able to offer online learning activities.</td>
<td>0%</td>
<td>0%</td>
<td>2%</td>
<td>28%</td>
<td>70%</td>
</tr>
<tr>
<td>I believe using the Internet/WWW is worthwhile.</td>
<td>0%</td>
<td>0%</td>
<td>2%</td>
<td>34%</td>
<td>64%</td>
</tr>
<tr>
<td>Learning the Internet/WWW skills can enhance my academic performance</td>
<td>0%</td>
<td>0%</td>
<td>4%</td>
<td>36%</td>
<td>60%</td>
</tr>
<tr>
<td>I believe that the Internet makes communication easier.</td>
<td>0%</td>
<td>0%</td>
<td>8%</td>
<td>36%</td>
<td>57%</td>
</tr>
</tbody>
</table>
An open-ended question was used in the survey to collect information to strengthen the understanding of Internet learning attitudes. Participants were asked to describe the reasons why they were motivated to take the online professional development course.

Motivation

In much of the research, it was found that motivation plays a role in the success of online learners' experiences. Findings in this study were similar to the literature review in the way that childcare professionals identified reasons why they were motivated to take an online professional development course. There were four characteristics of motivation that emerged in this study for online professional development. Figure 2 outlines the motivational reasons that emerged as explanations why childcare professionals in this study took the online professional development course.

<table>
<thead>
<tr>
<th>REASON</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convenience</td>
<td>• Easy to work into the learner’s schedule.</td>
</tr>
<tr>
<td></td>
<td>• It does not take time away from learner’s family.</td>
</tr>
<tr>
<td>Self-Paced</td>
<td>• Learner has the opportunity to stop and take their time.</td>
</tr>
<tr>
<td></td>
<td>• More relaxed learning environment.</td>
</tr>
<tr>
<td>Desire to Learn</td>
<td>• Learner wants to learn new skills.</td>
</tr>
<tr>
<td></td>
<td>• Learner wants to be qualified and educated.</td>
</tr>
<tr>
<td>Required</td>
<td>• Required for the learners job.</td>
</tr>
</tbody>
</table>

*Figure 2. Motivations for Taking Online Professional Development*
In an attempt to understand childcare professionals' motivation for completing an online professional development course, it is vital to read their written expressions. This personal context provides an explanation of some of the participants and their roles and responsibilities as a childcare professional and provides insight into their motivation about professional development offered through the Internet. The researcher paints a picture of a few of the childcare participants who provide insightful thoughts.

**Convenience**

Convenience was a theme that emerged from the responses childcare professionals expressed as reasons why they were motivated to take an online professional development course. Convenience describes the factors that help professional development fit into the childcare professional’s schedule.

**Female Home Childcare Professional.** Debbie, participant number one, has a bachelor’s degree and has worked in early childcare for three years. She has been a home care professional during those years running a business out of her home. She is married and has two children who are ages two and five. She is in her young thirties, works full time, and earns $10.00 to $12.00 an hour. The one-hour professional development course was her first online learning experience. However, she considered herself as an experienced Web user. Her Internet is connected by dial-up. Debbie reported that assignments, pictures, and explanations would be the most helpful aspects of an online course for her.

The question, “what motivated you to take the online professional development course?” was asked of Debbie. Debbie responded, “Because I could learn from my own
home with my children here and not have to find someone to watch them to go take a
class somewhere else. I could do it when I had time and not because someone told me
when I had to be there. I enjoyed the course soooo much more because I didn’t feel I was
missing out on other things while I was taking the class as I did it when my children were
sleeping.”

Female Center Director. Rosemary, participant number two, is a center director
for a private childcare center. She has been involved with early childcare for over 21
years. She has been a director for her current center for less than a year. Rosemary
works full time and earns $23,000 to $28,000. She has a bachelor’s degree and a degree
in nursing. She is in her mid fifties and is married with children over the age of 18. She
has taken two professional development courses online. She described herself as a rather
inexperienced user of Web browsers. Her choice in professional development included
written materials, Internet, and videos.

The question, “what motivated you to take the online professional development
course?” was asked to Rosemary. Rosemary responded, “It was available, affordable and
worthwhile as I am a Director of a preschool and must train staff and find courses for my
staff to take. Online classes are convenient and easy to work with into almost anyone’s
schedule.” She further expressed, “I have found Online training experiences to be
instructional and user friendly.”

Female Center Director. Kim, participant number 3, is a center director at a
nonprofit childcare center. She has been a director and has worked in early childcare for
at least 11 years. Kim indicated that she works over 40 hours a week and that her income
ranges from $23,000-$28,000. She is in her forties and is married with four children whose ages span from 4 and 12. Kim is fortunate because her employer pays for her training. She accesses online professional development courses at work and visits the Internet one time per day. She has taken two professional development courses online. Kim indicated that she would rather have training by classroom setting, workshops, Internet, videos, and conferences. She responded that she regularly browses the Web, but she did not classify herself as an experienced Web user.

The question, "what motivated you to take the online professional development course?" was asked to Kim. Kim responded, "It would save me time in travel and I would be able to access it on my own free time during the day. It would not take away my time at night with my family. It is easier to concentrate at work and in this setting, less distraction than at home or in an unfamiliar setting."

For many of the childcare professionals, convenience was a key factor in their motivation to participate in an online professional development course. A clearer description can be illustrated by reading the thoughts of the other respondents.

I could do it on my own time without having to go to a class on a specific day and at a specific time. I also wanted to pursue the topic and it is one not offered locally.

The reasons for taking the online course was convenient - being able to take when had free time, no travel time and wanted to try an online course.

It would save me time in travel and I would be able to access it on my own free time during the day. It would not take away my time at night with my family. It is easier to concentrate at work and in this setting, less distractions than at home.

With being a co-director, I work over 40 hours a week at the center. I have to be picky about what days I miss to attend classes. Online works great! For the past year, I have taken college classes Online with no negative experiences thus far.
Self-Paced

Self-paced was another theme that emerged from the responses of childcare professionals. Self-paced describes the factors that relate to the fact that childcare professionals can complete the course at their own pace or have a sense of a more relaxed feeling with being in the comfort of their own home.

Female Family Childcare Professional. June, participant number 4, is married with four children under the age of 12. She is in her low forties and has her high school diploma. She has worked in a family childcare setting for at least 11 years and has worked in early childcare for 11 years. She works over 40 hours a week and earns less than $18,000 a year. She accesses the Internet several times throughout the day at her home and classified herself as an experience Web user. She has taken at least five online courses and is connected to the Internet by DSL. June would rather have professional development training through the Internet or by written materials. The question, what motivated you to take the online professional development course was asked to June. June responded, “I am learner by observing and doing. It’s difficulty for me to actually ‘catch’ things just be being told or by having to read. By doing the online course, it is easy, less time consuming, and I could stop if needed and take more time to comprehend.”

Male Childcare Professional. Frank, participant number 5, has a high school diploma and is middle age (between 46-55). He is married and has grown children over the age of 18. Frank has worked in early childcare care over eleven years and earns a little over $14.00 an hour. He currently is a childcare inspector and works over 40 hours
a week. The one-hour professional development course was Frank's first online professional development experience. He responded that he accesses the Internet at home and uses it at least twice a day. Frank is an experienced Web user and his Internet has a dial up connection. He finds that conversations with other childcare workers, pictures and explanations, and video are the aspects of Internet training that are most helpful for him.

The question, “what motivated you to take the online professional development course?” was asked to Frank. Frank responded, “I am more relaxed taking a course over the Internet and in the comfort of my own home. The internet course gets right to the heart of the matter, thus saving time and making me feel more confident.”

Desire to Learn

Desire to learn was the third theme that became apparent from the responses of childcare professionals as reasons why they were motivated to take an online professional development course. Desire to learn describes the factors that relate to the fact that the learner wants to be as educated as they can.

Female Childcare Professional. Jodi, participant number 6, is in her first year in early childcare and is a childcare center classroom teacher. She has her bachelor’s degree and is in her young twenty's. Jodi is married without children. She is employed by a nonprofit university based childcare center. She earns at least $12.00 an hour and has taken at least five online professional development courses. Jodi completes online training courses at home and she accesses the Internet several times throughout the day. She described herself as an experienced Web user and her Internet is connected through a
local telecommunications network. She indicated that she would rather have training to receive a certificate by classroom setting workshops, videos, and conferences. The question, “what motivated you to take the online professional development course?” was asked to Jodi. Jodi responded, “I wanted to become as qualified and educated as I could in my profession. I had never had training on outside supervision before, so I saw this as an opportunity.”

**Male Childcare Professional.** Lyle, participant number 7, has been working in early childcare as a facilities manager in a Head Start program between 6 to 10 years. He is in his low fifties, has a high school diploma, and married with children over the age of 18. Lyle works over 40 hours a week and earns over $14.00 an hour. Lyle considers himself as an experienced Web user and has taken over five online professional development courses. He accesses the Internet both at home and at work and checks the Internet several times throughout the day.

The question, “what motivated you to take the online professional development course?” was asked to Lyle. Lyle responded, “I desire to learn new ideas and methods to enhance our child care centers and so I can improve my level of support that I provide to our teaching staff. I am in charge of our facilities and we have 33 child care center locations. It is my duty to design, maintain, and improve our facilities. By taking a course on line, I can gain the information at my desk or at my home without taking time out to go to a school or training location, thus saving $$ and time for me and for my employer. I believe that on-line training is the wave of the future and I will utilize it to the fullest extent that I can.”
Lyle also commented “Many of the childcare professionals I know struggle with the computer and internet world. For them, learning through the on-line method is a large barrier. However, as young professionals come in, the percentage of this group will continue to decline.”

Additional comments that surfaced in the desire to learn category included:

To gain more information on the subject that was interesting to me, also to find out how I could improve my program.

To better my understanding, for my job and those around me.

I was interested in the topic.

To increase my knowledge.

Interested in obtaining the information provided.

Required

The course was a requirement for a few childcare professionals who took the online professional development course. Required describes the reasons that relate to the fact that the learner was required by either employer, state agency, or in order to receive licensing.

Female Home Childcare Professional. Natasha, participant number 8, has a bachelor’s degree and is married with two children between the ages of 5 and 12. She is in her first year as a home childcare professional and earns $28,000 to $33,000 a year working over 40 hours a week. She has worked between 3 to 5 years in early childcare. She described herself as an experienced Web user and has a cable modem for her Internet connection. She accesses the Internet several times throughout the day. She prefers to have professional development training by workshops, written materials, Internet, videos,
and conferences. The question, “what motivated you to take the online professional development course” was asked to Natasha. Natasha responded, “I completed the online course because I needed to complete training requirements for my job.”

Additional comments that emerged in the required category included:

My director suggested it.

It was needed for licensing of the child care in my school.

An easy way to access continuing education credits. I enjoy taking knowledge when it’s that easily accessible.

Types of Learning Styles

The research question that this section investigated was “What types of learning styles are present with childcare professionals?” Thirty-one participants responded that they prefer to learn by oneself (59%) and 22 participations indicated that they prefer to learn with a group (42%). Fifty percent of childcare professionals who answered that they prefer to learn by themselves have a Bachelor’s or Master’s Degree. Sixty percent of childcare professionals who replied that they prefer to learn with a group have a Bachelor’s or Master’s Degree.

The study also classified learning styles by using Kolb’s Learning Style instrument. Appendix G provides the method for determining learning styles. It was found that 30% were accommodators (n = 16), 28% were convergers (n = 15), 23% were divergers (n = 12), and 19% were assimilators (n = 10).

A chi-square test of independence was calculated comparing frequency of preference for learning setting for learning styles. No significant relationship was found ($\chi^2(3) = .082, p > .05$).
Participants reported on how they would prefer to have professional development in order to receive a certificate. The findings revealed a difference in preference for online professional development courses than what was highlighted in the literature review. Research studies reported that 95% preferred on-site training and only 15% of online courses were favorable (Iowa State University Extension, 2001; KAEYC, 2002). Whereas in this study, 79% responded that they prefer Internet courses and 53% said they prefer workshops in a classroom setting for their professional development. Table 12 presents findings of participants' choices for professional development. The participants could choose numerous instructional learning activities.

Table 12

*Professional Development Preferences*

<table>
<thead>
<tr>
<th>Choose of Learning Setting</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet</td>
<td>42</td>
<td>79%</td>
</tr>
<tr>
<td>Workshop (classroom setting)</td>
<td>28</td>
<td>53%</td>
</tr>
<tr>
<td>Videos</td>
<td>24</td>
<td>45%</td>
</tr>
<tr>
<td>Written materials (textbooks, notebooks)</td>
<td>24</td>
<td>43%</td>
</tr>
<tr>
<td>Conferences</td>
<td>16</td>
<td>30%</td>
</tr>
</tbody>
</table>

*Participants could choose numerous instructional learning activities.
In this next section, findings from the study will reveal characteristics of accommodators, assimilators, convergers, and divergers that were found in the study.

**Accommodator**

An accommodator was described as a learner who has a combination of concrete-experience and active-experimentation learning modes (Kolb, 1985). Thus, the literature review described an accommodator as a person that learns by doing and needs to get involved with new experience. In this study, 16 participants (30%) were identified as an accommodator. It was found that the majority of accommodators (56%) worked in a large setting (childcare center, Head Start, Preschool Program). Seventeen percent worked either at home or a family childcare setting and 6% worked in another setting. The other category represented those who work at a lab school, elementary school, consultant, or a church-based preschool. Just over half of the accommodators (56%) indicated that they would rather learn in a group than by oneself.

Participants that were identified as accommodators were asked what type of instructional activity they would prefer. Twenty-seven percent identified videos, 24% said handouts, 22% said pictures and explanations, 19% responded conversation with childcare professionals, and 8% identified handouts. It can be concluded that videos, handouts, and pictures and explanations were the most preferred instructional activities for accommodators.

**Converger**

A converger was described as a learner who has a combination of abstract-conceptualization and active-experimentation modes (Kolb, 1985). The literature review
described a converger as a person who learns by dealing with things rather than people and is best at finding practical uses for ideas and theories. In this study, 15 participants (28%) were identified as convergers. Fifty-three percent of the convergers indicated that they would prefer to learn by a group.

It was found that 46% of convergers worked in a large setting (childcare center, Head Start, Preschool Program), 39% worked in another setting, and 15% worked in a home setting. Participants that were identified as convergers were asked what type of instructional activity they would prefer. There was not a difference of the types of learning activities that were chosen. Twenty-seven percent of convergers identified pictures and explanations as the most preferred instructional activity. Twenty-two percent indicated video, 20% said handouts, 16% said assignments, and 14% indicated conversation with childcare professionals.

Diverger

A diverger was described as a learner who has a combination of concrete-experience and reflective-observation modes (Kolb, 1985). The literature review described a diverger as a person who is interested in people and is good at generating ideas. In this study, 12 participants (23%) were identified as divergers. Sixty-seven percent of divergers indicated that they would prefer to learn by themselves rather than with a group.

It was found that 58% of divergers worked in a large setting (childcare center, Head Start, Preschool Program), 17% worked in a home setting, and 17% worked in another type of setting. Participants that were identified as divergers were asked what
type of instructional activity they would prefer. Pictures and explanations (28%) and videos (22%) were recognized as the most preferred instructional activity. Handouts (19%), conversation with childcare professionals (17%), and assignments (14%) were also identified by the participants as instructional activity preferences.

Assimilator

An assimilator was described as a learner who has a combination of abstract-conceptualization and reflective-observation modes (Kolb, 1985). The literature review described an assimilator as a person who learns by abstract concepts rather than with people and is good at creating theoretical models. In this study, 10 participants (19%) were identified as assimilators. Ninety percent of the assimilator indicated that they would prefer to learn by oneself rather than with a group. This finding supports Kolb's theory in the fact that assimilators were learners that would rather deal with things than people.

It was found that 40% of assimilator worked in a large setting (childcare center, Head Start, Preschool Program), 30% worked in a home setting, and 30% worked in another type of setting. Participants that were identified as assimilators were asked what type of instruction activity they would prefer. Twenty-seven percent of assimilators identified pictures and explanations and videos as the most preferred instructional activity. Other activities that were preferred included handouts (18%), conversation with childcare professionals (18%), and assignments (9%). It can be concluded that assignments were not preferred by the participants that were identified as assimilators.
From findings of the study, the research draws attention that there was no difference in the number of childcare professionals in this study who were accommodators, assimilators, convergers, and divergers. Pictures and explanations and video were the most preferred instructional activity by all learning styles. In addition, there was not a difference between the learning styles and where the childcare professionals work. A chi-square test of independence was calculated comparing frequency of work setting and learning styles. No significant relationship was found ($\chi^2(9) = .248, p > .05$).

**Participation Barriers**

The research question that this section explored was: What participation barriers are perceived to exist for childcare professionals who enroll in online professional development? Barriers to enrollment or completion of online professional development courses are perceived to prevent childcare professionals from the online learning environment. The participation barrier themes that emerged included: (a) knowledge with the computer or Internet, (b) childcare professional’s dedication and determination, (c) quality of online courses, and (d) no barriers.

**Computer/Internet Knowledge**

Of the childcare professionals who responded, almost 80% indicated that some type of computer issue would be a barrier. Participants identified barriers that they believe other childcare professionals would have if they took an online professional development course. Common responses were "not familiar with the Internet," "lack of"
computer skills,” “access to Internet,” and “won’t have someone to seek help.” A
selection of responses that fell into this category is as follows:

Some childcare professionals are not as familiar with the Internet so it becomes a
challenge for them to take a class on-line and be successful, particularly if they
don’t have someone to ask questions and seek help from.

Limited access to internet.

Barriers include lack of understanding of the computer or the internet. No one to
talk to them about how to operate the program for those who learn best by hearing
from others.

Most have no computer experience and are afraid to learn.

Fear of the internet would be the only thing...for instance I hit the submit button
on the first page here and nothing happened and I had to manually go to page 2.
Did it go or not?

For some people, they need to have face to face communication to really
understand. For others, it can effectively be done via the Internet. I think one
barrier may be that some staff do not have a lot of knowledge about the computer
and/or Internet, and they, therefore, would feel it too time consuming.

Some teachers may not be able to get out of the classroom as easily. Also, not all
centers have access to the internet if they WANTED to take an online course.

Some people are not very confident in using computers.

Possibly if they did not know how to use the internet or perhaps type.

Some of the co-worker’s that I work with want to take it but they didn't have a
computer at home.

The navigation through the screens, the "anxiety" some of them have with using
the computer.

A barrier that other childcare professions may have while taking an online course
is if they are computer illiterate and cannot comprehend how to utilize some of
the technologies out there.
Lyle, the Head Start Facilities Manager, wrote his thoughts on barriers that childcare professionals may have if they took an online professional development course. Lyle commented, “Many of the childcare professionals I know struggle with the computer and internet world. For them, learning through the on-line method is a large barrier. However, as younger professionals come in, the percentage of this group will continue to decline.”

**Childcare Professionals Dedication and Determination**

Besides the concern that childcare professionals do not have Internet or computer skills, a few respondents indicated that online students must be dedicated to get the course completed. For example one respondent wrote, “Childcare professionals still must commit and make the efforts arrangement to get the classes done.” Another participant stated that “the comfort level with the Internet and discipline to complete the course would be definite barriers.”

**Quality and Cost of Online Courses**

A center teacher at a nonprofit childcare center expressed concern about the quality of the online course. She wrote, “Do we all have time to research which programs offer quality training? Do we all have the knowledge to be able to find help if we have a technical problem? Fear of the on-line technology if we never have completed an on-line course before.”

In addition, the cost of online courses was also a concern. A center director with over 11 years of experience wrote that “I think that people who don’t use computers
much might be intimated by the thought of taking an on-line course. Others might not be sure on whether taking the course on-line would be worth the financial cost.”

No Barriers

There were also 3 participants that responded that there are no barriers for childcare professionals to take an online professional development course. Two responses included “none” and the other response included “I don’t really see any barriers that would be of any significance.”

Summary

This study featured a description of online learning characteristics of childcare professionals. The study provided information about the demographics of childcare professionals who completed an online professional development course. Specifically, the study revealed that childcare professional’s learning styles and characteristics are diverse. The findings revealed the characteristics of a representative person named Julie.

It was also found that childcare professionals who have completed an online training experience have a positive attitude towards Internet learning and classified themselves as regular and experienced Web users. It was also found that motivation plays a role in the success of childcare online learners’ experiences. In the study, four characteristics of childcare professional’s online professional development motivation emerged.

While childcare professionals are open to online learning opportunities, the familiarity with computers and technology were expressed in the study as potential barriers for childcare professionals. However, it was discovered that online learning is a
possibility for this unique group of individuals. The need for computer and technology assistance was a dominant theme in responses to open-ended questions. The final chapter of this dissertation will use the data for both discussion and considerations items and the implications for future research for childcare professionals' online professional development opportunities.
CHAPTER V
DISCUSSIONS

During a time when the Internet is available and free and childcare professionals are held to be highly qualified and trained, one way that professional development courses can be offered is through the Internet. While technology cannot replace human teachers, it can provide flexibility, convenience, and deliver educational content that is appropriate and required by many state Departments of Health and Human services standards. This chapter addresses: (a) discussions of the findings, (b) implications for practice, and (c) recommendations for further study.

The purpose of this study was to investigate considerations that online training instructors should examine before offering online professional development courses to childcare professionals. To accomplish the purpose of the study, four research questions were explored:

1. What are the backgrounds, educational levels, technology experiences, income levels, and the ages of childcare professionals?
2. What are childcare professionals perceived attitudes towards Internet learning?
3. What types of learning styles are present with childcare professionals?
4. What barriers to participate are perceived to exist for childcare professionals who enroll in online professional development?
Discussion

This study focused on describing the characteristics of childcare professionals in an online professional development learning environment. The study had many findings to discuss.

The first question in the study explored the backgrounds, education levels, technology experiences, and the age of childcare professionals. It was found that the childcare professionals in the study were predominately white, English speaking females. Forty-one percent indicated they were in the age category of 36 to 45 and the majority of them (79%) had children of their own who were under the age of 18.

Most are employed in a nonprofit childcare center and had director or managerial positions. In addition, 83% had a higher education degree. Over 80% of the participants had been in early childcare for over six years. Fifty-five percent had been part of the early childcare profession for more than 11 years. The childcare professionals in the study indicated that they are experienced Internet users. They further pointed out that they access the Internet several times a day at home and at work. It appeared from the findings that communication was the major theme for using the Internet.

It can be concluded that the participants were experienced childcare professionals and they had other responsibilities outside of the early childcare profession. Professional development that is delivered online is one possible opportunity that can meet the needs of many childcare professionals who are seeking alternative paths of continuing their professional development. These individuals are experienced and have an understanding of the regulations of early childcare. They have been participating in professional
development for many years and should be up-to-date on the latest educational research on young children. The findings of the study revealed that online learning environments should consider offering content that is relevant to the childcare professional and can enhance the knowledge of the professional.

The second question in the study investigated the childcare professional’s perceived attitudes towards Internet learning. Childcare professionals who have completed professional development course through the online learning environment believe that they are confident using the Internet. Seventy-four percent of the childcare professional participants indicated that they accessed the Internet several times throughout the day. In addition, 79% responded that they accessed the Internet at home and 60% logged on to the Internet at work. Eighty-three percent of those experienced online learners have both downloaded programs from the Web and installed them on their own.

In addition, four distinct themes emerged as to why childcare professionals were motivated to take online professional development. They were convenience, self-paced, desire to learn, and required. Convenience was displayed because the participants indicated that online learning fits into their schedule and it does not take away from family time. Self-paced surfaced when the participants indicated that they were more relaxed in the online learning environment and that they had the opportunity to stop and take their time. Desire to learn transpired when professionals indicated that they want to learn new skills and become as qualified and educated as they could. Required was a
theme that appeared when the participants said that it was required for their job or to meet state requirements.

These findings verify that there are a group of childcare professionals who utilize the Internet regularly. Online professional development technology can make it possible for childcare professionals to complete training at their desks, at their home, or anywhere. The findings support the literature review, because of the studies that have described the types of barriers that have been expressed. Many studies in the literature review highlighted that childcare professionals indicated that professional development is difficult to complete because of family, home, and job responsibilities (Ackerman, 2004; Iowa State University Extension, 2001; KAEYC, 2002).

The third question in the study looked into the childcare professionals learning styles. Learning styles were classified using Kolb's Learning Style Instrument. Results showed that there were a wide variety of the types of learners within the childcare professionals who completed one-hour professional development course. Conclusions drawn from the literature review suggested that a variety of teaching strategies and instructional activities must be used in online learning environments for childcare professionals. Teaching methods should be chosen based on the characteristics of the instructor, students, content, and delivery system (Herring & Smaldino, 2005). This was verified by the findings in the study.

Childcare professionals need to take responsibility for their own learning. Fifty-nine percent of the professionals indicated they prefer to learn by themselves. As well as, childcare professionals expressed that online learning takes dedication. Self commitment
was a theme that emerged in the study. Similar comments about self-determination in online professional development included “discipline to complete the course” and “making the time.” Findings are consistent with the literature review in the fact that online learners need to take initiative and display self-discipline to become a distance learner (O’Neil & Perez, 2006).

The fourth question in the study that was researched was what participation barriers are perceived to exist for childcare professionals who enroll in online professional development training. The participation barriers themes that emerged included: (a) knowledge with computer or Internet, (b) childcare professional’s dedication and determination, (c) quality of online course, and (d) no barriers.

There were additional findings in the study that are essential to discuss. Networking was a theme that emerged. For instance, 43% of childcare professionals in the study indicated that conversation with other colleagues is important for them to learn. In addition, repeated statements by the childcare professionals who participated in the study expressed that their colleagues would need to network in online professional development courses. The concern that was expressed was that if other colleagues took professional development online, they would not have the chance to network. For example, a childcare professional indicated that barriers for other childcare professionals would be, “They don’t get to hear what the others say and they’ll miss the one on one contact.”

However, an opposing finding in the study was that conversation with other childcare professionals was not highly identified as a preferred learning activity.
Participants were asked to identify preferences for instructional activities. Conversations with other childcare professionals were ranked behind pictures and explanations, videos, and handouts in instructional activity preferences.

There was no data that answered why networking was identified to be a need, but then childcare professionals did not identify conversation with other childcare professionals as preferred learning activity. The researcher wonders whether or not childcare professionals in this study viewed conversations with other childcare professionals the same as networking.

Findings in the study reported that there are concerns about the accessibility of the instructor. One childcare professional described barriers to an online professional development course as "Many need actual instructors on site to make the learning more real and visual. Learners need to have the chance to ask questions."

Instructors must be accessible to the students, especially if it is their first online professional development experience. Instructors need to create learning environments that provide much more interaction between the students and teachers than would be found in the traditional classroom (Keuren, 2006). The findings of the study found that accessibility meant instructors need to encourage childcare professionals to ask questions, then answer the questions in a timely manner. For instance, one participant commented that childcare professionals may view online professional development as a barrier because they won’t have someone to ask questions and seek help. Online professional development courses need to have accessible instructors who interact with the childcare
professionals. Online courses need to offer interaction (dialogue between the student and instructor) and participation (involvement and presence with feedback); (Kearsley, 2000).

The literature review pointed out that keys to learning in an online environment are the interactions among the students, between the students and instructors, and the collaboration that exists with the learners (Palloff & Pratt, 1999). The online environment has a perfect setting to allow for networking and collaborating. Developing communities, building relationships, and promoting collaborative learning are possible in the online environment. Creating team activities can enhance the learning experience for the learner (Conrad & Donaldson, 2004).

**Implications for Practice**

It is evident from this study that there are two considerations that instructors need to reflect on for the delivery of online childcare professional development programs. The online learning environment and the childcare professional as a learner are key elements for designing effective online professional development courses for childcare professionals. More specifically, the childcare professional as a learner is made up of four factors (a) learner characteristics, (b) experience levels, (c) learning styles, and (d) motivation. The online learning environment consists of four components: (a) computer capabilities and Internet attitudes, (b) course quality, (c) accessible instructor, and (d) networking opportunities. This idea is presented into the Childcare Professional Development Online Characteristics Model in Figure 3. In regards to practical implications, due to a 32% response rate, practitioners need to be cautious when implementing the Childcare Professional Development Online Characteristics Model.
CONSIDERATIONS
For Online Professional Development

Childcare Professional as a Learner

- Learner Characteristics
- Experience Levels
- Learning Styles
- Motivation

Online Learning Environment

- Computer Capabilities & Internet Attitudes
- Course Quality
- Network Opportunities
- Accessible Instructor

Figure 3. Childcare Professional Development Online Characteristics Model
Childcare Professional as A Learner

The second component of the model is the importance of understanding the childcare professional as a learner. The childcare professional as a learner is influenced by four factors (a) learner characteristics, (b) experience levels, (c) learning styles, and (d) motivation.

Learner Characteristics. The literature review discussed that to be successful in the online environment, it is necessary to understand the learners. The learners were childcare professionals. The learning characteristics from this sample of 54 childcare professionals, who have completed a professional development course online, were consistent with other research studies. Eighty-five percent of the participants were females. This is similar to other studies that have conducted research of professional development for childcare (Ackerman, 2004; Copple, 1990; IDHS, 2003; KAEYC, 2002; Morgan & Costley, 2004; & NACCRA, 2006).

Of the total participants, their ages ranged from 21 to over 56. The largest age category was 36-45 (41%). In chapter four, the researcher drew attention to Lyle. Lyle wrote "Many of the childcare professionals I know struggle with the computer and internet world. For them learning through the online method is a large barrier. However, as younger professionals come in, the percentages of this group will continue to decline."

What is important to recognize in this study is that a new generation of childcare professionals will be the future childcare professional learners. The Internet has become the centerpiece of how Generation Y’s communicate with each other and the world. Those born after 1982 are the most media savvy, educated, and wired people to have ever
walked the earth” (Meskauskas, 2003). Further, the MySpace generation is reaching 18 years of age. A study in 2006 reported that teenagers ages 12 to 17 year olds, 87% use the Internet daily (Pew Internet and American Life Project, 2006). The childcare profession needs to get prepared for future generations to provide alternative delivery methods of professional development.

Childcare professionals in this study were employed in many different early childhood settings. They reported working in childcare centers, home or family childcare, Headstart, Pre-K settings, summer program, and lab school. In addition, 55% have worked over 11 years in early childcare. Those that participated in this study have advanced degrees. They included 40% hold a bachelor’s degree, 28% hold an associate degree, and 13% hold a master’s degree. In addition, the study discovered that the majority of the participants had director or manager positions at childcare centers. The findings showed that online professional development needs to build learning environments that facilitate learning opportunities for their characteristics. Deciding what types of media, programming, and scheduling to offer online needs to be determined based on characteristics and lifestyles of the target audience (Johnson, 2003).

Experience Levels. The study sample found that 55% had been in early childcare for over 11 years and 15% have worked with young children for more than 21 years. The majority of the participants reported that they had been involved in early childhood for 11 to 20 years. In addition, the study reported that 19% of the participants had less than 5 years of experience. Another consideration would be for instructors to develop
opportunities to allow for networking to happen between those who are new to the profession and those who are experienced.

Another vital point to remember was that this study found that 79% of the participants were married with children. Childcare professionals’ lives are centered on children. These individuals have experiences both at work and at home. Adult learners are unique learners, because they have more life and work experiences from which to draw (Driscoll, 2005). To be effective in an online professional development, the course should be designed so that the learners can apply their experiences.

**Learning Styles.** The literature review emphasized the importance of understanding the different learning styles of childcare professionals before online professional development is offered. The study revealed that the participants have a variety of learning styles. Learning styles were organized using Kolb’s Learning Style Instrument. Thirty percent were accommodators, 28% were convergers, 23% were divergers, and 19% were assimilators. Clearly it is apparent that instructors need to implement a variety of instructional strategies and media so that the course can effectively reach all the childcare professionals.

According to Kolb (1985) accommodators learn by doing and by getting involved in new experiences. Online instructors for childcare professionals may want to implement strategies that include instructional multimedia, listservs, chats, simulators, and role-playing activities. Accommodators identified the types of instructional activities they would prefer. They indicated that video (27%), handouts (24%), pictures and
explanations (22%), conversations with other childcare professionals (19%), and assignments (8%) would be their instructional activity preferences.

An assimilator is good at putting a wide range of information into logical order and inductive reasoning (Kolb, 1985). Using Kolb's research, online instructors would want to consider implementing print medium into the course to meet the needs of assimilators. In addition, images may also be helpful for those assimilators in an online course. Live virtual classrooms would also appeal to assimilators. Live virtual classrooms provide PowerPoint presentations with a lecture (Driscoll & Carliner, 2005). Assimilators need to be engaged with their learning. Conrad and Donaldson (2004) indicated that engaged learning could occur with authentic activities. The study asked assimilator to identify what types of instructional activities they would prefer. They indicated pictures and explanations (27%), video (27%), conversations with other childcare professionals (18%), handouts (18%), and assignments (9%) would be their preferences.

Kolb (1985) described convergers as individuals who are best at dealing with people rather than things. Streaming media, hands-on examples, and role-playing would be ways an instructor could deliver information so that convergers have a better understanding of the content. Other instructional activities that may be appropriate for convergers are audio, video, and hands-on assignments. Team activities would be another way to get convergers to communicate with one another. The study asked convergers to identify the types of instructional activities they would prefer. They indicated pictures and explanations (27%), video (22%), handouts (20%), assignments
Divergers are interested in people and are good at generating ideas (Kolb, 1985). Divergers need collaboration. Collaboration between the instructor and learner and among the learners should occur. Using Kolb’s theory, online classrooms would need to get the divergers deeply involved with one another. Participation with divergers needs to be frequent. The instructor needs to provide assignments that require participation. The study asked divergers to identify the types of instructional activities they would prefer. They indicated pictures and explanations (27%), video (22%), handouts (20%), assignments (16%), and conversations with other childcare professionals (14%) would be their preferences.

There was no difference in the instructional activity preferences by participants that were identified as having different learning styles. For instance, the highest preference by assimilators, convergers, and divergers were pictures and explanations, followed by video instruction. According to Kolb’s Learning Style Instrument (1985), convergers and divergers were best dealing with people rather than things. An interesting finding in the study was that childcare participants who were classified as convergers and divergers ranked conversation with childcare professionals last on an instructional activity preference. However, networking or having conversation with other colleagues was a common theme that emerged in the convergers and divergers written comments.

The purpose of the study was not to examine the different types of online instructional activities and childcare professionals learning styles. However, the findings
of the instructional activity preferences do make the case that such a study could enhance
the delivery of online professional development programs.

The findings strengthen the case that a variety of learning styles represent
cildcare professionals who have completed an online professional development course.
Online instructors must provide a variety of instructional delivery tools. One way to
determine what instructional activities to offer is to ask the learners what works for them
(Simsonson, et al., 2003). “For an online facilitator, this means getting to know the
learner as soon as possible through the use of profiles and introductory activities that
provide insight into who the learner is not only academically but professionally and
personally” (Conrad & Donaldson, 2004, p. 19). Once instructors determine the groups
characteristics, she or he can develop networking opportunities and the appropriate types
of instructional activities.

Motivation. Online professional development learners are people who, because of
time, place, or other constraints, choose not to pursue their professional development in a
classroom style workshop. The findings of the study revealed that they feel comfortable
using computers and the Internet.

Specifically, the study revealed when and where participants accessed the course
and their confidence levels. It should be noted that the majority of the participants in the
study were frequent users of the Internet both at home and at work. Participants were
also asked to describe motivates for enrolling in an online professional development
course. There were four characteristics of motivation that emerged in the study, (a)
convenience, (b) self-paced, (c) desire to learn, and (d) required. The study findings
supported Knowles, Holton, and Swanson’s Adult Motivation Learning theory. Knowles, Holton, and Swanson (1998) indicated that adult learners are motivated to learn by their internal motivators (self-esteem, learning for the sake of learning, etc) and external motivators (job requirements, higher pay, etc).

To be effective in distance education, instructors must examine their own beliefs about how people learn and how the learning process can be implemented (Dooley, Lindner, & Dooley, 2005). Childcare professional development online instructors need to recognize motivational factors and develop instruction that meets the needs of the learners. The more instructors know and understand the learners in the course, the better they will be able to prepare an effective learning environment (Herring & Smaldino, 2005).

The Childcare Professional Development Online Characteristics Model will not be effective if the learner is not motivated to learn. The literature review discussed the importance of the learner’s motivation. Research indicated that the characteristics of a successful online learner were: those that are highly motivated, are independent, are active learners, and have the discipline to study (Connick, 1999). Childcare professional must be active learners in the online environment to be successful.

In addition, the literature review supported the findings in this study in the fact that learner motivation will play a crucial component in the effectiveness of the professional development course online. In the study, participants expressed concerns that their colleagues may have difficulties with motivation if they take an online professional development course. Participant number 9, Deedra, a center teacher, wrote
"I would recommend for them to still pay attention and try to learn as much as they can from the class. Some people think that online courses are easier and they aren't really, there is still work involved at your own pace. Also try to keep communication open with the instructor or other classmates if that is an option."

Deedra's comment needs to be examined in two different ways. One, childcare professionals must know that participating in online professional development will take time and work. The online course will not complete itself. Online professional development instructors must use techniques to get the childcare professional to participate. Learners, with the help of the instructor, must learn how to self-motivate and take responsibility for their own learning (O'Neil & Perez, 2006). Second, it can be questioned whether or not the childcare professionals will already be highly motivated before they start because they are choosing to be in the online learning environment.

**Online Learning Environment**

This next section will describe the factors that build the framework for this model. The online learning environment consists of four components: (a) computer capabilities and Internet attitudes, (b) course quality, (c) networking opportunities, and (d) accessible instructor.

**Computer Capabilities and Internet Attitudes.** In this study, 74% of the childcare professional's participants indicated that they log onto the Internet several times throughout the day. In addition, the study reported that 79% accessed the Internet from their home and 60% indicated they log in at work. As Kearsley (2000) indicated, online education only works if everyone involved has regular access to computers and networks.
Thus, it is important to note that there was a group of childcare professionals who have access to the Internet.

Not only does a group of childcare professionals have access to the Internet, but they have downloaded programs from the Web and installed them on their own (84%). In addition, 94% of the childcare professionals know how their Internet was connected and over half of them had a high speed connection.

Instructors of online learning environments need to have an understanding of what types of online applications and software are compatible with students needs. Instructors or childcare training agencies should consider following Kearsley’s (2000) recommendations for the delivery of online professional development courses:

1. Search the Web for existing online courses that involve similar content, students, tools, or objectives, and study them.
2. Talk to others in your institution or elsewhere who have done what you plan to do.
3. Take an online course if you have no firsthand experience with this form of learning.
4. Put together a team for course development and support.
5. Ensure that your institution or organization is ready for online education. (p. 162)

Childcare professionals need to be informed of what types of software or computer programs they will need to access the online course. Research (Hara & Kling, 2000) showed that technical programs will frustrate learners. Online professional development needs to avoid frustrated learners. One way to do this is for instructors to create guidelines and handouts that direct the learner to what types of software or programs they need to have installed on their computer. Many software programs have
websites that instructors can direct the students to so they can download the compatible software.

**Course Quality.** The research study pointed out that childcare professionals want courses that are relevant. "To increase my knowledge" was repeated several times by participants indicating that they were motivated to take the course, because of the content. Content should fulfill ongoing professional development requirements. The literature review clearly drew attention to the fact that childcare professionals should have access to ongoing professional development that is linked to the current teaching and learning activities in their classrooms.

Participant number 10, Emily, a home care professional, questioned "Do we all have time to research which programs offer quality training? Do we all have the knowledge to be able to find help if we have a technical problem?" State, local, and national childcare professional development organizations need to be proactive in finding quality professional development courses whether they be in a classroom setting or online. As the literature review discussed, many state agencies have requirements for the content and hours of professional development. If online professional development is a consideration, then the same procedures and policies need to be consistent with the traditional classroom professional development courses.

In addition, the course needs to be organized and available so that childcare professionals have an understanding of what professional development has to offer. Learning objectives should be clearly written and communicated to the learners. Keuren (2006) recommended that the course objectives include the course themes and how
technology will be used to deliver the themes. The learners should know exactly what is expected of them before the course begins (Shea-Schultz & Fogarty, 2002).

**Accessible Instructors.** One theme that shed some light on considerations was the fact that childcare professionals need instructors to be accessible and knowledgeable. Childcare professionals expressed that barriers for colleagues would be that they “won’t have someone to seek help.” A primary role of the instructor in an educational setting was to provide guidance in the learning process (Herring & Smaldino, 1997). It was important in an online professional development environment that instructors are available to answer questions, to provide the knowledge, and to enhance learning. The instructor was responsible for determining appropriate instructional methods and deciding on ways to involve the learners (Simonson, Smaldino, Albright, & Zvacek, 2003).

Just as the successful traditional professional development instructor, the instructor acts as the teacher, leader, facilitator, lecturer, moderator, and consultation, so does the successful online instructor. Online professional development instructors must be visible. Online instructors need to be visible in the fact that they are responsible for organizing and creating the course activities and discussions (Schweizer, 1999). Online professional development instructors must also manage the online course. This includes course management, enforcing rules, and preparing questions.

**Networking Opportunities.** Another theme that surfaced was the fact that childcare professionals want to network with colleagues. Childcare professionals in this study stressed that it was valuable for them to hear what other colleagues have to say
about their experiences. Networking provided practical examples that professionals can implement at their centers or homes. Kearsely (2000) proposed that “the most important role of the instructors in online classes is to ensure a high degree of interactivity and participation. This means designing and conducting learning activities that result in engagement with the subject matter and with fellow students” (p. 78).

A unique characteristic in this sample was the diversity of the professionals who work in early childcare all over the United States. Childcare professionals who completed the online professional development course lived in four out of the six time zones including Alaska, Central, Eastern, and Pacific. One consideration would be for online professional development courses to encourage networking with colleagues from across the world. By networking and collaborating with colleagues, learners can gather new ideas and diverse interpretations that may not match with their prior experiences (Wang & Gearhart, 2006). In an online professional development learning environment, childcare professionals could collaborate and encourage new practices and techniques with professionals across the world.

Online professional development learning environments need to connect childcare professionals. Conrad and Donaldson (2004) suggested that “a high volume of meaningful communication, a deeper level of understanding, and the application of knowledge to real-life situations” all combine to create an engaged learning environment (p. 24). Further, they suggested that online icebreakers, peer partnerships, team activities, reflective activities, authentic activities, and games and simulations provide online
activities that will help learners engage in the learning environment (Conrad & Donaldson, 2004).

Childcare professionals who chose online professional development must be motivated for the right reasons to have a successful experience in the online learning environment. Just as the instructor must take responsibility for learning about the childcare professional, learners in the online environment must assume ownership in their learning experiences (Macfarlane & Smaldino, 1997). The learner’s self-determination is the foundation for the Childcare Professional Development Online Characteristics Model.

Conclusion

This study explored the considerations of online professional development for childcare professionals. Childcare professionals are held responsible for providing young children quality early care and education. The demand for professional development has expanded throughout the United States. A major problem with childcare professional development requirements is that there are barriers. Many of the professional development barriers relate to the inconvenience of when training is offered (e.g., inconvenient scheduling, personal childcare needs, travel cost, time commitment), thus many professionals do not fulfill the professional development requirements.

One possibility to break down those barriers is to offer professional development in an online learning environment. There have been several research studies that have been conducted examining the effectiveness of distance education. In addition, there have been an overwhelming amount of studies that have examined applications and practices for educators, instructors, and teachers of online learning environments. The
Internet is accessible and free. Childcare professionals can get access to the Internet, whether it is at home, work, or at the library. The future of the professional development in the childcare profession should take a close look at the availability of the Internet to determine if it can be utilized to help eliminate the barriers that childcare professionals are expressing.

In this study, the researcher examined characteristics of childcare professionals who have completed professional development training. A profound finding was that there are a group of childcare professionals who do have access to the Internet and they frequently take advantage of it. In fact, the study found that the participants had a positive attitude towards Internet learning and classified themselves as experienced Web users. The findings revealed that participants’ learning styles and characteristics are diverse.

The findings of the study resulted in a theoretical model called Childcare Professional Development Online Characteristics Model. This model is intended to help guide instructors to deliver effective and efficient online professional development to childcare professionals. The model suggests that the online learning environment and the childcare professional as a learner be considered when designing online instruction. More specifically the elements that support the online learning environment include: (a) computer capabilities and Internet attitudes, (b) course quality, (c) instructor accessibility, and (d) networking opportunities. The childcare professional as a learner is made up of four factors: (a) learner characteristics, (b) experience levels, (c) learning styles, and (d) motivation. Drawings of the findings and implications for practice that
were presented in this study can help childcare professional development instructors develop and deliver effective professional development online programs for childcare professionals.

**Future Research Recommendations**

As online professional development courses are established, research needs to be carried out to determine if they are meeting the needs of childcare professionals. Future research needs to take into account sociological factors, such as socioeconomic status or family roles. It is recommended that the effectiveness of an online professional development be examined. One way to conduct such a study is to offer a course that covers the same content in a traditional professional development course and compare results to an online professional development environment.

Second, future research could use a purely qualitative research method of in-depth interviews to help understand childcare professionals learning styles and motivations for taking online professional development courses. In addition, questions could be asked to determine what types of learning strategies are effective for childcare professionals.

Third, one theme of this study was the concern that childcare professionals would not have the knowledge or skills to understand how to operate or navigate within the online program. An area of research that might provide useful insight into technical problems during online programs is an investigation into the problems that childcare professionals are having. Further research might examine the types of questions that arise from an online professional development problem.
Fourth, the majority of participants in the study were women and this is common in the field of early childcare. While gender was not the focus of this study, the researcher reviewed the literature in distance education. The researcher discovered that there are distance education studies that compared male to female students in terms of effectiveness and experiences. If online professional development continues to be offered, studies should be conducted that provide specific information about an exclusive female group of students. For instance, a researcher may want to evaluate the efficiency of online professional development courses for women only focusing on job classification or generation groups.

Fifth, this research focused in on the childcare professional. More research is needed to broaden our understanding of childcare professional development instructors and their experiences with distance education. Research is needed to determine what organizations, instructors, and educational institutes have the capability to offer professional development courses online. Further, studies that focus on the instructional designer need to examine how online courses should be developed and implemented.
REFERENCES


Salvador, R. (2004). Take off! With online learning: Professional development has never been so easy or so accessible. Instructor, 114(3), 16-21.


APPENDIX A

STATE TRAINING CLOCK HOUR REQUIREMENTS
Each state requirement for the number of annual training each childcare professional must complete is reported. The chart is for childcare professionals that are employed in centers, large/group family homes, and family homes.

<table>
<thead>
<tr>
<th>State</th>
<th>Family Homes</th>
<th>Large/Group Family Homes</th>
<th>Directors Centers</th>
<th>Teachers in Centers</th>
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(U.S. Department of Human Services, 2006)
APPENDIX B

IRB APPROVAL LETTER
Date: February 7, 2007

To: Heather Olsen
   Curriculum & Instruction
   0613

From: Larry Hensley, Ed.D.
   UNI Human Participants Review Committee (IRB)

Title: Considerations That Need to Be Addressed For Online Training Courses for Childcare Professionals

Re: ID# 06-0142

Your project “Considerations That Need to Be Addressed For Online Training Courses for Childcare Professionals” has been reviewed and determined to be exempt from further review in accordance with federal guidelines 45 CFR 46.101(b). For your project the applicable exempt category referenced in the federal regulations is (b)(2):

Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects’ responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects’ financial standing, employability, or reputation.

You may begin enrolling human research participants in your project. If you modify your project in a way that increases the physical, emotional, social, or legal risk to the participants or you change the targeted participants, you should notify the Human Participants Review Committee in the Office of Sponsored Programs before continuing with the research.

If you have any further questions about the Human Participants Review policies or procedures, please contact me at Larry.Hensley@uni.edu, or Anita Kleppe, the IRB Administrator, at 319.273.6148 or anita.kleppe@uni.edu. Best wishes for your project success.

cc: Institutional Review Board
   Susan Hudson, Advisor
APPENDIX C

INVITATION TO PARTICIPATE
Dear Childcare Professional,

I would like to ask you to help me get an understanding of learning styles and characteristics of childcare professionals. You are being asked to participate in a research project conducted through the University of Northern Iowa because you participated in an online playground supervision training courses by the National Program for Playground Safety. This study is being conducted by a student who is completing a doctoral dissertation. Information gained from this study could provide important information to assist childcare teachers and add to the improvement of childcare professional development classes. The following information is provided to help you make an informed decision about whether or not to participate.

Ninety-seven percent of states have a specific number of training requirements that childcare professionals, like yourself, have to spend in training. Unfortunately, there is not information available to training organizations that describe childcare professionals learning styles and learning characteristics. Who are the childcare professionals that need to be trained? What are the learning styles of childcare professionals? Questions like these need to be answered in order for training instructors and organizations to deliver effective courses.

Although your input is essential to the success of this project, participation is completely voluntary. You are free to withdraw from participation at any time or choose not to participate at all, and doing so, you will not be penalized. It will take approximately 20 to 30 minutes to complete the survey online.

Information obtained during the study which could identify you will be kept confidential. Collected data will be stored in a password protected computer and will be accessible only to the researcher and the faculty advisor. The summarized findings with no identifying information will be used in the researchers’ dissertation and may be published in an academic journal or presented at a scholarly conference. The results of the study will be available upon request to all participants at the conclusion of the study.

To complete the survey, please go to (the URL of the website will be here). Please complete the survey by March X, 2007. It should take you approximately 15 to 20 minutes to complete. If you complete the attached survey, it means that you have read the information contained in this letter and agree to participate in this research study.

If you have questions about the study or desire information in the future regarding your participation, you can contact Heather Olsen at 319-988-9885 or by email at heather.olsen@uni.edu or the faculty advisor, Dr. Susan Hudson at the Department of Education, University of Northern Iowa at 319-273-7529 or by email at Susan.Hudson@uni.edu, for answers to questions about rights of research participants and the participants review process. You can also contact the office of the IRB.
Administrator, University of Northern Iowa, at (319) 273-6148, for answers to questions about the rights of research participants and the participant review process.

Sincerely,

Heather Olsen
Heather.olsen@uni.edu
The University of Northern Iowa
APPENDIX D

SECOND INVITATION TO PARTICIPATE
Dear Childcare Professional,

I recently sent you an invitation to participate in a survey of childcare professionals. I would like to extend this request to you again to participate in this study. The data that I collect from this study will help strengthen training for childcare professionals. Attached is a copy of the original E-mail that I had sent.

I am a doctoral student at the University of Northern Iowa. In order for me to complete my degree, I need to conduct a research study. Being a mother, I have a lot of respect and appreciation for childcare professionals. One of my concerns is the number of required training hours that you are expected to complete each year. I truly believe that those providing training need to have a better understanding of the childcare professionals in order to provide effective training programs.

To complete the survey, please go to (the URL of the website will be here). Please complete the survey by March 20, 2007. It should take you approximately 20 minutes to complete. If you complete the attached survey, it means that you have read the information contained in this letter and agree to participate in this research study.

Sincerely,

Heather Olsen
The University of Northern Iowa
Department of Education
Heather.olsen@uni.edu
APPENDIX E

THIRD INVITATION TO PARTICIPATE
Dear Childcare Professional,

I recently sent you an invitation to participate in a survey of childcare professionals. I would like to extend this request to you again to participate in this study. The data that I collect from this study will help strengthen training for childcare professionals. Attached is a copy of the original E-mail that I had sent.

I am a doctoral student at the University of Northern Iowa. In order for me to complete my degree, I need to conduct a research study. Being a mother, I have a lot of respect and appreciation for childcare professionals. One of my concerns is the number of required training hours that you are expected to complete each year. I truly believe that those providing training need to have a better understanding of the childcare professionals in order to provide effective training programs.

To complete the survey, please go to (website’s URL). Please complete the survey by April 14, 2007. It should take you approximately 20 minutes to complete. If you complete the attached survey, it means that you have read the information contained in this letter and agree to participate in this research study.

Sincerely,

Heather Olsen
The University of Northern Iowa
Department of Education
Heather.olsen@uni.edu
Online Characteristics and Learning Styles of Childcare Professionals

This survey is designed to determine learning styles and characteristics of childcare professionals. Your cooperation in completing this survey will give online training instructors a better insight into childcare professionals, so that they can deliver the most effective and efficient online training programs. Answers will be kept confidential.

1) Directions: Rank the endings for each sentence according to how well you think each one fits with how you would go about learning something. Using the spaces provided, rank a 4 for the sentence ending that describes how you learn best, down to a 1 for the sentence ending that seems least like the way you would learn. Be sure to rank all the endings for each unit. Please do not make ties.

When I learn: (Circle the ranking for each item. Please use each ranking only once.)

<table>
<thead>
<tr>
<th>I like to deal with my feelings.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>I like to watch and listen.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I like to think about ideas.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I like to be doing things.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

2) I learn best when: (Circle the ranking for each item. Please use each ranking only once.)

<table>
<thead>
<tr>
<th>I trust my hunches and feelings.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>I listen and watch carefully.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I rely on logical thinking.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I work hard to get things done.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

3) When I am learning: (Circle the ranking for each item. Please use each ranking only once.)

<table>
<thead>
<tr>
<th>I have strong feelings and reactions.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am quiet and reserved.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I tend to reason things out.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I am responsible about things.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

4) I learn by: (Circle the ranking for each item. Please use each ranking only once.)

| feeling.                           | 1 | 2 | 3 | 4 |
| watching.                          | 1 | 2 | 3 | 4 |
| thinking.                          | 1 | 2 | 3 | 4 |
| doing.                             | 1 | 2 | 3 | 4 |
5) When I learn: (Circle the ranking for each item. Please use each ranking only once.)

I am open to new experiences. 1 2 3 4
I look at all sides of issues. 1 2 3 4
I like to analyze things, break them down into their parts. 1 2 3 4
I like to try things out. 1 2 3 4

6) When I am learning: (Circle the ranking for each item. Please use each ranking only once.)

I am intuitive person. 1 2 3 4
I am an observing person. 1 2 3 4
I am a logical person. 1 2 3 4
I am an active person. 1 2 3 4

7) I learn best from: (Circle the ranking for each item. Please use each ranking only once.)

personal relationships. 1 2 3 4
observations. 1 2 3 4
rational theories. 1 2 3 4
a chance to try out and practice. 1 2 3 4

8) When I learn: (Circle the ranking for each item. Please use each ranking only once.)

I feel personally involved in things. 1 2 3 4
I take my time before acting. 1 2 3 4
I like ideas and theories. 1 2 3 4
I like to see results from work. 1 2 3 4

9) I learn best when: (Circle the ranking for each item. Please use each ranking only once.)

I rely on my feelings. 1 2 3 4
I rely on my observations. 1 2 3 4
I rely on my ideas. 1 2 3 4
I can try things out for myself. 1 2 3 4

10) When I am learning: (Circle the ranking for each item. Please use each ranking only once.)
I am an accepting person. 1 2 3 4
I am a reserved person. 1 2 3 4
I am a rational person. 1 2 3 4
I am a responsible person. 1 2 3 4

11) When I learn: (Circle the ranking for each item. Please use each ranking only once.)
I get involved. 1 2 3 4
I like to observe. 1 2 3 4
I evaluate things. 1 2 3 4
I like to be active. 1 2 3 4

12) I learn best when: (Circle the ranking for each item. Please use each ranking only once.)
I am receptive and open-minded. 1 2 3 4
I am careful. 1 2 3 4
I analyze ideas. 1 2 3 4
I am practical. 1 2 3 4

13) Directions: The following statements refer to your thoughts about the Internet and World Wide Web (WWW). Read each of the following statements and respond by checking the appropriate circle according to how you generally feel about the statement.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Don't Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel confident using the Internet/WWW.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel confident using E-mail.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel confident using WWW browsers (e.g. Internet Explorer, Netscape).</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel confident using search engines (e.g. Yahoo, Google).</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I like to use E-mail to communicate with others.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
I enjoy talking with others about the Internet.  

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
</table>

I like to work with the Internet/WWW.  

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
</table>

I like to use the Internet from home.  

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
</table>

I believe using the Internet/WWW is worthwhile.  

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
</table>

The Internet/WWW helps me to find information.  

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
</table>

I believe that the Internet makes communication easier.  

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
</table>

The multimedia environment of WWW (e.g. text, image) is helpful to understand online information.  

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
</table>

I believe the Internet/WWW has potential as a learning tool.  

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
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<th>5</th>
<th>6</th>
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</thead>
</table>

I believe that the Internet/WWW is able to offer online learning activities.  

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
</table>

I believe that learning how to use the Internet/WWW is worthwhile.  

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
</table>

Learning Internet/WWW skills can enhance my academic performance.  

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
</table>

Page 3

14) Directions: The purpose of the following questions is to allow me to gather as much information as possible. As such, I strongly encourage you to provide as much information as possible when you answer the questions. Please elaborate on your responses. I want to hear your story. Your responses will truly help instructors develop effective professional development experiences.

Describe the reason(s) on what motivated you to take the online professional development course?

________________________________________________________________________

15) Describe the barrier(s) that you believe other childcare professionals would have if they took an online professional development course.

________________________________________________________________________
16) Now that you have taken an online professional development course, what would you recommend to other childcare professionals who would be participants in an online training experience?

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22) How often do you access the Internet? (Check only 1.)  
_ Less than once per week  
_ Once per week  
_ Three to four times per week  
_ Once per day  
_ Several times throughout the day  
_ Other: ____________________________

23) Have you ever downloaded a program from the Web for installation on your computer? (e.g. RealPlayer, Adobe Reader) (Check only 1.)  
_ I have both downloaded programs from the Web and installed them on my own.  
_ I have not downloaded programs from the Web, but I have installed programs on my own.  
_ I have neither downloaded programs from the Web nor installed programs on my own.

24) Please describe your level of experience with Web browsers (e.g. Internet Explorer, Firefox). (Check only 1.)  
_ I don't know what a Web browser is.  
_ I know what a Web browser is, but I am rather inexperienced in using one.  
_ I regularly browse the Web, but I don't remember the name of the browser I use.  
_ I am an experienced Web user and I know the name of the browser I use.

25) What Web browser do you use? (Check only one.)  
_ I don't know the name of my Web browser.  
_ I don't know what a Web browser is.  
_ Internet Explorer  
_ Firefox  
_ Netscape Navigator  
_ American Online  
_ Other: ____________________________

26) How is your Internet connected? (Check only 1.)  
_ Dial up  
_ DSL  
_ I am not sure.  
_ Other: ____________________________

27) How would you rather have training in order to receive a certificate? (Check all that apply.)  
_ Workshop (classroom setting)  
_ Written materials (textbooks, notebooks)  
_ Internet  
_ Videos  
_ Conferences  
_ Other: ____________________________
28) What aspects of Internet training would be most helpful for you? (Check all that apply.)
- Assignments
- Conversations with other childcare workers
- Handouts
- Pictures and explanations
- Video
- Other: ________________________

29) When learning new skills, do you prefer to? (Check only 1.)
- Learn by yourself.
- Learn with a group.

30) Directions: Please check the ones that apply.
What setting are you employed in? (Check only 1.)
- Childcare center
- Head Start
- Home childcare
- Family childcare
- Before/After school
- Pre-K
- Other: ________________________

31) If you are employed by a center, what type is it? (Check all that apply.)
- Nonprofit
- For-Profit
- Private
- Public
- Other: ________________________

32) What is your job classification? (Check only 1.)
- Center director
- Center teacher
- Home care provider
- Family home care provider
- Other: ________________________

33) How many years of service have you worked in your current job? (Check only one.)
- Less than a year
- 1-2 year(s)
- 3-5 years
- 6-10 years
34) What is the total number of years you have worked in early childcare? (Check only one.)
- Less than a year
- 1-2 year(s)
- 3-5 years
- 6-10 years
- 11-20 years
- 21 years and above

35) If you get paid hourly, please answer question 35. If you get paid salary, please go to question 36.
How much do you make a hour? (Check only one.)
- $6.00 and below
- $6.01 - $8.00
- $8.01 - $10.00
- $10.01 - $12.00
- $12.01 - $14.00
- $14.01 - above
- Not applicable

36) If you get paid salary, answer question 36. If you get paid hourly, go to question 37.
What is your salary? (Check only one.)
- $18,000 and below
- $18,001 - $23,000
- $23,001 - $28,000
- $28,001 - $33,000
- $33,001 - $38,000
- $38,001 - $43,000
- $43,001 - $48,000
- $48,001 and above
- Not applicable

37) How many hours a week do you work as a childcare professional? (Check only one.)
- Less than 12 hours
- 12-20 hours
- 21-40 hours
- More than 40 hours

38) Directions: Please mark the responses that apply.
What is your gender? (Check only one.)

___ Female
___ Male

39) What is your age? (Check only one.)

___ 20 and under
___ 21-25
___ 26-35
___ 36-45
___ 46-55
___ 56 years and above

40) What is your relationship status? (Check only one.)

___ Single without children
___ Single with children
___ Married without children
___ Married with children
___ Other: ______________________

41) At home, how many children do you have in your family under the age of 18? (Check only one.)

___ 0
___ 1-2
___ 3-4
___ 5 and above

42) What are the age ranges of your children? (Check only one.)

___ My children are under 4 years old
___ My children are between the ages of 4 and 12
___ My children are between the ages of 4 and 18
___ My children are between the ages of 5 and 12
___ My children are between the ages of 5 and 18
___ My children are over 18 years of age
___ No children
___ Other: ______________________

43) How much education have you completed? (Check only one.)

___ High school or GED
___ Associate Degree
___ Bachelor's Degree
___ Master's Degree
___ Doctoral Degree
___ None of the above

44) Indicate if you have completed the following credentials/certificates. (Check all that apply.)
45) What is your ethnicity? (Check only 1.)
- African American
- Asian Pacific Islander
- Hispanic
- Native American
- White
- Other: 

46) What language(s) do you speak? (Check all that apply.)
- Chinese
- Eastern European
- English
- Korean
- Spanish
- Other: 

47) Additional Comments:

48) Thank you for completing this survey. Would you like to view results of this study when the research is completed?
- Yes
- No
APPENDIX G

KOLB’S LEARNING STYLE INSTRUMENT
METHOD
Kolb’s Learning Style Type Grid

For each participant, add the total number in each column. Each column relates to the four learning modes (AC, CE, AE, and RO). Take the scores for the four learning modes, AC, CE, AE, and RO, and place below. Subtract as follows to get the two combination scores.

\[
\text{AC} - \text{CE} = \text{AC-CE} \quad \text{AE} - \text{RO} = \text{AE-RO}
\]

By marking the two combination scores, AC-CE and AE-RO, on the two lines of the following grid and plotting their point of interception, or data point, you can find which of the four learning styles one would fall into. The quadrant of the Learning Style Type Grid into which the data point falls shows your preferred learning style.

For example: If the AC-CE score was -8 and the AE-RO scores was +15, the style would fall into the Accommodator quadrant.
APPENDIX H

CODING OF OPEN-ENDED QUESTIONS
Formatted Open-Ended Question Sample

What motivated you to take the online professional development course?

<table>
<thead>
<tr>
<th>Response</th>
<th>Themes</th>
<th>Highlight</th>
<th>Category</th>
</tr>
</thead>
</table>
| Response #1
I am more relaxed taking a course over the internet and in the comfort of my own home. The internet course gets right to the heart of the matter, thus saving time &b making me feel more confident. | Learning style
Comfortable | Home learning environment | Self-paced |
| Response #2
I took the online course because it could be done while at work. If I was interrupted I could easily go back and pick up where I left off. It was convenient and cost effective. | Convenience | Completed at work | Convenience |
| Response #3
It was needed for licensing of the child care in my school. | It was needed | Required |

What barriers do you believe other childcare professionals would have if they took an online professional development course?

<table>
<thead>
<tr>
<th>Response</th>
<th>Themes</th>
<th>Highlight</th>
<th>Category</th>
</tr>
</thead>
</table>
| Response #1
Some childcare professionals are not as familiar with the internet so it becomes a challenge for them to take a class on-line and be successful, particularly if they don't have someone to ask questions and seek help from. | Not familiar with Internet
Instructor accessibility | Ask questions | Computer Capabilities & Internet Attitudes
Accessible Instructors |
| Response #2
Some may feel unsecure about using the internet for a course, unable to access or use it. Some may not concentrate on it as well, and are not able to learn in this situation. Many need actual instructors on site to make the learning more real and visual. Learners need the chance to network, which I feel is the most important and best part of a training. | Network
Learning environment
Not familiar with Internet | Networking Opportunities | Network
Accessible Instructors |
| Response #3
The comfort level with the internet and discipline to complete the course would be definite barriers. | Familiarity with Internet
Motivation | Individualized motivation | Motivation
Computer Capabilities |

NOTE: This chart is representative of an intermediate encoding stage between transcription and the final themes. Responses are direct written quotes from the participants. Themes are phrases or words that the researcher created. Highlights are ideas that the researcher wanted to make note of. Categories are the groups the researcher created.