

LEARNING PROFILE OF CHILD
CARE HEALTH CONSULTANTS

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CHAPTER 1

INTRODUCTION

Introduction

Many adults are re-thinking their career paths and deciding to try something different (Workforce 2020, 1997). Nurses are leaving the hospital setting for non-traditional career paths (Crowley, 1988). In an effort to upgrade or change skills, adults are engaging in a variety of learning opportunities (Smith, 1982). Changing careers in mid-life is a daunting experience. It is not without some fear that adults approach learning as they move from one field of discipline to another.

An understanding of how adults learn is necessary to maximize the learning opportunities for adults (Brookfield, 1986; Knowles, 1980; Smith, 1982). As adult educators learn more about the people they teach, it is easier to help them. Moreover, as learners know about themselves, they can be successful in their learning endeavors.

Child care health consulting is an emerging profession engaged in the task of learning about the child care field. Many training opportunities have come forth for child care health consultants. Still little is known about the child care health consultant's learning needs. Addressing the learning needs of the child care health consultant will help improve training for such consultants.

Child care providers lack sufficient knowledge about health issues and health professionals are not typically knowledgeable about child care programs (<http://nrc.uchsc.edu/SPINOFF/CCHC.html#1099102>). Many issues arise in child care related to the health and safety of children and infants. Quality training programs for child care health consultants can improve the outcomes of child care.

Child Care

Child Care in America

Sixty-seven percent of children under the age of 12 are currently enrolled in one of the 111,506 child care centers or 306,246 family child care homes in the United States (<http://nccic.org/faqs/number.html>). These centers provide the answers to the child care needs of working parents and families. Unfortunately, there is an increased potential for accidental injury and infectious disease for children that are in these group care settings as opposed to their own homes (Alkon, et al., 2000; Aronson, 2001, 1994; Winnail, et al., 2001). Child care facilities in the United States have been described as being mediocre and in some cases dangerous (Department of Health and Human Services & Public Health, 1997). The inept quality of child care exposes children to great hazards (Committee on Labor and Human Resources, 1995, p. 4).

Child Care in America dates back to the 1800s. The first child care center was opened in 1825 in Harmony, Indiana, by Robert Owen (NAEYC, 2001). One first day nursery, as it was then called, opened in 1854 in New York City. The purpose then, as now, was to care for children of working parents in an out-of-home environment (American Public Health Association & American Academy of Pediatrics, 2002; Child Care Bureau & The Maternal and Child Health Bureau, 1995). Day nurseries grew during the World War I years as women entered the workforce in record numbers (<http://www.childcarereaction.com/rtime.html>). In recent years, households in America have both parents working outside of the home. In 1999 alone, there were 19.8 million homes having only a single parent to provide financial support (Kids Count Data Book, 2001, p. 21). As a result, child care has become a major issue for women. However, it is not only a woman's issue, but it is a family and social issue (Polakow, 1997). Every family should have access to safe, affordable, quality child care. (<http://www.nowldef.org/html/policy/chciss.htm>).

A conference of health care professionals, child development specialists, and early childhood leaders was held in May of 1995 in response to child care conditions (Child Care Bureau & The Maternal and Child Health Bureau,

1995). Approximately 180 participants assembled at the National Child Care Health Forum in Washington, D.C., to discuss how they could create a linkage between health care professionals and the child care community (Huggins, 1995). This may have been the most important meeting of the twentieth century to determine the direction for providing safe and healthy environments in out-of-home care (American Public Health Association & American Academy of Pediatrics, 2002; Huggins, 1995). "The purpose of the National Child Care Health Forum was to deliver the message of the importance of healthy child care in America and to serve as a launching pad for Healthy Child Care America Campaign" (<http://ericps.ed.uiuc.edu/nccic/hcca/backgrd.html>). The result of this meeting was the development of the Blue Print for Action, a 10 step strategic plan for improving health and safety in child care (Huggins, 1995). From this plan, the role of the child care health consultant and the mandate for the training of health professionals as consultants to child care was created (American Public Health Association & American Academy of Pediatrics, 2002; Child Care Bureau & The Maternal and Child Health Bureau, 1995; Healthy Child Care America, 1999, p. 11).

Child Care in Oklahoma

The most significant event regarding child care in the

State of Oklahoma occurred in 1963. It started with the Miracle Hill home for children in Wewoka, a small town in Seminole county (Oklahoma Department of Human Services, 1991, p. 5). The events that occurred at this home eventually led to the enactment of the Oklahoma Child Care Licensing Law (p. 28). Miracle Hill housed many children in a boarding care situation. Parents or other family members brought their children to Miracle Hill when they were unable to care for their children due to the loss of a job or death of a spouse. Children remained at the facility until family situations improved (Bryant, 1999).

Many family members may not have known that the conditions at Miracle Hill were atrocious. Miracle Hill was in a constant state of chaos. Children were neglected and malnourished. They slept and ate in filthy conditions. Rats and roaches ran rampant, and the children were crowded into dilapidated rooms (Bryant, 1999; Oklahoma Department of Human Services, 1991). Oklahoma Department of Human Services child welfare workers investigated this home and brought the conditions to public attention. A Seminole county attorney worked hard to assure these conditions did not continue, and the home was ultimately closed (Oklahoma Department of Human Services, 1991, p. 30).

Events at Miracle Hill led to the strengthening of the

Division of Child Care Authority (Bryant, 1999, p. 20), which later led to the creation of the Office of Child Care. The Office of Child Care is currently the licensing agent for out-of-home care for Oklahoma's children. Prior to 1963, regulations for organizations dealing with children were not as stringent as they are today. The Office of Child Care makes every effort to assure that families have access to licensed, affordable, quality child care. This is accomplished through the administration of the Federal Child Care Development Fund and the statewide licensing program that monitors child care programs for compliance with minimum requirements.

At present, child care in Oklahoma is guided by a child care advisory committee of professionals and experts in the field. The Office of Child Care Licensing Division licenses all types of out-of-home care programs. These programs include family child care homes, large family child care homes, child care centers, part-day children's programs, school-age programs, day camps, and drop-in programs (<http://nrc.uchsc.edu/states.html>). In addition to family child care homes and child care centers, other types of licensed programs exist. One such program is Head Start, which is a federally subsidized early childhood program. "Participating children attend Head Start in their

communities, where they receive nutrition, medical, social, mental health, and educational services" (Government Accounting Office, 1989, p. 19).

National Health and Safety Conditions in Child Care

Oklahoma child care conditions were reflective of the National child care conditions (Collins, 1997). In recent years, the impact of a safe and healthy environment on brain development has become evident (Nash, 1997; Nelson, 1999). "Bad day-care can harm the development of any child" (Collins, 1997, p. 60). Quality child care that promotes optimal health and safety of developing children is essential to improving the lives of children and families (Tonniges, 1997). Therefore, it is necessary for early childhood professionals and health professionals to form a collaborative relationship for children's healthy development.

As a result, most states are required through the child care block grant from the General Accounting Office (2000), an independent auditing and accounting agency that assists the federal government, to protect the health and safety needs of children in out-of-home child care. Basic health and safety requirements include maintaining up-to-date immunization records (Aronson, 2001), keeping smoke detectors in working order, keeping dangerous material away

from children (General Accounting Office, 2000), and assuring an environment where children do not become ill (Aronson, 2001; Tonniges, 1997).

Child Care Health Consultants

The deplorable conditions in child care have prompted health care professionals to consider additional training in child care health issues. Health professionals, primarily pediatricians and pediatric nurses, have become involved with child care in an effort to improve conditions. These professionals have independently kept themselves abreast of the issues facing the industry (Crowley, 1988). They have become proficient in the health and safety of children in group care as part of their self-directed learning across discipline lines (Britt, 2001).

These professionals have expertise in state and local child care regulations. They also understand causation of injuries, environmental dangers, and how to control the spread of infectious disease in a group setting (Dooling & Ulione, 2000, pp. 23-24). The child care health consultant provides an array of health and safety consultation services including education and technical assistance to child care centers, family child care homes, and Head Start centers (Dooling & Ulione, 2000; Healthy Child Care America, 1999; Ulione & Crowley, 1997). "Nursing is well positioned to

respond to and shape the emerging role of the child care health consultant" (Crowley, 2001, p. 178).

Child care health consultants provide critical support to the child care industry (Lombardi, 1999, p. 6). Child care health consultants are required to have skills in teaching and a thorough understanding of adult learning needs (Britt, 2001; Healthy Child Care America, 1998). They also provide assistance with policy development, community referrals, and advocacy for children living with special needs or chronic conditions (Cianciolo, 2001; Crowley, 2000).

"Optimally, the health consultant should be a physician, certified pediatric or family nurse practitioner, or public health nurse" (American Public Health Association & American Academy of Pediatrics, 1992, p. 314). The child care health consultant is a blend of medical specialist and child care professional (Ulione & Crowley, 1997). The emergence of the child care health consultants began approximately 7 years ago when Federal legislation encouraged states to address the health and safety needs of children in out-of-home care (Cianciolo, 2001; Crowley, 2000; Dooling & Ulione, 2000). Health professionals began to define the criteria for the standards of practice for this new profession. "To advance

in one's professional career one must broaden and build on the knowledge base" (Nunnery, 1997, p. 4).

As discussions regarding the standards of practice for this new profession arose, many questions surfaced about what should be included in the curriculum for training child care health consultants. "It is expected that a child care health consultant will be trained and recognized by state or local agencies; however, there are no laws or regulations regarding who can call themselves a consultant" (Cianciolo, 2001, p. 7). Therefore, a major challenge within the field is to establish the criteria for practice, develop methods to evaluate mastery of the designated skills, and to define appropriate training (Healthy Child Care America, 1998).

In the last few years, a great deal of training for child care health consultants has occurred (National Training Institute for Child Care Health Consultant, 2002). Regrettably, there is only limited information about the learning needs of the adult learners who leave a traditional healthcare setting to work in child care (Wirth & Hausman, 1993). The learning strategies of individuals in this emerging profession are not known. What is known is that there is a migration from traditional health care settings into child care (Crowley, 2001). Therefore, there is a need to determine learning strategies of child care health

consultants so they may be successful in their self-directed learning activities. There is also a need to provide appropriate curriculum for formal learning. If child care health consultants are not successful in their efforts to improve the health and safety conditions for children in child care, unhealthy conditions might continue to exist. Furthermore, individuals might not want to enter into this new profession if they cannot be successful. It is crucial that professionals in one discipline, who are learning about a new discipline, know how to bridge the gap and incorporate the tools that are necessary to be successful.

The evolution of this new breed of health professionals prompted a need to understand how to best design a curriculum for them. Adult learning theory has suggestions on how to design training so that these health professionals can learn about child care while making a transition into the emerging field of child care health consulting.

Adult Learning Theory

Adult learning is the process by which change occurs within adults (Mezirow, 1981). It is the process in which adults seek to improve themselves or their society by increasing their cognitive and social skills (Houle, 1961). Adult learning usually is motivated by internal mechanisms (Knowles, 1990). Adults are self-directed and usually draw

on their previous experiences to accomplish a learning task (Houle, 1961). Unlike children, adults learn "because of a felt need or aspiration" (Houle, 1973, pp. 27-28). In addition, adults find the process of learning linked to self-esteem and a sense of personal actualization (Houle, 1973, pp. 27-28).

Adult education is the overall system in which learning by adults may take place. This learning process is not limited to a specific setting, nor is it time limited. Adult learning is lifelong. It is best described as "a transaction among adults in which experiences are interpreted, skills and knowledge acquired, and actions taken" (Brookfield, 1986, p. 4). A major difference in adult learning and traditional academic learning is that adult learning is triggered by a need to learn a particular vocation or skill, whereas academic learning is formulated by others and is not always applicable to real-life situations (Fellenz & Conti, 1989, pp. 3-4). Programs for adults should always take into consideration this need for real-life learning.

"Because adult learners tend to be problem-centered in their orientation to learning, the appropriate organizing principles for sequences of adult learning is problem areas, not subjects" (Knowles, 1980, p. 54). Adult learning of

this type involves andragogy, learning how to learn, and learning strategies.

Andragogy

Andragogy is one of the foundational pillars of adult learning theory (Merriam, 2001, p. 3) and provides a theoretical framework for adult learning. Andragogy was made popular by Malcolm Knowles (1980) who described it as the "art and science for helping adults learn" (p. 43). The concept of andragogy, which is based on a learner-centered approach to learning, assumes several things. The first assumption is the self-directing nature of the adult learner (Knowles, 1975, 1980; Merriam & Caffarella, 1999). "The adult is self-directing, has much experience on which to draw, learns because of a felt need or aspiration, wishes to orient his or her education toward life experiences (not subject matter), and feels most deeply rewarded by such outcomes of learning as greater self-esteem and sense of personal actualization" (Houle, 1973, pp. 27-28).

The second assumption of andragogy is that adults have a reservoir of experience that can be used in their learning (Knowles, 1980, p. 44). Experience plays an important role in the maturation of adults. Adults approach learning situations with a frame of reference.

These learners have a background in the subject by virtue of their lifelong experiences. Unlike children, adults approach learning situations with an extensive history. Adults, therefore, become their own greatest resource for learning (Merriam & Caffarella, 1999, p. 390).

As people mature, they are less likely to want to defer application of knowledge to a future time period; rather there is a need for immediate use of knowledge to solve problems. The third assumption of andragogy addresses adults' orientation to learn. The adult learner prefers task or problem-centered activities to subject-centered activities (Knowles, 1980, pp. 44-45). The fourth assumption of andragogy deals with the readiness of an adult to learn. Readiness is linked to the development task of the adult's social role. Consequently, adults are concerned with the immediate application of what they have learned (Knowles, 1998).

Adult's have a need to know the reasoning for learning prior to undertaking a learning task. They simply will not engage in learning because an authority figure has deemed it necessary. This is the fifth assumption of the andragogical model (Knowles, Holton, & Swanson, 1998, pp. 64-68).

Lastly, the sixth assumption of andragogy deals with the maturity of adults. This assumption asserts that adult learners are motivated to learn by internal forces instead of external forces (Knowles & Associates, 1984, pp. 9-12). Adult learners may be responsive to some external motivators; however, the primary driving force for adult learners is intrinsic (Knowles, 1998). Nonetheless, the adult educator can assist the learner by providing guidance and facilitation of learning.

Learning How to Learn

Learning how to learn is a term popularized by Smith (1976) and is defined as helping people to figure out the cognitive skills necessary to master learning. The success of learning how to learn is dependant on the learner's ability to direct one's own learning through the processes of planning learning outcomes, conducting learning activities, and evaluating learning experiences (Smith, 1982). These skills are not usually known by the adult learner and thus need to be taught. Learning how to learn occurs when one is assisted in assessment of personal cognitive skills and abilities. The facilitator of adult learning helps the learner to think and act in such a way as to promote learning (Smith, 1982).

Educators rarely equip learners with the wherewithal to plan, conduct, and evaluate their own learning. However, educators can help learners to become effective learners by assisting learners with goal setting, selecting the best resources for the desired outcome, and evaluating the learning process (Seamans & Fellenz, 1989). When adults are helped to "identify and interpret the various educational opportunities...become acquainted with library resources" and so on, they are learning how to learn (Smith, 1982, p. 19).

Planning requires the learner to assume a role of control over desired learning outcomes. The first step in planning is to examine one's needs in light of what is hoped to be accomplish. Next the learner must have enough knowledge of available resources to conduct or perform activities which would produce the desired learning outcomes. Adult learners often use what is readily available as opposed to what is the most useful resource to accomplish the desired outcomes (Seamans & Fellenz, 1989). Resources could be external as well as internal, and human in nature (Fellenz & Conti, 1993).

The final step is to evaluate the learning experience. Knowles (1986) suggested the use of learning contracts to assist with evaluation. These learning

contracts serve as a guide to conducting learning activities more than signaling the end of a learning activity (Seaman & Fellenz, 1989). Furthermore learning contracts can direct the evaluation process. The evaluation of learning activities is as important for the educator as it is for the learner (Seaman & Fellenz, 1989).

Learning how to learn enables the adult learner to understand institutional norms and expectations such as taking exams, mastering study skills, turning in appropriate reports, managing resources and meeting deadlines (Seaman & Fellenz, 1989). Learning how to learn provides a successful learning experience. Insight into individual learning strategies appears to be an important part of one's ability to learn how to learn (Fellenz & Conti, 1993).

Learning Strategies

Learning strategies are mechanisms by which individuals organize themselves for learning to occur. Learning strategies focus on solving real-life problems by involving the processes of metacognition, memory, motivation, critical thinking, and resource management (Fellenz & Conti, 1993). "Learning strategies are the techniques or skills that an individual elects to use in

order to accomplish a learning task" (Fellenz & Conti, 1989, p. 7). Learning strategies are contextual and may be influenced by the situation (Fellenz & Conti, 1993).

Adult learners employ many types of strategies in their learning process. Research in this area has identified three distinctive groups of learning strategies preferences for adults. These learning strategies groups are titled Navigators, Problem Solvers, and Engagers (Conti & Kolody, 1999, p. 18).

Navigators are characterized by their external motivation, which relies heavily on planning and monitoring the learning task. They have the ability to identify resources and use external resources.

"Navigators are focused learners who chart a course for learning and follow it" (Conti & Kolody, 1999, p. 9).

Problem Solvers are characterized by testing assumptions and generating alternatives. They use many external aids and identify many resources. Problem Solvers tend not to do well on multiple-choice tests, mainly due to their need to generate alternatives. However, Problem Solvers are accepting of learning outcomes and open to other learning possibilities (pp. 11-13). Engagers are characterized by their need for learning to have meaning, and they rank

learning activity by virtue of importance. Engagers are passionate learners who love to learn (pp. 13-15).

The Problem

As health professionals begin to learn about child care in their attempt to carve out the new emerging profession of child care health consulting, there is a need for those doing the training in the field to understand the principles of adult learning. It is vital that trainers be cognizant of adult learning theories when attempting to design programs to train professionals such as child care health consultants (Knowles, 1980; Caffarella, 1994). Their understanding of individual learning strategy preferences can bring insight into the needs of the learner and can provide them crucial information for planning learning activities (Conti, Kolody, & Schneider, 1997, pp. 71-72).

However, "a definitive explanation for individual learning distinctions has continued to elude adult educators" (James, 2000, p. 55). Therefore, there is a need to know more about how the adult learner learns when changing careers in real-life situations. Training programs are being developed across the nation for child care health consultants (Britt, 2001; Healthy Child Care America, 1998). Opportunities exist for using adult

learning principles in curriculum development and program design for the child care health consultant. The problem is trainers are limited in targeting this group of learners due to lack of information about their learning strategy preferences and learning needs.

Purpose of the Study

The purpose of this study was to describe the child care health consultant's demographic characteristics, learning strategies, and preferred learning items and hindrances to learning. The study was intended to develop a learning profile of the child care health consultant. The result of this study will address the problem of limited knowledge about the child care health consultant as a learner.

Researcher in Context

This study was motivated by the desire and need to understand factors effecting successful training of child care health consultants. The last few years of the researcher's life has been dedicated to curriculum development for the child care health consultant. Of late, there has been involvement with the National Training Institute of Child Care Health Consultants in an advisory capacity influencing curriculum development.

Although much time have been devoted to developing

curriculum for child care health consultants, the researcher is a good example of the population described in this study, a health professional learning about child care. With over 30 years experience as a nurse, in 1993 a new position in early childhood education emerged for the researcher. This position later led to a career as a child care health consultant. The road to early childhood education was very different. Yet, early childhood education was exhilarating and exciting.

The transition from nurse to early childhood educator was easy enough. The state of Oklahoma approved persons with a degree to teach kindergarten after they had taken a prescribed set of workshops. The first workshop was teaching math skills to young children. The researcher arrived early, pen and paper in hand ready to sit and take notes for the next few hours. There was an amazement by what was witnessed in the classroom. There were big buckets filled with colourful items at each desk. In the corner there were large rolls of white butcher paper leaning against the wall. On the instructor's desk there was a bowl full of lima beans, paint, and other unidentifiable items. It look as if there were going to be a party. The entire environment was relaxed and playful. It was a different world.

Although, there were some similarities in this new world, clearly the instructional methods and learning tools were different. These instructional methods and learning tools made the curriculum alive, exciting and fun. There were opportunity for hands-on learning. The students got on the floor measuring things in every day life such as the distance of the rug. They counted how many lima beans in a jar. Students went outside to collect things in nature, counting and measuring as they picked up rocks and leaves. This was real world learning, we got dirty in an effort to experience learning. It was fun. And fun, was not a word often associated with nursing workshops previously attended.

Teaching had become a celebration of learning. After a short period as a kindergarten teacher, the researcher was offered a position as an outreach trainer for early childhood professionals. Health and safety issues seem to be a source of major concern for early childhood professionals. As a result, the outreach trainer position developed into a child care health consulting position, combining health knowledge with early childhood education. The researcher never forgot the enthusiasm felt in those earlier workshops. It was hoped that learning could be as exciting for health professionals learning about child

care.

Research Questions

Following the demographic profile of the participants, the following research questions were addressed.

1. What is the learning strategy profile of child care health consultants?
2. How do the learning strategies preferences of child care health consultants compare to the norms for ATLAS?
3. What is the relationship between the demographic characteristics of child care health consultants and their learning strategy preferences?
4. What are the health professionals' preferred tools for learning?
5. What are the health professionals' preferred methods for receiving instruction?
6. What is the relationship between the learning strategy preferences of child care health consultants and their preferences of learning

tools and instructional methods?

Several statistical procedures were used to answer the research questions. The following procedures were used for each research question:

| Question | Statistical Procedures |
|----------|--|
| 1 | Frequency distribution |
| 2 | Analysis of variance; Chi square |
| 3 | Analysis of variance |
| 4 | Frequency distribution; sum of ranking |
| 5 | Frequency distribution; sum of ranking |
| 6 | Analysis of variance; correlation; frequency distribution; mean; ranking; rating |

CHAPTER 2

REVIEW OF THE LITERATURE

Child Care in America

Historical Plight of Children

The state of child care in America can best be explained by first taking a quick historical look back at how America has treated its youngest and most precious commodity, children. As the turn of the twentieth century dawned, children were thought of as chattel. Many people during that period of time felt children needed to be toughened up, and often children were exposed to disease or harsh conditions in an effort to build their resistance. Medical care was just as severe. Physicians gave children medicated elixir containing up to 44% alcohol along with now recognizable detrimental drugs like opium and cocaine in inappropriate doses for the treatment of minor ailments. The medication often killed the child before the actual disease would, due to overdosing or toxicity (U.S. Department of Health Education & Welfare, 1976).

The health and well being of children was not considered an asset. "In New York city, one-third of the people who died every year were children under five years of age; one-fifth were babies less than a year old" (U.S.

Department of Health, Education & Welfare, 1976, p. 1).
Vaccine preventable diseases were rampant and children had little chance of surviving past their 21st birthday (U.S. Department of Health, Education & Welfare, 1976).

At the time of World War I, more babies died in the United States during that period than Americans killed in action; 281,000 soldiers died while 430,000 babies died (U.S. Department of Health Education & Welfare, 1976). However, about the same time mandatory health inspections and compulsory vaccinations were required in public schools; therefore, a hopeful tomorrow was right around the corner for America's children.

In 1924 Senator Morris Sheppard (Texas) and Representative Horace Mann Towner of Iowa introduced the Sheppard-Towner Act. It launched federal and state programs for the health care of women and infants (U.S. Department of Health Education & Welfare, 1976, p. 29). Women were working out of the home, and they needed additional help with their children. Unfortunately, this act was vehemently opposed to other women caring for the children if they were unmarried. Congress did not want single women that had never been mothers to care for other women's children.

Nonetheless, once the act passed, it provided for health stations, the mechanism for providing health services and education to families about caring for young children (U.S. Department of Health, Education, and Welfare, 1976), similar to the modern day health department. Child health consultation centers and public health nursing for children were established under the Sheppard-Towner Act during 1924 and 1929. Continued opposition surrounded the bill, but one position from the American Medical Association took a different direction. Although they lobbied against the bill, a small member faction of physicians broke off to form the American Academy of Pediatrics in 1923. The American Academy of Pediatrics is one of the strongest advocates for healthy and safe environments in child care. The mission of the American Academy of Pediatrics was to protect America's children by providing health services to them (U.S. Department of Health, Education, and Welfare, 1976).

After the Great Depression, Congress began to advocate basic rights for children, such as the right for children to be fed well and have adequate clothing. Another giant step for child health, and ultimately for the health of children in child care, was the passage of the Social Security Act of 1935. This act allowed for

further protection of children by enabling states to offer dental services, nutrition programs, care of crippled or disabled children, and services for homeless orphans. The Children's Bureau, founded under the Social Security Act, made strides in improving the health of children. Under the Social Security Act, many programs were provided to improve the health of infants and children. During the 1940's, a healthy baby was known as a "government baby" due to the multiple services available to them (U.S. Department of Health, Education, and Welfare, 1976). With the discovery of the polio vaccine by Dr. Jonas E. Salk in the 1950s, the health status of children took another positive leap forward.

Unfortunately, these gains in health care for infants and children were not experienced by people of color. Health disparity gaps between races continued to widen, and by 1970 minority infant and children health status had not improved much beyond the state of the turn of the century (U.S. Department of Health, Education, and Welfare, 1976). In 1961, President John F. Kennedy took the initiative to close the gap between races by laying the groundwork for what is now known as the National Institute of Child Health and Human Development (U.S. Department of Health Education & Welfare, 1976).

President Kennedy's efforts helped to improve health disparities among minority infant and children, but much work is still needed (Children's Defense Fund, 2002; NAEYC, 2001).

In America, the health status of children has tremendously improved since the nineteenth century. Children are no longer treated as chattel. However, the shift to both parents working outside of the home has created another problem for children, which is the out-of-home care environment. Mothers with children under the age of six are entering into the labor force at record numbers. Two of every three women will become employed, and thus those with children will have the potential need for quality child care (U.S. Department of Labor, 2001). As a result of the lack of "safe, affordable, quality child care and early childhood education when their parents work", many of today's children start school not prepared to learn (Children's Defense Fund, 2002, p. iv).

Child Care in America

Since the 1950's there have been national efforts to protect children in out-of-home care. One such effort to assure children were safe and healthy was the licensing and regulation of child care programs (Parrott & Mezey, 2003). Licensing's role is to "insure that the care

provided is good enough to do no harm to children -- that the building is safe and sanitary and that adequate developmental and caring relationships are provided to children" (Early Childhood Research and Policy Briefs, 2002, p. 1). Research has shown that the requiring of hygienic practices reduces the spread of infectious diseases in child care, thus improving the overall health of children (p. 1). Child care licensing merely requires compliance to minimum standards. Unfortunately, child care licensing is unable to command high quality child care, which goes beyond the basic requirements. Currently, in 14 states there is a waiting list for children to get into high quality child care that exceeds minimal standards (Children Defense Fund, 2002).

The investment in child care is easy to calculate. Every dollar spent by the United States government for quality early childhood care saves "\$7.00 by increasing the likelihood that children will be literate, employed, and enrolled in post secondary education and less likely to be school dropouts, dependent on welfare, or arrested for criminal activity or delinquency" (Children's Defense Fund, 2002, p. iix). It takes 26 cents a day to help supplement working families in their efforts to place

their children in quality early childhood education programs (Children's Defense Fund, 2002).

The Act to Leave No Child Behind (S. 940/H.R. 1990), which was federal legislation sponsored by Senator Christopher Dodd and Representative George Miller, aimed to assist working families of America to obtain quality child care. It increased the number of children receiving child care assistance from two to four million and improved child care quality through Child Care and Development Block Grant funds. Recent brain development research was integrated into the act. This research showed the relationship of early environmental stimuli, or the lack there of, to neuron development in infants and toddlers (Shonkoff & Phillips, 2000). The act was designed to improve the lives of children by encouraging legislation that promised a safe, healthy, quality early childhood environment during the first 3 years of a child's life (Children Defense Fund, 2002).

What quality child care looks like is simple. There are 13 indicators of quality child care. The indicators are as follows: prevention of child abuse, adequate immunization of children, appropriate staff ratio and group size, qualified directors, qualified teachers, appropriately trained staff, regularly conducted fire

drills, medication given safely, appropriate supervision and discipline, emergency plan in place, safe outdoor playground safe, toxic substances out of the reach of children, and adequate hand washing and diapering procedures (U.S. Department of Health and Human Services, 2002). Eight of the 13 indicators are related to health and safety.

Child Care In Oklahoma

Oklahoma is one of the nation's leaders in changing child care health standards. Since 1963, Oklahoma has made strives to improve the health and safety of children in child care. In 1998, sizeable efforts were made to improve the health and safety of children in child care (Oklahoma Child Care Licensing Requirements, 2002). Regulations were revised to include health and safety measures. Oklahoma's plan for improvement requires child care centers and family child care homes to comply with quality standards if they are to receive state subsidized financial reimbursement (Oklahoma Department of Human Services, 2002).

Oklahoma's plan for improvement resulted in differential reimbursement rates in child care based on higher standards of quality (Oklahoma Department of Human Services, 2002). Oklahoma's *Reaching for the Stars* is a

state-developed, tiered-reimbursement system in which a star rating indicates the level of quality. One star is initially given to all licensed centers. A one-plus star rating is given to centers that have gone the extra mile to improve quality standards. A two-star rating has additional quality standards, and a three-star rating is equivalent to national accredited standards. Each additional star allows the child care center or family child care home to access higher reimbursement for children receiving subsidy (Oklahoma Department of Human Services, 2002).

The health and safety of children are enhanced in accredited child care centers and family child care homes (American Public Health Association & American Academy of Pediatrics, 2002). Accreditation includes compliance to all legal requirements for protection of children in the child care environment, such as building codes, sanitation regulations, water quality, and fire protection (National Association for the Education of Young Children, 2002). Accredited programs provide for the physical, social, emotional, and cognitive development of children. They assure that each child has health evaluations, record of immunization, emergency contact information, and pertinent health history record (American Public Health Association

& American Academy of Pediatrics, 2002; National Association for the Education of Young Children, 2002). Meals and snacks are nutritious and meet U.S. Department of Agriculture in accreditation child care facilities. Therefore, accreditation is the ultimate standard of quality in child care today (National Association for the Education of Young Children, 2002).

The federal government offered many states funding through the Child Care and Development Block Grants for quality improvement in child care (Oklahoma Department of Human Services, 2002). With the federal money through the Child Care and Development Block Grant, Oklahoma provided high quality child care to families in need. It has been able to expand services to children living with special needs, and to low-income families. The federal funding also allowed Oklahoma and other states to provide comprehensive health services, which include access to medical care and health insurance in the child care setting (Oklahoma Department of Human Services, 2002).

Oklahoma also received major funding through the Bank of America Community Catalyst grants to improve the quality standards in child care. These grants have led to the piloting of a child care health consultant program and

to accreditation facilitation projects in the state (Oklahoma Department of Human Services, 2002).

Other states, like Oklahoma, are taking major strides to improve the health and safety of children in child care through building a network of child care health consultants. California, Connecticut, and North Carolina have developed a statewide infrastructure of child care health consultants that have been shown to be effective in improving the health and safety of children in child care (Bernzweig, 2003; Britt, 2001; Cianciolo, 2001; Crowley, 2000). Child care health consultants are particularly effective in assuring the health outcomes of infants in child care through the teaching of sanitation and hygiene practices (Dooling & Ulione, 2000).

Health of Children in Child Care

Infants are at greatest risk for harm because they have no voices to speak out against injustices (U.S. Department of Health and Human Services, 2002). Recent brain development research has shown the importance of the first three years of life (Shonkoff & Phillips, 2000; Shore, 1997). Environmental factors not only influence development but potentially could have dramatic effect on the circuitry of an infant's brain. The early care a child receives has a decisive and dramatic long-term

impact on how a child grows. Warm and responsive environments help babies thrive. Even so, negative experiences can have the same dramatic effect, seriously stifling growth and healthy development. Negative experiences, or lack of appropriate stimuli, are often associated with low-income environments deficient in basic health and safety standards (Shore, 1997).

The Children's Defense Fund (2002) has strongly advocated for children and has asserted that the child care environment should do no harm. Child care facilities should be safe places for children to attend (Children Defense Fund, 2002). The child care environment should promote policies and procedures that support children's health (Aronson, et al., 1999; Aronson, 1994, 2001). Child care center policies that promote health care coverage and provide preventative services such as immunizations are ideal for the health of children. Each child care staff member should be trained in such policies. He or she should also be trained in basic first aid to prevent injuries, in hygienic practices to prevent the spread of disease, and in methods to prevent child abuse (American Public Health Association & American Academy of Pediatrics, 2002).

Child Care Health Consultant

The child care health consultant is:

A physician, certified pediatric or family nurse practitioner, or registered nurse who has pediatric or child care experience and is knowledgeable in child care, licensing, and community resources. The health consultant provides guidance and assistance to child care staff on health aspects of the facility. (American Public Health Association & American Academy of Pediatrics, 2002, p. 486)

Child care health consultants play a vital role in the training of child care providers. They serve as a guide in dealing with health and safety issues. The child care health consultant instructs on preventative health care and safety practices, provides resources to promote the healthy development of children, and demonstrates methods to reduce illness and injury in the child care setting (Child Care Bureau & The Maternal and Child Health Bureau, 1999). The knowledge base of a child care health consultant should include:

- 1) a thorough understanding of national and local health and safety standards for out-of-home child care,
- 2) familiarity with how child care facilities conduct their day-to-day operations,
- 3) the ability to interpret child care licensing requirements,
- 4) the ability to recognize reportable incidents, such as child abuse and communicable diseases,
- 5) the ability to translate immunization and health records, and provide appropriate recommendations,
- 6) the ability to develop, conduct, and evaluate education programs on a variety of subjects

including, but not limited to, staff health, oral health, nutrition, and care of children living with special needs (American Public Health Association & American Academy of Pediatrics, 2002, p. 33).

Training of adult staff is a major component of the child care health consultant's job responsibilities.

"Training of child care staff has improved the quality of their health related behaviors and practices" (American Public Health Association & American Academy of Pediatrics, 2002, p. 401). To effect change and thus improve outcomes in child care, training is essential. "Good quality training, with imaginative and accessible methods of presentation supported by well-designed materials, will facilitate learning" (p. 401).

The child care health consultant's primary role is to provide information to effect a change in behavior. He or she is a facilitator of knowledge and skills. A facilitator is described as a coordinator, lecturer, and teacher (Knowles, 1986). Knowles set forth the following principles about the function of a facilitator to:

Expose the learners to new possibilities for self-fulfillment...help the learners clarify their own aspirations for improved performance...diagnose the gaps between their aspirations and their present level of performance...accept the learners as persons of worth and respect their feelings and ideas...build relationship of mutual trust and helpfulness with and among the learners by encouraging cooperative activities and

refraining from inducing competitiveness
and judgmentalness. (Knowles, 1986, pp. 7-8)

A good facilitator assures the environment, in which he or she functions, is conducive to the best possible outcome for child care providers, children and the families.

The child care health consultant also helps to write policies for the child care environment. Policies are critical in the child care environment, for they provide a point of reference and a standard of practice for the child care staff. Without policies in place, a child might arrive at a child care facility with an infectious disease which can quickly spread to the other children in care. Without policies, a child abuse situation might go unreported. Without policies, a child could get injured on playground equipment. The child care health consultant has the knowledge to write appropriate health and safety policies in the child care environment (Aronson, et al., 1999).

The expert knowledge needed by the child care health consultant allows for the ability to assess the child care environment to assure the facility has the equipment and supplies to make the policy work. Proper procedures need to be in place to support the policy. No policy can be effective without proper training. The child care health consultant trains child care staff, parents, and the

children in care on procedures to assure the policies are carried through. For example, children are taught how to properly wash their hands by their child care health consultant.

The child care health consultant may also develop a suitable curriculum for 4-year old children on when to wash and why they need to wash their hands. The presentation for young children might have the same basic theory as for an adult, but it would be greatly modified in time and nature of delivery. The child care health consultant should adjust the health and safety message according to the audience he or she serves.

The child care health consultant has a unique role. "This role requires knowledge that goes beyond traditional patient-centered pediatrics or public health approaches" (American Public Health Association & American Academy of Pediatrics, 2002, p. xx). Child care health consultants are advocates. They advocate for children within and outside of the child care environment. Child care health consultants persuasively enunciates and brings about the advancement of best practice on behalf of all children (North Carolina Child Care Advocacy Institute, 1998). "Few child care staff are trained as health professionals and few health professionals have training about the

community child care programs" (American Public Health Association & American Academy of Pediatrics, 2002, p. 32). The development of training programs as well as continuing education programs are needed for child care health consultants because such programs provide assurances that those in the field have consistency in knowledge and skills and hold to the same set of standards in the field (Cervero, 1989, pp. 513-524).

Traditional, formal training offerings may not be suitable for the child care health consultant (Marsick & Smedley, 1989). The child care health consultant is an adult learner. Therefore, he or she has life experience that can aid in learning (Knowles, 1970, 1980, 1990). Adult learners have an immediate need for practical application of knowledge and skills acquired (Merriam, 2001). Like other adult learners, the child care health consultant primary goal of learning is driven by learner needs and should be governed by adult learning principles (Lockwood, 1997; Merriam & Caffarella, 1999).

Adult Learning

Adult Education

The field of adult education dates back to 1920 as a recognizable field of academic study in universities (Merriam, 2001). There were only a few graduate programs

in adult education in the early days. These programs grew at an exponential rate by the mid-1960s (Jensen, Liveright, & Hallenbeck, 1964). The theory and practice of the field began to evolve to the current philosophical beliefs about adult learning.

Many theories are prevalent in the field of adult education. According to Knowles (1990), a "theory is a comprehensive coherent and internally consistent system of ideas about a set of phenomena" (p. 5). Merriam (2001) describes the field of adult education and learning in adulthood as having "a mosaic of theories, models, sets of principles, and explanations that, combined, compose the knowledge base of adult learning" (p. 3). Consequently, over the years there has been a cadre of definitions describing adult education. It is generally accepted that adult education is a "purposeful effort to foster learning by persons who have become largely responsible for their own comings and goings, in other words, adults" (Smith, 1982, p. 38). That is, "adult education is a process whereby persons whose major social roles are characteristic of adult status undertake systematic and sustained learning activities for the purpose of bringing about changes in knowledge, attitudes, values, or skills" (Darkenwald & Merriam, 1982, p. 9). As Lindeman stated,

"the whole of life is learning, therefore education has no ending" (1926, p. 4).

Learning in Adulthood

Adult education is the overall system in which learning by adults takes place. Adult learning is what takes place within the individual as opposed to a system. Adult education is a process of facilitating and managing the intentional, rather formal or informal, learning of adults (Draper, 1998).

Adult learning is different from adult education. Adult learning is the process adults seek to improve themselves or their society by increasing their cognitive and social skills. "Adult learning is probably the most studied topic in adult education. The learner, the learning process, and the context of learning form the cornerstone of the field of adult education" (Merriam, 2001, p. 1).

The origins of adult learning theory dates back to much of the behavioral science theorists such as Thorndike, Skinner, and Guthrie (Knowles, 1990). Adult learning is learning that results "from a transaction among adults in which experiences are interpreted, skills and knowledge are acquired, and action taken" (Brookfield, 1986, p. 4). This action is the outcome of change.

Learning involves change (Knowles, 1990). Learning is a change in the individual due to the interactions of the individual with the environment; this makes individuals more capable of dealing adequately with their surroundings (Burton, 1963; Haggard, 1963). Learning may be viewed as a modification in conduct as a consequence of experience (Cronbach, 1963). This change in the way people do something is an end product of learning and occurs as a result of motivation, retention, and transfer of information (Harris & Schwahn, 1961). Learning helps people to cope with life changes.

It is generally agreed upon that the goal for adult learning is very different than the goal of traditional kindergarten through 12th grade education. In traditional kindergarten through 12th grade education, learners are required to adjust themselves to the curriculum whereas in adult learning programs, the learners' interests and needs guide the curriculum. Traditional education is decontextualized with little hope of transferring the information into the real world (Merriam & Caffarella, 1999, p. 395). "Learning itself involves processes, understanding, and skills that can be learned and taught" (Smith, 1982, p. 15). It is intentional learning (Draper, 1998).

There are three major processes affecting the adult learner. The processes are planning, conducting, and evaluating (Smith, 1976, p. 6). Adult learners are involved in all of these processes. The planning process in adult learning establishes how adults will identify their needs and set goals. Adults select resources and identify strategies during the planning process. Adults are major players in planning their own learning experiences. A pre-planning session, perhaps by way of a needs analysis prior to the actual formal learning experience, can compel the adult to begin to plan for learning. The conducting process occurs when the adult learner carries out the learning activities. Conducting is the way the adult gives direction to her or his learning activities. It is also the management of information received during the learning process. The last phase of the process allows adult learners to measure the extent to which their goals have been met (Smith, 1976). Evaluation is a self-diagnosing or a self-appraisal of the learning. As adult learners use these processes in real life learning, they are able to maneuver through the process of acquiring skills and knowledge.

Programs for adults take into consideration this need for real-life learning and the shift is away from a

preoccupation with teaching to a focus on learning and the study of people learning (Fellenz & Conti, 1989, p. 1). Adult learning is active and fluid. Learning requires a change to take place in the brain, resulting in some sort of human response. Learning occurs on a cognitive as well as affective level; nonetheless, most would agree that some process or transformation happens with learning (Smith, 1982, p. 34). Adults seize the available learning opportunities to improve their lot in life. Learning is seen as an avenue to increase career success and flexibility. Some of the premises of adult learning include, but are not limited to, the concepts of andragogy, learning how to learn, and learning strategies.

Andragogy

Andragogy is foundational to the field of adult education and learning (Knowles, 1970, 1980, 1990; Merriam, 2001). Eugene Rosenstock, a German social scientist and educator, introduced the term "andragogy" in 1924 (Draper, 1998). It was later brought to the forefront by Malcolm Knowles (1970). Andragogy has been debated as to whether or not it is a single theory (Brookfield, 1986, p. 92). Andragogy is not a single theory, but part of the mosaic of adult learning described by Merriam (2001).

Andragogy's central element and strength is the learner-centered approach thereby making it the most relevant for the adult learner today (Knowles, 1970, 1980, 1990; Merriam, 2001; Merriam & Caffarella, 1999). The learner-centered approach prevents practitioners from wandering aimlessly (Kidd, 1959). Knowles (1980) developed a set of assumptions guiding adult learning theory. The assumptions of andragogy serve as the starting point for theory development in adult learning (Kidd, 1959).

The first assumption of andragogy deals with the maturity of the adult learner who moves from a state of dependency toward independence and self-directed learning (Knowles, 1980). Most believe that the adult learner is "someone who has an independent self-concept and who can direct his or her own learning" (Merriam, 2001, p. 5). Self-directed learning is "a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes" (Knowles, 1975, p. 18). Adults learn in relationship to a perceived need. They want to direct their education toward real-

life experience. Learning for adults produces great rewards such as self-esteem and a sense of personal self-worth (Houle, 1973, pp. 27-28). Adults use learning as a means to navigate their world, which they do by being at the helm.

Self-directed learning cannot be over-emphasized as a major precept for adult learning (Merriam & Caffarella, 1999, p. 289). Adults' self-direction causes them to take responsibility for their own lives and learning. However, it must be noted that self-directed learning does not take place in isolation nor in a vacuum; it "usually takes place in association with various kinds of helpers, such as teachers, tutors, mentors, resource people, and peers" (Knowles, 1975, p. 18).

The second assumption of andragogy deals with the level of experience adults possess (Knowles, 1980, p. 44). Adults have life experiences that are incredibly rich in resources (Knowles, 1980). Unlike children, the self-directing behavior of adults is a result of having experience on which to draw (Houle, 1961). Children do not have this type of experience, as they simply have not lived long enough. Adult learners have lived through a variety of events and undergone multiple circumstances to reach back for and draw upon (Houle, 1973). These

learners have a background in the subject by virtue of their lifelong experiences, and their experiences affect their learning (Merriam & Caffarella, 1999, pp. 193-194). Different than children, adults approach learning situations with an extensive history. The adult learner can capture previous experience on a subject to master new information (Merriam & Caffarella, 1999).

Technology provides an example of the second andragogical assumption. Adult learners are able to master the use of the computer when they draw upon their experience with typewriters. Notwithstanding, the facilitator of technology might have to help the adult learner to make the connection between the two areas.

Programs designed for the adult learner should take into account personal and work experience. For example, the curriculum planner might afford child care health consultants the opportunity to "expose their own feelings and contribute their resources in the spirit of mutual inquiry" (Knowles, 1986, pp. 7-8). Their experience should be used as a foundational point for curriculum development and goal setting (Knowles, 1986, pp. 7-8). Due to the nature of the role and responsibility of child care health consultants, it is rare that a novice would be

hired. Child care health consultants embark on this new field with years of professional and life experiences.

The third andragogical assumption focuses on adults' readiness to learn (Knowles, 1980). Adults enter into learning with a desire to learn for various reasons. Adults learn "because of a felt need or aspiration" (Houle, 1973, p. 27). Houle's (1961) typology of learning describes some of the reasons why adults enter into learning programs. The three types of learners are goal oriented, activity orientated, and learning orientated. Houle asserts that learners that are "goal orientated, are those who use education as a means of accomplishing fairly clear-cut objectives" (pp. 15-16). He describes activity-orientated learners as "those who take part because they find in the circumstance of the learning a meaning which has no necessary connection, or no connection at all, with the content or the announced purposes of the activity" (pp. 15-16). Learning-oriented learners as those that "seek knowledge for its own sake" (pp. 15-16). Regardless of the types of learners, Houle states, "they all had goals which they wished to achieve, they all found the process of learning enjoyable or significant, and they all felt that learning was worth while for its own sake" (p. 15). Because it is a new field, child care health

consultants have made a transition from one field of expertise, health care, to another field, the child care industry. By making this conscious decision to change fields, the child care health consultant must be in a position to be ready to learn.

The fourth assumption of andragogy is concerned with the learner's need for the immediate application of information. The adult learner's developmental task level requires learning related to life application (Brookfield, 1986, p. 92). The change in time perspective for the mature adult is away from future need to existing need (Merriam & Caffarella, 1999, p. 272). Learning tasks should begin with a definition of need (Houle, 1961, p. 52). Mature adults approach these tasks and opportunities very differently than children. Adults' social role requires acquisition of knowledge necessary for functioning in daily life (Houle, 1961, p. 81). Adults value their learning activity with the outcomes related to personal goals and objectives (Houle, 1973, pp. 27-28). "Many of the life events and transitions that adults face are peculiar to adulthood and require adjustments--adjustments often made through systematic learning activity" (Merriam & Caffarella, 1999, p. 391).

The fifth andragogical assumption deals with the maturity of adults and their internal motivation. This assumption asserts that as adults become aware of their own learning need, it produces a "much greater motivation to learn than an externally-diagnosed need" (Knowles, 1970, p. 284). Adults have the ability to be self-motivated, which causes them to be self-directed. Self-motivation is intrinsic and not provoked by outward activity as much as inward drive. Adults are further motivated beyond the immediate application of knowledge based on personal roles and responsibilities (Knowles, 1980, p. 43).

It should be noted that externally diagnosed needs can serve as a guide for the adult learner. Prior to attending a training session, each participant might be asked to complete a series of pre-test and comfort measure indicators. This allows the instructor and student to do a self-evaluation of needs and skills before learning occurs.

The sixth andragogical assumption is the need for an adult to know why he or she needs to learn something before learning occurs. This assumption was later added to the previously listed andragogical assumptions (Knowles, 1998, p. 64). The questioning by an adult learner should

not be perceived as rebellion against prescribed subject matter. Instead it is to prepare for the learning experience. Readiness to learn happens when the learner experiences a need to grasp some particular issue. Child care health consultant are often faced with a new and challenging health condition in children. The immediate need to acquire new knowledge may spark query of unrelated material in the curriculum. The need for new knowledge is intended by the learner to solve a specific problem, thus prompting a readiness as well as an eagerness to learn. Curriculum planners can keep the materials fresh by integrating new information into established materials.

Autonomy and self-directed learning are the nature of an adult learner, and they require an independent learning environment (Merriam & Caffarella, 1999, p. 301). A key element of adulthood is the ability to move from dependence to independence in learning activities. "Professionals must also be self-motivated and astute in order to identify training needs and locate training opportunities when presented with new challenges in a current position or when changing to a different employment setting" (Davis, 2000, p. 10). The child care health consultant is an autonomous person functioning independently in both job and learning activities.

Child care health consultants also want to make sure the population served experiences the best possible outcomes in their learning endeavors. "There are certain conditions of learning that are more conducive to growth and development than others" (Knowles, 1970, p. 52).

These conditions are:

- 1) The learners feel a need to learn;
- 2) The learning environment is characterized by physical comfort, mutual trust and respect, mutual helpfulness, freedom of expression, and acceptance of differences;
- 3) The learners perceive the goals of a learning experience to be their goals;
- 4) The learners accept a share of the responsibility for planning and operating a learning experience, and therefore have a feeling of commitment toward it;
- 5) The learners participate actively in the learning process;
- 6) The learning process is related to and makes use of the experience of the learners;
- 7) The learners have a sense of progress toward their goals. (pp. 52-53)

The role of the instructor of adult learning is that of a facilitator rather than an authority figure (Knowles, 1975). Befittingly, learning activities should be learner-centered in contrast to being teacher-centered. With adult learners, the focus is on learning and away from teacher-centered activities. Teacher-centered activities focus on what is happening with the teacher or the institution, as opposed to what is happening with the learner (Knowles, 1975). Knowles (1986) advocates

involving the adult learner, "in a mutual process of formulating learning objectives in which the needs of the learners, of the facilitators, of the institution, of the subject matter, and of society are taken in to account" (p. 7).

Knowles (1970) encourages the facilitator of adult learning to furnish a physical environment that is comfortable and help stimulate group discussion and human interaction. Simple things such as lighting, seating and room decor are important for adult learning (Burruss, 2001). For example, seating should be arranged to provide face to face contact with other adults in the room whenever possible.

Learning How to Learn

Understanding the process of learning is one of the most valuable tools adults can learn (Rogers, 1969). "The more one understands the self as learner, the better equipped one is to learn and take advantage of the myriad educational offerings that are now available" (Smith, 1982, p. 78). Thus, "learning how to learn involves processing, or acquiring, the knowledge and skill to learn effectively in whatever learning situation one encounters" (Smith, 1982, p. 19). No educational objective is more important for students than learning how to learn (Howe,

1984). Sternberg and Spear-Swerling (1996) advocate educators to teach skills for appropriate cognition. Smith (1982) believed adults should be taught how to learn, how to gather the necessary tools to be productive in their learning endeavors, and what knowledge is needed to produce the desired results (p. 19). The facilitator of adult learning should make deliberate attempts to make available the necessary tools needed for success.

The management of learning activities is known as a "learning how to learn" event. Adults have to become aware of their own learning: what they do with the knowledge they receive, how they process it, and what strategies they use to better manage their cognitive abilities. Learning how to learn is the cognitive process of:

Possessing, or acquiring, the knowledge and skill to learn effectively in whatever learning situation one encounters. If you possess the necessary knowledge and skill, you've learned how to learn; and when you help yourself or others to acquire that kind of knowledge or skill, the concept is also at work. (Smith, 1982, p. 19).

Learning how to learn has several components. Two of these deal with learner needs and training of the learner. Learner needs deal with what a learner needs to be successful. Part of understanding of one's own needs is to be aware of oneself as a learner, knowing basic skills

limitations, and recognizing general motivation toward learning (Smith, 1982, pp. 20-22). Training of the learner considers the organized activities necessary to increase learning in the learner (Smith, 1976). Training is the impartation of knowledge which can and should improve proficiency in some area (Smith, 1982, p. 25).

As learners are made aware of how they learn, they become better learners. "People find training acceptable when it... has the possibility of a larger payoff... and... clearly relates to previously encountered learning problems" (Smith, 1982, p. 140). This is the rationale for teaching students the process of discovering how to learn prior to engaging in the learning experience. "Teaching people how to learn enables education to nourish them" (p. 139).

Learning Strategies

"Learning strategies are the techniques or skills that an individual elects to use in order to accomplish a learning task" (Fellenz & Conti, 1989, p. 7). The learner uses learning strategies in both formal and informal settings. Learning occurs through the use of a variety of processes (Conti & Kolody, 1998a, p. 129). "The most critical actions that educators of adults can take are to recognize the equal importance of the various types of

adult learning and to advocate that people use them in whatever situation or setting they find themselves" (Merriam & Caffarella, 1999, p. 43).

The strategies by which a learner learns are grounded in the constructs of metacognition, metamotivation, memory, critical thinking, and management of resources (Conti & Kolody, 1998a, p. 132). Metacognition is the attentive awareness of how one assimilates knowledge. Metamotivation is how the learner keeps interest in the learning process. Memory is the learner's ability to retain, store and recall information. Critical thinking is the learner's ability to differentiate material and contemplate alternatives. Management of resources is the learner's ability to identify and use external assets (Conti & Kolody, 1998).

Some learning strategies are external behaviors acquired through experiences with learning which the learner has elected to use in order to accomplish a task, and some learning strategies are internal (Conti, Kolody, & Lockwood, 1997). Learning strategies can also be defined as behaviors of a learner that are intended to influence how the learner processes information (Mayer, 1988, pg. 11). "Learning strategies are those techniques or skills the learner has developed to use in both formal

and informal situations" (Conti & Kolody, 1998, p. 132). Learning strategies are contextual and may be influenced by the situation (Fellenz & Conti, 1993).

Sternberg and Spear-Swerling (1996) believed that learners should devise a strategy for processing information. Learners need to process information in such a way as to gain insight. Part of the strategy for processing information is the ability to manage resources or the "allocation of resources" (Sternberg & Spear-Swerling, 1996, p. 28). Learning strategies are the human ability to identify the appropriate sources needed to learn. It also involves the critical use of the resources, be it human or otherwise. Management of available resources is a necessary tool to solving real-life problems (Conti & Kolody, 1999). Identification and location is the first step to appropriate management of resources. The next step is to use the resources wisely. This step requires decisive reflection about the material in addition to evaluation of the information (Conti & Kolody, 1999). The last step involves bringing the human element into the mix of other non-human resources (Conti & Kolody, 1999).

An awareness of factors that stimulate and guide one's own learning defines the term metamotivation (Conti

& Kolody, 1993). Metamotivation means being cognizant of how or why one is motivated to participate in a learning activity. Metamotivation is defined as the attention, reward, enjoyment, and confidence associated with the learning task (Kolody, Conti, & Lockwood, 1997). However, metamotivation is a "nebulous construct" (Fellenz, 1993, p. 10) that is not easily defined. It should be noted, adults will endeavor to master certain skills or information when the information is of value to them (Wlodkowski, 1985).

Memory is the ability of humans to retain and recall information. Memory related to learning strategies is the ability of the learner to be aware of his or her own memory capacities. It deals with internal storage, external aids, and application of what has been learned (Conti, Kolody, & Lockwood, 1997). The ability to utilize memory skills requires mental processes of repositing, holding, and retrieval (Conti & Kolody, 1999). Memorization can be accomplished through external as well as internal mechanisms (Conti & Kolody, 1999).

Critical thinking is a reflective process of thinking. It involves the testing of assumptions, the ability to generate alternatives, and conditional acceptance (Conti, Kolody, & Lockwood, 1997). Critical

thinking is "narrowly, analytical thinking; broadly, any higher order thinking" (Sternberg and Spear-Swerling, 1996, p. 151). Critical thinking generally requires a high level of cognitive skills.

Critical thinking can be used for individual improvement. However, it does require a certain amount of creativity to be a critical thinker. Creativity is the ability to transcend traditional ideas into new transforming thoughts. The creative process allows learners to come up with their own ideas (Sternberg & Spear-Swerling, 1996). Taking it a step further, practical information processing takes learners' individual ideas and not just those told to them by an instructor to a functional level.

Metacognition involves "planning, monitoring, and adjusting" of learning activities (Conti & Kolody, 1999, p. 3). In these processes, the learner attempts "to figure out what information is relevant for the problem at hand" (Conti & Kolody, 1999, p. 93). The learner then decides "how to put together the relevant pieces of information" followed by relating, "new information to old information" (Conti & Kolody, 1999b, p. 93). "It is a conscious, reflective endeavor; it is one that requires

the learner to analyze, assess, and manage learning activities" (Conti & Kolody, 1999a, p. 3).

Learning strategy research conceptualization has led to the discovery of three distinct groups of learners (Conti & Kolody, 1995; Conti, Kolody, & Lockwood, 1997). This information has been implemented and validated in a variety of formal and informal settings (Ghost Bear; 2001, James, 2000; Mundy, 2002; Willyard, 2000). Research revealed adults "do form distinct groups based upon their pattern of learning strategy use" (Conti & Kolody, 1999a, p. 86). More recent studies have refined the earlier five groups of learners into four groups of learners and recently three distinctive groups of learners evenly proportion in society (James, 2000, Conti & Kolody, 1998).

As the typology of distinct groups of learners develops, it is not to pigeonhole the learner but to rather increase the teacher's knowledge about the learner. "Such labels can be beneficial to the selection of appropriate methods and techniques when they are used to focus understanding, discussion, and reflective thought about the learner; however, they can be detrimental if they are used to avoid critical thinking about the learner" (Conti & Kolody, 2004, p. 187). Increasing the teacher's awareness of the learner's learning strategy can

help the teacher to meet the learner's individual learning needs. As teachers recognize the unique differences among their students' learning behaviors, they will be able to help them. Knowing the types of learners to be encountered in a learning situation and their "characteristics can provide you with the advance information you need in order to select methods which have greatest potential for successfully facilitating the teaching-learning process" (Conti & Kolody, 1998a, p. 137). When individuals know more and are aware of their own learning, it is easier for them to learn how to learn.

Learning strategy instruments used early in the learning process provides an awareness for the facilitator to structure appropriate learning activities. Learning strategy instruments also makes the participants conscious of their own needs. Students can begin to take part in the planning of appropriate learning activities for themselves and thus play an active role in their own learning (Fleming & Mills, 1998).

The process of filling in the gaps of what the adult learners currently have and what learning strategies they need can be done by self-diagnosis with a learning strategy instrument. For example, a learner with strong affective characteristics can simply become aware of the

need to plan, which is a strong characteristic of a learner coming from more of the cognitive domain of learning. Likewise, the learner that has strong cognitive tendencies might be introduced to how to learn with more feelings, creativity, and passion (James, 2000).

Students can be taught to make use of learning strategies, linking certain strategies with specific tasks to be accomplished (O'Malley et al., 1988, p. 229). As far back as the 1980s, people like W. J. McKeachie (1988) believed in the importance of teaching learning strategies to students to improve their learning outcomes. The facilitator of learning can provide assistance in bridging the gap by teaching learning strategies and "helping an individual make more sensitive judgements about which of many possible directions he might take in his continuing self-development" (Knowles, 1970, pp. 283-284). Teaching cognitive skills alone is not enough to make good learners (Sternberg & Spear-Swerling, 1996). Learners must actively become involved in their thinking and learning processes.

As the emerging field of child care health consulting evolves, and training programs begin to surface, it is important to have input into the curriculum and design of programs for child care health consultants. Adult

educators should actively involve learners in becoming conscious of their learning needs as part of the program design (Knowles, 1970).

CHAPTER 3

METHODS AND PROCEDURES

Design

This study is a descriptive study. It was undertaken to describe the learning profile of child care health consultants, to identify preferred tools and methods health professionals desire when learning about child care, and to identify hindrances to learning. The following research questions were addressed.

1. What is the learning strategy profile of child care health consultants?
2. How do the learning strategies preferences of child care health consultants compare to the norms for ATLAS?
3. What is the relationship between the demographic characteristics of child care health consultants and their learning strategy preferences?
4. What are the health professionals' preferred tools for learning?
5. What are the health professionals' preferred methods for receiving instruction?

6. What is the relationship between the learning strategy preferences of child care health consultants and their preferences of learning tools and instructional methods?

"A descriptive study determines and reports the way things are" (Gay, 1987, pp. 10-11). Descriptive statistics "describe systematically the facts and characteristics of a given population or area of interest" (Merriam & Simpson, 1984, p. 58). The learning profile of the child care health consultant included the participant's age, gender, race, years in the field, educational level, population served, current certifications, years of experience, previous training programs attended, and participant's learning strategies preferences (see Appendix C).

Descriptive research is used to elicit "the status quo of some phenomenon" (Wiersma, 1995, p. 169). This allows for a rich, colorful picture of the occurrences. Descriptive research likewise provides possibilities for hypothesis development. It also sets the stage for the development of a proposition set forth as an explanation of some sort of phenomenon. In descriptive research, there is a systematic description of the facts and

characteristics of a specific group for better "identification of problems or justification of current conditions and practice" (Merriam & Simpson, 1984, p. 58). "Descriptive research is the most common form of research used in adult education" (p. 63). However, as descriptive research attempts to describe what is going on, it has strengths and limitations.

Descriptive research "allows the researcher to study relationships or events as they happen in human life situations" (Merriam & Simpson, 1984, p. 63). The descriptive research design study permits data not previously known to surface (Gay, 1987, pp. 189-190). "A descriptive statistic can summarize the distribution of a group of data, indicate the degree to which one event or characteristic is related to other event or characteristic" (Merriam & Simpson, 1984, p. 163). If the variables are examined separately, they might produce no significant conclusion. However, when variables are teased out using various statistical processes, they may reveal an effect on learning.

Qualitative and Quantitative Data

Descriptive research may be qualitative, quantitative, or both. Qualitative research was needed in this study to understand additional needs of the learner and to

add to the body of literature regarding adult learning. Qualitative research helps to clarify notions about the way things are and make misunderstood facts understandable (Wiersma, 1995). "Qualitative research often is used to assess the credibility of theory" (http://www.nsf.gov/pubs/2004/nsf04219_2.pdf). Qualitative data is the information which can be captured that is not numeric in nature. Qualitative data is "constructed by individuals in interaction with their world" (Merriam & Associates, 2002, p. 3). Qualitative data may not have quantifiability. Notwithstanding, it is constructed in reality which may change over time. "The use of qualitative research to evaluate mechanisms is especially valuable in research that combines quantitative and qualitative methods" (http://www.nsf.gov/pubs/2004/nsf04219_2.pdf).

Quantitative data is needed to quantify what already exists (Wiersma, 1995). Quantitative data is entered into a data base program and analyzed in numerical form (Gay, 1987). Quantitative data or statistical data is coded to formulate a mathematical score (Merriam & Simpson, 1984).

Sample

The population "is the group of interest to the researcher, the group to which she or he would like the

results of the study to be generalizable" (Gay, 1987, p. 102). In 2002, there were 3,668 child care health consultants nationwide. Of these, 36% volunteered their services and 68% were paid. Some child care health consultants work part time, while others work full time (Healthy Child Care America, 1999; National Training Institute of Child Care Health Consultant, 2002). The number of child care health consultants has increased from 2,002 reported in 2001 (National Training Institute of Child Care Health Consultant, 2002) to the current number. This growth of 83.22% in 1 year indicates a rapidly growing profession. The National Training Institute of Child Care Health Consultants (NTICCHC) at University of North Carolina has graduated approximately 200 train-the-trainer consultants who are also included in this number. The target population for this study was NTICCHC graduates, persons trained by the NTICCHC graduates, and persons who identify themselves as Child Care Health Consultants but who have not received any formal training in the field, an estimated 3,668 people.

"A sample is a strategically and systematically identified group of people or events that meets the criterion representative for a particular study" (Merriam & Simpson, 1984, p. 54). The sample for this study was

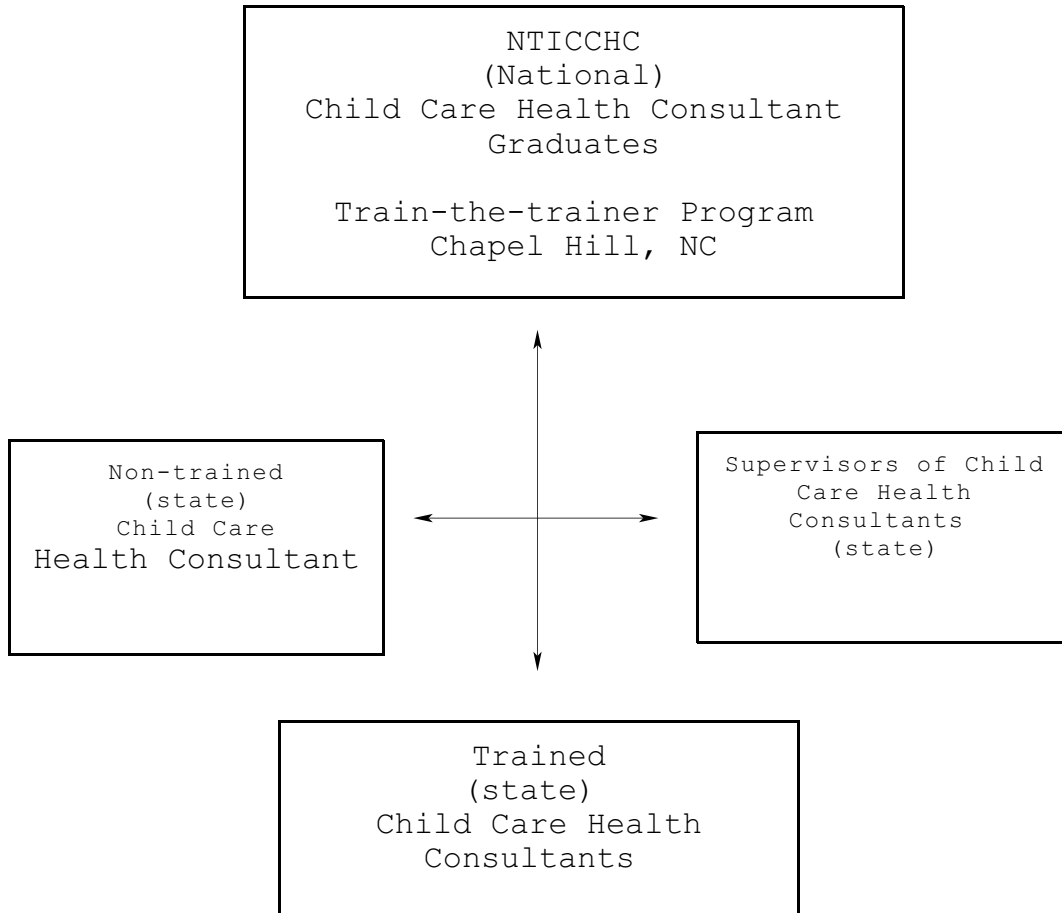
drawn from participants working in child care resource and referral agencies, child care health centers, public health departments, schools of nursing, and state maternal child and child care agencies (see Figure 1).

Participants were solicited at several local and national conferences, directly through a list serv, and by posting announcements encouraging participation in the study at the resource and referral agencies, child care non-profits organizations, and health departments. To assure the sample was chosen from the target population, queries were made throughout the nation. Participants were from Alabama, Alaska, Arkansas, California, Colorado, Connecticut, District of Columbia, Georgia, Idaho, Illinois, Indiana, Iowa, Maryland, Montana, Michigan, Missouri, Nevada, New Mexico, North Carolina, New Jersey, New York, Oklahoma, Pennsylvania, South Carolina, Texas, Tennessee, Utah, Vermont, Virginia, Washington, Wisconsin, Wyoming, and the United States Virgin Islands (see Figure 1).

All participants were given the option to participate on a voluntary basis by completing a survey on the Internet or by completing a paper copy of the survey with ATLAS attached. They were also assured the freedom to withdraw their consent and participation in this project

at any time without penalty by simply notifying the researcher.

Figure 1: Source of Population and Sample for Study



Instrumentation

Two surveys and the Assessing the Learning Strategy of Adults (ATLAS) instrument (see Appendix D) were used to collect data. A survey is a method by which data can be collected from a population to determine the current status of the population with respect to one or more variables (Gay, 1987). The first survey had 10 closed-

ended questions regarding the child care health consultant's demographic make-up and 5 open-ended questions dealing with things he or she preferred when learning and things found to hinder learning (see Appendix C).

A paper copy of the first survey was reviewed in August, 2001 and subsequently revised by Dr. Jonathan Kotch, University of North Carolina, at Chapel Hill, the coordinator of the National Training Institute of Child Care Health Consultants(see Figure 2). Five child care health consultants in North Carolina took the initial survey, with no revisions ensuing.

The second survey utilized responses to the first survey (see Appendix F). The individual responses from the qualitative data from the first survey were placed in ranking and rating order for the participants on the second survey. Both surveys utilized a paper copy and an online Internet version of the survey designed by the researcher (see Figure 2).

ATLAS

The learning strategy preferences of adults working in health care learning about the child care industry was assessed with the Assessing The Learning Strategies of Adults (ATLAS) instrument. ATLAS was developed for the

purpose of measuring learning strategies of adults in real-life situations (Conti & Kolody, 1999). It is an instrument designed to distinguish learning strategies (Conti & Kolody 1999, p. 16). It was developed "out of a need for a tool that was easy to administer, that could be completed rapidly, and that could be used immediately by both facilitators and learners" (Conti & Kolody, 1999, p. 16). ATLAS was used because learners are as diverse as the sands on a sea shore and because ATLAS provides additional information about them.

ATLAS identifies three distinct groups of learners. ATLAS was developed and validated "using the Self-Knowledge Inventory of Lifelong Learning Strategies (SKILLS) instrument database of 3,070 adults from diverse backgrounds" (Conti & Kolody, 1999, p. 86). It has been validated and implemented in a variety of settings (Ghost Bear, 2001, James, 2000, Mundy, 2002, Willyard, 2000).

The ATLAS instrument was used to provide an adequate assessment of individual learning strategy preferences in a quick and effortless manner (Conti & Kolody, 1999). The ATLAS instrument can be administered and completed in less than two minutes. The instrument consists of half-page sheets of standard sized 8.5"x 11" color coded paper in a bound format. Each sheet had clear instructions to aid a

responder through the process (see Appendix E). As the participants responded to phases that depicted their individual learning strategy, they were instructed to go to a specific color-coded card descriptive of that strategy (Conti & Kolody, 1999).

ATLAS is a valid instrument (Conti & Kolody, 1991, 1998, 1999). Validity can be defined as "the degree to which a test measures what it is supposed to measure" (Gay, 1987, p. 128). Validity is the extent to which interpretation of the scores is appropriate, meaningful and useful for the intended application of the results (Gay, 1987). Appropriateness of the interpretation is concerned with the specific use of results and soundness of the researcher's proposed interpretation, which leads the usefulness of an instrument. Usability is the practicality of the evaluation procedure. There are three primary types of validity used in educational research: construct validity, content validity, and criterion validity (Gay, 1987).

Construct validity is the degree to which a test measures an intended hypothetical construct or dimensions of a theory (Gay, 1987). "The process of establishing construct validity for ATLAS was to synthesize the results of numerous research studies using SKILLS and to

consolidate the results" (Conti & Kolody, 1999a, p. 16). This data set produced "3,070 cases in which the data were in similar form" (p. 17). The five constructs of ATLAS were established by using the items and database from the SKILLS instrument. They are Metacognition, Metamotivation, Memory, Critical Thinking, and Resource Management (Conti & Fellenz, 1991; Conti & Kolody, 1998, pp. 110-111; Conti & Kolody, 1999b).

Content validity "is the degree to which a test measures an intended content area" (Gay, 1987, p. 129). ATLAS "content validity is concerned with the degree to which the items are representative of learning strategy characteristics of the three groups identified in the SKILLS research (Conti & Kolody, 1999 p. 18). The valid items from SKILLS were used in a cluster analysis to identify groups that existed in the database. The content validity dealt with constructing accurate items to differentiate these groups (Conti & Kolody, 1998b, pp. 110-111; Conti & Kolody, 1999, pp. 16-18). This was accomplished by conducting a series of discriminant analysis with groups from the cluster analysis and the items from the existing instrument as the discriminating variables. The structure matrix from each of these

analyzes was used to construct each of the items in the instrument.

Criterion-related validity has to do with assessing and comparing the results or scores of the instrument with an external criteria which also measures the same construct (Gay, 1987). This "was established by comparing ATLAS scores to actual group placement using SKILLS" (Conti & Kolody, 1998, p. 112-113). When the ATLAS instrument was administered to respondents in Alberta, Montana, and Oklahoma, 70% of the respondent's scores corresponded to SKILLS instrument grouping (Conti & Kolody, 1998). The ATLAS instrument was further developed based on the feedback from focus groups (Conti & Kolody, 1999). Subsequently, the instrument was developed using the described procedure and to respondents' perception of their responses on the new instrument (Ghost Bear, 2001, pp. 83-84).

ATLAS is a reliable instrument. Reliability is "the accuracy or precision of a measuring instrument" (Kerlinger, 1986, p. 405). Reliability occurs when the researcher can measure the same set of objects over and over with the same measuring instrument and thereby produce the same results (p. 405). Reliability allows the researcher to feel confidence that the test will produce

the same results, time after time. In test-retest, ATLAS produced a reliability of .87 (Ghost Bear, 2001).

Reliability provides the consistency that makes validity possible. There is no validity without reliability.

Procedure

Prior to sending out the data collection instruments, all materials were approved by the Institutional Review Board (IRB). The IRB addresses the ethical treatment of participants. They assure participants are protected from harm and their privacy is maintained while the researcher attempts to collect information (Merriam & Simpson, 1984).

Descriptive data were collected in two ways. Some of the data were collected from a response to survey items with limited choices, and other data were collected through open-ended questions. "The purpose of any measurement procedure is to produce trustworthy evidence relevant to the research question being asked" (Merriam & Simpson, 1984, p. 126). The survey and the ATLAS instrument was initially mailed with a cover letter (Appendix B) to 20 child care health consultants on the researcher's professional data base. Permission was granted by the researcher for participants to copy the survey and share it with other child care health consultants in their organization (see Figure 2).

The survey and the ATLAS instrument were posted on the Internet. An invitation to participate in the online survey was electronically mailed to 150 child care health consultants with an undisclosed amount forwarded via the list serve to other child care health consultants. Some of the identified child care health consultants on the researcher's personal data base were responsible for the training or supervision of other consultants in their state and thus had their own data bases of e-mail addresses. These child care health consultants were part of a network of professional colleagues.

If participants consented to participate, they clicked on the link to the website which had been embedded in the e-mail. Respondents gave consent by clicking on the link to the instrument. Responses were totally anonymous because the participants were not asked their names and there was not a way for them to be identified once they clicked to go to the link.

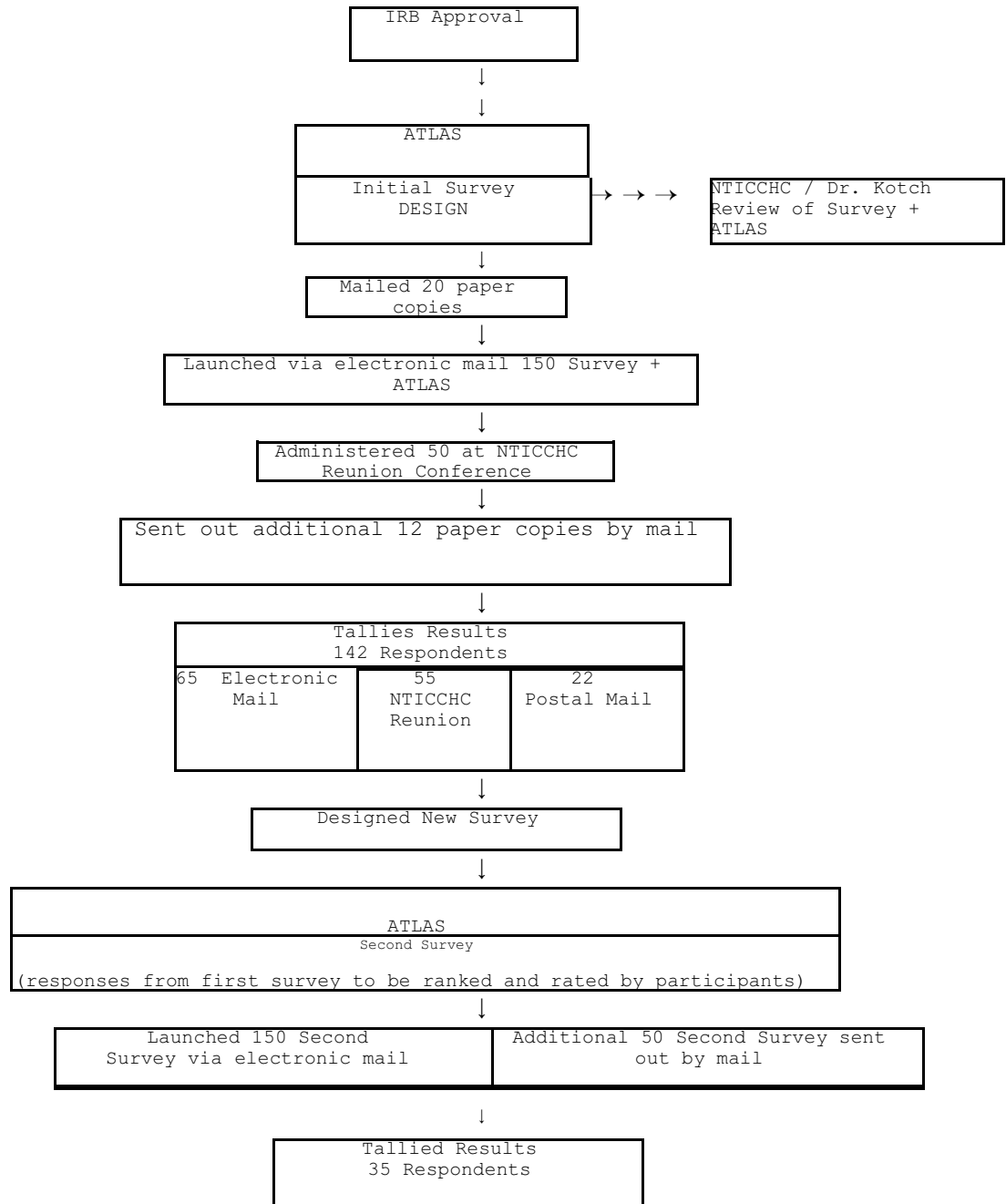
Permission was granted by Dr. Jonathan Kotch of the National Training Institute of Child Care Health Consultant to also administer the survey during the reunion of child care health consultants in Washington, D.C.. Fifty surveys along with ATLAS were distributed at the reunion with follow-up via Internet. Twelve follow-up

surveys were sent by mail for participants that lost the original survey and requested another. Data from the paper version was manually entered into a data base program. The online version automatically was downloaded into the data base program.

The second survey solicited the same respondents from the first survey. There were 50 participants sent a paper copy of the survey through the mail along with a letter requesting participation and a 150 e-mail with an attachment of the survey (see Figure 2). Follow-up telephone calls were made to all respondents for whom the researcher had contact information. The feedback from the respondents in the second survey was not as forthcoming as the first round of surveying. The researcher continued to solicit participation from round one participants, only to receive new participants. An unknown amount of surveys were forward to other colleagues in the field. The online version of the survey and the paper copy version was combined in the Excel file, coded and than transferred into the appropriate software program. The quantitative data were input into Statistic Program for the Social Sciences (SPSS) for analysis. The qualitative data were placed into Word Perfect, a word processing program,

sorted, and then placed into Excel, a spreadsheet program (see Figure 2).

Figure 2: Procedure flow chart



Data Analysis

In this study, participants revealed their preferences for learning, and each preference was analyzed in relationship to learning strategies. However, learning is not a single construct and cannot be treated as such. In this study, learning was treated as the multidimensional construct that it is. Learning is also not a unitary dependent variable, but is multivariant (Cronbach & Snow, 1977, p. 116). This study identified the appropriate instructional methods or learning tools through ranking and rating which would produce the optimal outcome for the learner, as in the research of Cronbach and Snow (1977).

The procedure for analyzing the data utilized the logic of Cronbach and Snow's (1977) aptitude-treatment interaction (ATI). The aptitude-treatment research defines aptitude as any measurable "characteristic of a person that forecasts his probability of success under a given treatment" (Cronbach & Snow, 1977, p. 6). These measurable characteristics should have the ability to have an impact on the learning experience of the person (Snow, 1991). Treatment is defined as a "manipulable variable" which is some item which can be added to change or alter instruction (Cronbach & Snow, 1977, p. 6). ATI research

endeavors to address the question of how individual learners learn and how to individually target teaching methods to each learner.

Cronbach and Snow's (1977) research isolated the individual learners' response to different instructional treatments. They did this by applying the scientific method in a formula they coined "aptitude x treatment interaction" (Cronbach & Snow, 1977, p. 6). This model utilized experimental and mutual relationship of behavior science in combination to understand interaction. The aptitude--treatment research theory is an experimental design. Although this study does not use an experimental design and is descriptive in nature, the premise is very similar. Cronbach and Snow (1977) felt that certain instructional strategies could produce the optimal learning outcomes when correctly matched to the learner.

To fully understand the logic of ATI it is important to examine the components that make up the whole. Aptitude is defined as a person's knowledge, skills and personality. Treatment is defined as the environment that nourishes the learning process (Shute & Towle, 2003). Cronbach and Snow wanted to examine the "match between individual differences and learning environments and how variation in learning environment elicited or suited

different patterns of aptitude" (Shute & Towle, 2003, p. 106).

The ATI type of interaction model interrelates learning strategy preferences with preferred instructional methods. "An interaction is said to be present when a situation has one effect on one kind of person and a different effect on another" (Cronbach & Snow, 1977, p. 3). This same model has also been used by Ausburn and Ausburn (1978) to link "information-processing requirements of learning task and abilities/preferences of learners for various types of processing" (p. 337). In that study, planned supplantation occurred in which modifications were made in the instructional method for learners having difficulty mastering a task (Ausburn & Ausburn, 1978).

Ranking, Rating, and Correlating Data

Ranking items in data analysis expresses the significance of an item or subject (Gay, 1987). "Rank data are involved when, instead of using a score for each subject, subjects are arranged in order of score and each subject is assigned a rank from one to how ever many subjects there are" (Gay, 1987, p. 237).

In this study rated survey items were placed on a Likert Scale. Rating of items in data analysis helps to

measure attitudes about a subject (Gay, 1987). This is different from ranking, because ranking expresses the significance of an item or subject. Rating gives individual value to the item. "Attitude scales attempt to determine what an individual believes, perceives, or feels" (Gay, 1987, p. 146). For instance, if the same question is asked regarding preferred instructional methods, "discussion" might rank high at a 10, but when placed on a Likert scale and rated, might produce a 3 or no preference. Thus the participant might not feel as strongly about "discussion", although ranking it high.

A Likert scale asks an individual to respond to a series of statements by indicating whether she or he strongly agrees (SA), agrees (A), is undecided (U), disagrees (D), or strongly disagrees (SD) with each statement. Each response is associated with a point value, and an individual's score is determined by summing the point values for each statement. (Gay, 1987, p. 146)

The Likert scale was chosen to reveal the relationship between the responses found in the first survey and participant's learning strategy. The learning tools used by the participants in the first survey were ranked in numerical order in the second survey, according to most-liked as '1' and least-liked as '7'. The same items were rated using a Likert scale with the coding of '1' being 'Strongly Disagree' and '5' being 'Strongly

Agree'.

The instructional methods were ranked in the same manner as the preferred learning tools, except that they were divided into two categories. The first category was internal instructional methods and the second category was external instructional methods. Again, the same methods were rated using the Likert scale of agree/disagree.

Sometimes problems occur when participants are asked to rate items. The quandary for many participants is known as giving the rated item either the "halo effect" or "generosity error" (Gay, 1987, p. 147). The halo effect is how the raters' feelings about a subject or presentation of a situation affects how they rate the item. For instance, "discussion" might be the highest-rated item, but if the rater really likes an instructor that never provides discussion, he/she might rate discussion very low.

The generosity error has the same effect on rating items. "The generosity error is the tendency of a rater to give the person being rated the benefit of the doubt whenever the rater does not have enough knowledge to make an objective rating" (Gay, 1987, p. 148). This is seen when a participant might want to rate discussion high, but because his/her favorite instructor never uses discussion,

the participant might assume the instructor would use discussion if the opportunity presented itself. Potential inaccuracies can be avoided by providing the participants with as much clear information about the items they are rating or ranking as possible (Gay, 1987).

The average response of participants gave the mean scores, and how spread out the scores were is indicated by the standard deviation (Gay, 1987, p. 255). The mean is an "arithmetic average of a set of scores" (Gay, 1987, p. 546). The standard deviation is "a measure of variability that is the positive square root of the variance" (Wiersma, 1995, p. 469).

Lastly, the learning tools were correlated with each other. Correlation is "the extent of relationship between two variables" (Wiersma, 1995, p. 464). Correlation is a number that can vary from -1.00 to +1.00 and indicates what kind of relationship exists between two variables, positive or negative in nature, as indicated by the sign of the correlation coefficient and the strength of the relationship. It indicates the extent to which the coefficient differs from zero (Mitchell & Jolley, 1988, p. 400).

CHAPTER 4

FINDINGS

Introduction

The child care health consultant is a health professional who is knowledgeable about preventive health care, safety practices, resources to promote the healthy development of children, measures to reduce illness, and injury prevention in child care settings (Blue Print for Action, 1999; Dooling & Ulione, 2000). The learning strategy profile of the child care health consultant is important for continuing quality professional education. In an effort to understand the learning needs of child care health consultants, data were collected using two rounds of surveys and the Assessing The Learning Strategies of Adults (ATLAS) instrument.

Data were collected from 142 volunteer respondents via mail and online Internet during the first round of surveys. There were 22 respondents who responded by mail, 55 respondents at the National Training Institute for Child Care Health Consultant's Reunion and 65 Internet respondents. Information was solicited about the participant's demographic profile, learning strategy preferences, instructional methods and learning tools they considered helpful, instructional methods and learning

tools that hindered their learning, and suggestions for changing training for child care health consultants (see Appendix C).

Quantitative data was analyzed with frequency counts, chi-square test, cross tabulation, and analysis of variance. To capture the qualitative aspect of the study, the respondents were able to freely write in their opinions concerning their learning.

Profile of First Survey Respondents

The participants in this study were overwhelmingly White females (see Table 1). Almost all (94.4%) were females. The group was predominately White (85.9%) with only a few minorities. The group had a median age of 48 and mean age of 46.90. Similarly, in studies conducted by the University of California at San Francisco and the University of North Carolina at Chapel Hill, researchers also found 95% of the child care health consultants were female, middle age, and white (Bernzweig, 2003).

Females have dominated the nursing profession. However, a recent study performed by the American Nurses Association (2002) showed a slightly increasing number of male registered nurses at 146,902 (5.4%), which increased 225% from 1992 (nursingworld.org/readroom/fsdemogrpt.htm). The child care field also has been predominately female,

with the latest government survey revealing that 94.8% of child care providers are female (Current Population Survey, 2002). Child care and nursing are fields requiring a certain amount of nurturing, which is traditionally viewed as a female role. Therefore, the findings in this study are congruent with both fields under investigation.

Table 1: Frequency of Demographic Variables

| Variable | Frequency | Percent |
|-----------------|-----------|---------|
| Gender | | |
| Female | 134 | 94.4 |
| Male | 8 | 5.6 |
| Race | | |
| White | 122 | 85.9 |
| African America | 12 | 8.5 |
| Asian | 6 | 4.2 |
| Hispanic | 1 | 0.7 |
| No response | 1 | 0.7 |
| Age | | |
| Under 35 | 11 | 7.7 |
| 35 - 39 | 10 | 7 |
| 40 - 44 | 24 | 16.8 |
| 45 - 49 | 41 | 28.7 |
| 50 - 55 | 32 | 22.4 |
| over 55 | 19 | 13.3 |

In this study, the ethnic distribution of respondents were predominately White with African Americans being the largest non-white ethnic group (see Table 1). The next highest represented minority was Asians, followed by Hispanics. There were no identified Native Americans. One participant did not identify race.

The nursing and child care professions are not as culturally diverse as many other fields. The racial makeup of the nursing field is Whites at 2,452,975 (88%) and Non Whites at 12% (nursingworld.org/readroom/fsdemogrpt.htm). The distribution of ethnic minorities in registered nursing in the United States is as follows: African American 133,041, Asian 93,415, Hispanic 54,861, and Native Americans 13,040 (nursingworld.org/readroom/fsdemogrpt.htm). Therefore the racial distribution of the people in this study is congruent with the people in the American Nurses Association 2000 survey (nursingworld.org/readroom/fsdemogrpt.htm). There are 1,332,000 child care workers in America. Over two-thirds of child care workers are White (67.7%) and the remaining are non-White. Of the minority, 16.2% are Hispanics, 15.4% are African Americans, and 2.7% are Asians (Current Population Survey, 2002). No significant amount of data was reported for other racial groups (<ftp://ftp.bls.gov/pub/special.request/If/aat11.txt>). Therefore, the child care health consultants are also representative of the child care workforce.

The median age of the 142 respondents reporting was 48 (see Table 1). The mean age was 46.90 with a standard deviation of 8.27. Slightly over one-third (35.7%) of the

respondents were over 50 years of age, and less than one-tenth (9.1%) of the respondents were 36 years of age or younger. The range of ages was from 24 through 66. The American Nurses Association survey revealed the average age of nurses was 45.2 years (nursingworld.org/readroom/fsdemogrpt.htm). Of the current working population of registered nurses, 9.1% are under the age of 30, 18.3% are between the ages of 30 and 35, and 31.7% are between 35 and 40. There is a concern in nursing that the number of young nurses in the field is dwindling and older nurses are retiring early (nursingworld.org/readroom/fsdemogrpt.htm). Thus, the profile of the respondents was very similar to the profile of participants in a study of child care health consultants in Connecticut that reported 90% White, 98% female, and a mean age of 43 years (Crowley, 2000). The gender, age, and ethnicity of those participating in this study is comparable to demographic data of other similar studies of child care health consultants (Crowley, 2000).

Professional Preparation, Education and Experience

The skills, knowledge, and experience necessary to become a child care health consultant far exceeds that of entry-level health professionals. Child care health consultants are generally well educated (Crowley, 2000, p.

69). The Associates degree is an entry level degree for registered nurses (nursingworld.org/readroom/fsdemogrpt.htm). In the state of Oklahoma, minimum eligibility for employment as a child care health consultant requires a bachelor degree (<http://www.occrra.net>). In this study, 126 (88.8%) respondents were baccalaureate prepared or above (see Table 2). Nearly half of the respondents had graduate degrees (44.4%) which included master's in public health, master's in education, master's of science in nursing, doctorate in nursing, and doctorate in education.

Table 2: Frequency of Educational Degree

| Educational Level | Frequency | Percent |
|-------------------|-----------|---------|
| Associate's | 16 | 11.3 |
| Bachelor's | 63 | 44.3 |
| Master's | 43 | 30.3 |
| Doctorate | 20 | 14.1 |

Certifications are indicators of knowledge and skill level. Well over three-fourths (84%) of the respondents in this study had certification in addition to their formal degree. There was a variety of certification and specialized training noted among respondents. Some respondents were trained in West ED, an infant/toddler specialization. Some were certified in an infant assessment program by Nursing Child Assessment Satellite Training. Respondents had certification to teach cardiopulmonary resuscitation and first aid. Other

respondents indicated they were certified playground inspectors and certified National Highway Traffic Safety Administration car seat technicians.

Participants were advanced practice nurse practitioners as well as physicians. Among the respondents, 8 (5%) were physicians, and of these 4 (2%) indicated they were board certified or a fellow of American Academy of Pediatrics. Although child care health consultants typically are nurses or physicians (Cianciolo, 2001), five respondents indicated that they were early childhood professionals as well as licensed health professionals. Due to the fact that early childhood professionals have limited education and experience in health and safety, ideally this position would be held by a health professional (Cianciolo, 2001). In this study 90% of the participants were nurses.

The Healthy Child Care America has campaigned for a child care system which includes health consultation as a key link to improving the health and safety of children (Blue Print for Action, 1999). The National Training Institute of Child Care Health Consultant, sponsored by the University of North Carolina in Chapel Hill, trains child care health consultants to train other child care health consultants. This train-the-trainer model builds

an infrastructure of child care health consultants nationwide. Over half (51.4%) of the respondents in this study attended the National Training Institute for Child Care Health Consultants. Over one-fourth (28.2%) attended another kind of training for certification as a child care health consultant, and much of that was state sponsored. States that sponsored programs included Colorado, Louisiana, Missouri, New York, and Virginia. The University of Wyoming and the University of California at San Francisco also sponsored training programs for the respondents. About one-fifth (20.3%) did not indicate any type of training program to become certified as a child care health consultant. However, nearly two-thirds (61.3%) of the respondents indicated that they either were responsible for building statewide infrastructures of child care health consultants and training child care health consultants in their states.

Child care health consulting tends to attract experienced persons (Crowley, 2000, p. 69; Ulione & Crowley, 1997). In the field of health, they average 30 years experience. Respondents had as many as 46 years and as little as 1 year working knowledge in the field of child care health consulting. The mean years of experience working as a child care health consultant was

4.38, with a median of 6.00 and a standard deviation of 2.00. Child Care Health Consultants enter into the field of consulting with a great deal of experience in health care, but they lack extensive experience or knowledge in this new emerging field (Bernzweig, 2003).

The 142 participants responding to the first survey worked with a variety of out-of-home child care services (see Table 3), and most of these provided services in a combination of settings. Caring for Our Children: The National Health and Safety Standards (2002) describes out-of-home child care as any kind of developmental or educational services which are away from a child's family environment. These services include child care centers, family child care homes, part-time facilities, drop-in child care, HeadStart centers, military child care, and child care for mildly ill children. Child care health consultants function in a variety of settings. However, three-fourths worked in child care centers while less than one-fourth worked in military child care.

Table 3: Frequency of Place of Service

| Place of Service Variable | Frequency | Percent |
|---------------------------|-----------|---------|
| Child Care Center | 112 | 78.9 |
| Infant/Toddler Center | 104 | 73.2 |
| Family Child Care Home | 93 | 65.5 |
| Headstart | 77 | 54.2 |
| Military | 17 | 12 |

Learning Strategy Preference

The respondents were given Assessing The Learning Strategies of Adults (ATLAS) to identify their learning strategies. Learning strategies are defined as the methods or techniques learners have developed to best help them organize information and process learning. ATLAS identifies three learning strategy preferences: Navigators, Problem Solvers, and Engagers. Navigators are learners that concentrate on learning processes that are mainly external to them. These learners rely extensively on planning and monitoring (Conti & Kolody, 1999). Navigators are able to identify resources and use those resources decisively. Problem Solvers are also able to identify external resources. These learners are able to generate alternatives and like to assumptions (Conti & Kolody, 1999). Engagers tend to pursue learning activities that will produce either personal growth, personal change, or self-development (Conti & Kolody, 1999a, p. 14). They are characterized by their need for learning to have meaning.

In the general population, there is an fairly equal distribution of Navigators, Problem Solvers, and Engagers (see Table 4). The expected distribution is 36.5% for Navigators, 31.7% for Problem Solver, and 31.8% for

Engagers (Conti & Kolody, 1998). In this study, the distribution was fairly equal among the participants who took the ATLAS instrument, with only 7 more Navigators than Problem Solvers and 7 more Problem Solvers than Engagers (see Table 4). More than 56 (39.4%) of the participants reported that ATLAS was reflective of what they believed to be their individual learning strategy. A chi-square test was used to determine whether or not these observations were "significantly different from what might be effected by chance" (Huck, Cormier, & Bounds, 1974, p. 218).

Chi-square "compares proportions actually observed in a study with proportions expected to be seen if they are significantly different" (Gay, 1987, p. 542). There was no significant difference in the distribution of the observed frequency to the expected frequency of the ATLAS data ($\chi^2 = .797$, $df = 2$, $p = .671$).

Table 4: Distribution of ATLAS

| Groups | Observed | | Expected | |
|----------------|-----------|---------|-----------|---------|
| | Frequency | Percent | Frequency | Percent |
| Navigator | 53 | 37.3 | 50.4 | 36.5 |
| Problem Solver | 46 | 32.4 | 43.7 | 31.7 |
| Engager | 39 | 27.5 | 43.9 | 31.8 |

Analysis of variance was used to analyze the

relationship between ATLAS and the demographic variables of gender and age (see Table 5). Respondents were grouped according to their learning strategy preference category on ATLAS. With a criterion level of .05, no differences were found for either of these variables. A chi-square analysis was conducted for race, and this analysis also showed that there was no significant relationship between race and learning strategy preference ($\chi^2=$, df =2, p=.37). This is consistent with other adult learning strategy studies that found no relationship between learning strategies and demographic variables (Conti & Kolody, 1998; Conti, Kolody, & Schneider, 1997).

Table 5: ANOVA of Age and Gender by Learning Strategies

| Groups | <u>SS</u> | <u>df</u> | <u>MS</u> | <u>F</u> | <u>p</u> |
|---------|-----------|-----------|-----------|----------|----------|
| Age | | | | | |
| Between | 301.87 | 2 | 150.94 | 2.24 | 0.11 |
| Within | 8761.38 | 130 | 67.4 | | |
| Gender | | | | | |
| Between | 0.16 | 2 | 0.08 | 1.69 | 0.19 |
| Within | 6.48 | 135 | 0.05 | | |

Instructional Methods

The respondents had various comments about methods and tools useful for their learning in addition to many methods and tools which they deem not useful for their learning. The respondents were asked to write their comments in a text box. Internet responses were

transported electronically into an Excel data base file and handwritten responses were manually typed into the Excel data base file. The participants submitted 291 different items that were helpful for them in their learning and 110 different hindrances to learning. Their items were organized and sorted in such a way to make sense of the data. The helpful learning items and hindrances produced 20 major topic areas and the hindrances produced eight major topic areas. Items that were listed less than twice were placed in the miscellaneous category.

The identified topics were further divided into two categories which were learning tools or equipment needed for learning and instructional methods. Instructional methods were divided into external methods, which were those used by a teacher or facilitator of learning, and internal methods, which were those used primarily by the learner.

Helpful Learning Items

Participants cited many learning items as helpful (see Table 6). The miscellaneous category was the largest by far of any other category listed. Items placed in the miscellaneous category were items that could not be placed in any other clear-cut category. An example would be

algorithms, didactic dyads, and icebreakers.

Of the closely defined categories, using hands-on activities in instruction was the largest category. Hands-on learning was cited individually 41 times and included experiential learning and interactive learning. Hands-on learning is related to other topics such as demonstration, group interaction, and role playing. Hands-on approach to learning was described in several ways. This included engaging in the learning process, making site visits, doing field work, and having active participation in learning.

Hands-on learning such as making site visits or daily field work is extending the classroom lesson into the real world. Field work should be "closely relevant and timely to what is being taught in concurrent courses and which allows continued reinforcement and practice of what has been learned" (Tornyay & Thompson, 1987, p. 145). A 46-year-old Engager stated we should "have mentors and go into (child care) centers with a seasoned child care health consultant". A site visit to a local child care center would be considered applicable field work. Site visits to child care centers allow the learner to develop clinical competencies and self-confidence in an unfamiliar situation (Tornyay & Thompson, 1987). Hands-on learning

experiences takes the learner from a passive to an active learning process. Hands-on learning experience provides a very important "link between critical thinking and student involvement" (Ulrich and Glendon, 1999, p. 5).

Experiential learning and interactive experiences are other related hands-on activities described by the participants in this study. Experiential learning was defined by the participants in this study as an activity that can reinforce the subject presented by adding an experience such as making a visit to a child care center. Interactive experiences are defined as an activity that the learner can participate in to reinforce the material presented (Seaman & Fellenz, 1989).

Nursing is a profession that requires the practical application of knowledge and deals regularly with real-life situations (Lockwood, 1997). Child care health consulting is no exception to this. A 53-year-old Engager stated, "Health professionals need more exposure to the daily challenges of child care providers to better understand delivery of information" (53-year-old, Engager). A 41-year-old Problem Solver felt instruction would be enhanced by bringing in presenters "who work directly in the department of study." Either way, instruction that is reinforced through hands-on

experiences from the real world, that is interactive in nature and allows for participation in the learning process is seen as beneficial instructional methods.

Real-life learning can be encouraged through group interaction (Seaman & Fellenz, 1989). Group interaction was described as having useful activities in which three to four participants gather to accomplish a specific purpose. Group interaction occurs when learners have an opportunity to share knowledge and experiences. "In situations where group interaction is used, the purpose of the learning activity is to stimulate thought at the highest cognitive levels by filtering new knowledge and concepts through prior experiences" (Seaman & Fellenz, 1989, p. 121). Group work as a constructive teaching and learning strategy should have a particular learning objective in mind (Lockwood, 1997). A series of unrelated tasks will not produce the desired results. A 42-year-old Navigator stated that all curriculum should be "focused and unified." Therefore, group work or interaction must be carefully designed by the instructor.

Participants had a great preference for handouts in learning. Handouts are described as materials, references, instructional fact sheets, journal articles, and documents used to support the information being

presented and which could be taken home and read at another time. They commonly are used to supplement the learning and to provide a rich resource library for the child care health consultant. This learning resource is given to the learner to be read at another time outside of the actual training session. Respondents in this study listed handouts 25 times as helpful to learning. Respondents listed handouts as a hindrance to learning only once in relation to having too many at a time, and three times in relation to not having handouts available with either overhead presentations or Power Point presentations. Power Point presentation was sometimes described by the respondents as visual aids and sometimes as a handout. Therefore, in this study it was not always clear if the respondents were referring to a visual aid, handout or the Power Point presentation.

Demonstration was described as the instructor illustrating a procedure and then allowing the student to have an opportunity to repeat the procedure. Demonstration should be part of the instructional method following a discussion or lecture (Greaves, 1987). With this method, the instructor can provide feedback to the students regarding their technique on a skill and the students are allowed to practice the skill over and over

until they have mastered it. Students should have the opportunity to feel, handle, take apart, and manipulate items to be used in their practice. "Telling students about things has to be supplemented by showing them and allowing them to use as many senses as possible" (Greaves, 1987, p. 62).

As voluntary learners, adults will participate willingly in discussion when it is meaningful and relevant to their lives (Brookfield, 1986, Knowles, 1970, 1990). The past experience of learners can be captured as a real-life learning opportunity, affording discussion activity the potential for direct relevance to the learner's circumstances (Brookfield, 1986, p. 38). Participants also said that discussion after viewing a video is very beneficial because it helps to identify real-life situations that trigger communication among participants. Moreover, video viewing stimulates the senses by adding a sight and sound combination not found in other learning tools (Ulrich & Glendon, 1999).

In this study, computer work or web-based training was only mentioned twice, even though nursing is technologically advanced. A 58-year-old Navigator stated that "if there is a tremendous amount of detail (instruction) then computerized training programs help me

anchor specific details”.

Table 6: Frequency of Helpful Learning Items

| Topic Areas | Frequency | Percentage |
|------------------------------------|-----------|------------|
| Internal Methods | | |
| Hands-on Experiences | 41 | 14.0% |
| Discussion | 23 | 7.9 |
| Group Activities | 10 | 3.4% |
| Real World orField Experience | 4 | 1.3% |
| Role Playing | 4 | 1.3% |
| External Methods | | |
| Handouts | 27 | 9.2% |
| Humorous Speakers or Guest Speaker | 10 | 3.4% |
| Lecture | 10 | 3.4% |
| A Variety of Instructional Methods | 6 | 2.0% |
| Demonstration | 5 | 1.7% |
| Outlines | 3 | 1.0% |
| Case Studies | 3 | 1.0% |
| Learning Tools | | |
| Visual Aids | 23 | 7.9% |
| Video Only | 13 | 4.4% |
| Power Point Presentations | 7 | 2.4% |
| Audio Visual Equipment (TV/VCR) | 7 | 2.4% |
| Overhead Transparencies | 7 | 2.4% |
| Flip Charts | 3 | 1.0% |
| Items Not Categorized | | |
| Miscellaneous | 85 | 29.2% |
| Total | 291 | 100.0% |

Hindrances to Learning

Respondents in the first survey noted several items that impeded learning (see Table 7). However, some hindrances to learning were less well-defined and dealt with extremes, such as too many of one thing or another. For instance, respondents did not appreciate multiple graphs, charts, and diagrams as a means of facilitating learning.

Respondents cited too much talking or lecturing by the instructor as a primary hindrance to learning. This was the largest single area mentioned as either a hindrance or a aid to learning and made up over half (54%) of the responses. Lecturing was cited as a hindrance as well as a helpful instructional method. Lectures can come in two forms: one in which the lecturer does all the talking and the other in which there is involvement by the participants (Tornyay & Thompson, 1987, pp. 96-99). A 52-year old Engager cited "listening to lectures too long" as a hindrance to learning, specifically lectures delivered in a linear fashion in which a speaker talks for a long period of time without any variation in materials and with a monotone voice. Lectures delivered with visual aids such as a flip chart, handouts, or overhead transparencies are less linear in nature. A 43-year-old Navigator said

that "lecture, too much facts and information without practical component", is a hindrance to learning. When lectures are delivered as the only instructional method, respondents in this study found lectures to be boring and difficult to sit through. A self-described high energy 51-year-old Problem Solver related, I "tend to nod off when speakers use lecture only".

Participants in this study express the need to break up the monotony of a lecture by using audio-visual equipment or handouts. Lecturing with discussion, or an informal lecture is the most common form of lecturing to professionals. The combination of the two instructional methods allows for the giving of information, for the analysis of information, and for the development of concepts and real-life application (Tornyay & Thompson, 1987). A lecture by itself is not an effective means of teaching adults. "Lecture is of little use if the educator or trainer is seeking to promote critical thinking or to encourage adults to be more flexible in their attitudes" (Brookfield, 1986, p. 12).

The second most mentioned area of hindrance to learning was the lack of variation in the instructional techniques. Nearly one-fifth (18%) of the respondents wanted a balance of modalities, not all or none. Many

cited that a hindrance to learning was using techniques to extremes. This occurred with items that were helpful to learning, such as in the case of handouts. If trainers provided the participants in this study with too many handouts, what was once thought of as a helpful instructional method turned into a hindrance to learning. Other hindrances to learning included the use of too many games and introductory activities prior to beginning instruction. Self-study materials were mentioned as a hindrance when the teacher did not review the materials and expected the participants to initiate learning on their own.

Role playing, an activity in which the learner is highly engaged, was listed 11 times as a hindrance to learning and 3 times as a helpful instructional method. Role playing is when the learner is given a part to act out using an unrehearsed dramatic characterization related to the topic presented (Greaves, 1987, p. 81). For instance, the topic might be child abuse reporting, and the learners will each pretend to play a role in the reporting process. One learner might be the agency representative who received the call about child abuse. Another learner could be the caller, and another learner might be a classroom teacher or administrator witnessing

the report. Role playing requires a higher level of skill and knowledge base to perform accurately as compared to simply taken in information by the learner.

One disadvantage of role playing is that it can put an individual in an awkward situation where "you are expected to perform before you have enough information to do a good job" (56-year-old, Engager). Instead of using role playing, one participant noted that it might be a more valuable experience and provide more understanding of the role to shadow "a child care health consultant for a day to view a day in the life of a consultant" (29-year-old, Engager).

In training situations the style of the speaker plays as important a role as the instructional method or tool he/she used. Participants in this study wanted instructors that were interested and responsive to the needs of the learner. A 57-year-old Engager remarked, "Humor and enthusiasm for the topic goes a long way." The instructor needs "to believe in and be interested in the topic" (45-year-old Navigator). The curriculum is as much the instructor as books, handouts, and overhead transparencies (Knowles, 1970, 1986).

Table 7: Frequency of Items that Hindered Learning

| Topic Areas | Frequency | Percentage |
|--|-----------|------------|
| Internal Methods | | |
| Role Playing | 11 | 10.0% |
| Lack of Time | 3 | 3.0% |
| External Methods | | |
| Lecture | 45 | 54.0% |
| Lack of Different Modalities & Balance | 20 | 18.0% |
| Long days & Uncomfortable Environment | 5 | 4.0% |
| Speaker Lacking Enthusiasm | 3 | 3.0% |
| Disorganized Facilitator | 3 | 3.0% |
| Learning Tools | | |
| None | 0 | 0.0% |
| Items Not Categorized | | |
| Miscellaneous Hindrances | 6 | 5.0% |
| Total | 110 | 100.0% |

Training for child care health consultants has taken place throughout the nation. However, in 1998 one of the first formalized train-the-trainer programs was at the National Training Institute for Child Care Health Consultants in Chapel Hill, North Carolina. The National Training Institute for Child Care Health Consultants devised a training format in which participants attended from approximately 8:00 a.m. until 5:00 p.m. over a 2 to 3 day period. Many states have adopted similar formats, including Oklahoma. Respondents in this study noted long

days and an uncomfortable environment for training as hindrances to learning. Respondents in this study also did not enjoy multiple unrelated subjects or tasks thrown together without any sequential flow. Often training for child care health consultants has multiple subjects, and many times they are unrelated subjects in the 8-hour training day, such as infection control, child abuse, consultation skills, and injury prevention. A respondent referred to this type of training as marathon training where participants sit in a classroom and are fed subject after subject over a period of several days. A 47-year-old Problem Solver commented:

It's so hard to attend or teach in "marathon" training. It's hard not to have long training due to comprehensive nature of child care health consulting training and the number of topics to be covered.

The pace of a training session can hinder or help the learning process. Having adequate breaks is another consideration for the adult learner (Knowles, 1970).

Methods and Learning Strategy Preferences

Some responses to the first survey were indicative of all adult learners, while other responses were unique to individual learning strategy preferences. The participating Navigators, Problem Solvers, and Engagers revealed differences in the ways they described helpful

and unhelpful instructional methods.

Navigators

Navigators are learners who prefer to chart their course of learning and follow it. A 45-year-old Navigator asserted that information presented "without direction or usefulness" was a hindrance to learning. Outlines and agendas are important to Navigators. Navigators are focused learners that prefer curriculum outcomes that are logically planned and organized and that allow them to plan a method for completion (Conti & Kolody, 1999, p. 9). For example, a 42-year-old Navigator preferred a "focused and unified curriculum that is practical and easy to implement".

Adult learners that are Navigators characteristically do not like to work in groups (Conti & Kolody, 1999, p. 11). However, one 43-year-old Navigator liked "small group sharing". Furthermore, a 54-year-old Navigator with 2 years experience requested to have:

More opportunity to work in small groups, to network and learn from colleagues. More information from child care professionals about what works, how child care health consultants have challenged/benefitted their programs.

Hence, Navigators might find small group work useful when experts in the field are present to direct the discussion. This can lead to gaining knowledge and being able to set

goals and is not just for the sake of discussion alone. Navigators in this study perceived colleagues with more experience as a resource for doing their job. Navigators "initiate a learning activity by looking externally at the utilization of resources that will help them accomplish the learning task and by immediately beginning to narrow and focus the resources" (Conti & Kolody, 2004, p. 185). An expert in a small group may be targeted by the Navigator as the most effective external resource.

Although the Navigators in this study expressed a liking for small group work, it was not the group work or the discussion that goes on in the group that they liked as much as the activity that, when properly structured, can help them to gain the new information they need to plan their course of action. Often small group activities include a great deal of discussion. A 58-year-old Navigator with 22-years experience expressed, "Discussion provides me an opportunity to use what was just presented."

Navigators prefer "either mental or written lists of everything they need to accomplish" (James, 2000, p. 109). They need to know about the time required to complete a task so prioritizing can be done. For a 37-year-old Navigator with 1 year of experience, outlines that could

be taken home were beneficial. Outlines of the course content allowed the respondent to go back and review learning objectives to assure he/she stayed on target.

Problem Solvers

Problem Solvers are inquisitive learners who like to ask questions. They are creative, intuitive, and tend to be open to alternative thinking and new ideas (Conti & Kolody, 1999). Problem Solvers tend to be independent thinkers and doers. They have "a desire to do things for themselves" (James, 2000, p. 111), sometime that has a potential to isolate them from other learners. Problem Solvers are learners who rely heavily on all the strategies in the area of critical thinking. They tend to test assumptions and generate alternatives. As Problem Solvers begin to test assumptions, they need to be able to have time for the teacher to explain items in detail and ask multiple questions (James, 2000, p. 119).

Typically, Problem Solvers are noted for not liking excessive lectures, especially when the instructor reads directly from the text book (Conti & Kolody, 1999). The Problem Solvers in this study were consistent with these characteristics. For them, reading out the book, using a monotone voice, or presenting too many facts were the most disliked instructional methods. They described lecturing

as auditory and didactic. This is not surprising, because Problem Solvers are more apt to provide detailed descriptions of examples (Ghost Bear, 2001). Problem Solvers are known story tellers. "They enjoy the process of telling the story more than worrying about its completion" (Conti & Kolody, 2004). Likewise, an instructor that lacks this story telling quality would prove to be dull in the eyes of a Problem Solver.

Problem Solvers in this study did not like the speaker to appear rushed or not have enough time to complete the presentation. A 45-year-old Problem Solver argues that she did not like instructors that were rigid, "sticking to the format with no room for group participation". Two other Problem Solvers in this study felt that the instructor's failure to understand the learners' needs was a hindrance to learning.

Problem Solvers also like to share in groups and discussions like the Navigators in this study. They enjoyed participating in discussion activities particularly brainstorming activities. Problem Solvers enjoy discussion activities, especially the asking of questions in the group. This questioning stimulates conversation during the small group work. Problem Solvers "will often ask questions in class just to help others

understand better, even if they do not want to know the answer" (Conti & Kolody, 2004, p. 186). A Problem Solver in this study remarked, "I do like to ask many questions when I learn; being a Problem Solver makes sense to me now!"

Engagers

Engagers are passionate learners. A 57-year-old Engager believed that if the instructor did not let the learners know they were valued, learning was less likely to occur. Engagers learn best when they are active in a meaningful way in the learning process (Conti & Kolody, 1999). An Engager said, "Yeah, if I don't think a subject is necessary, I could never get in to it." This confirmed an important characteristic of Engagers: they do not like being bored (James, 2000, p. 114). Boredom for an Engager is lack of engagement in the learning process (Conti & Kolody, 2004). However, once committed to an activity, Engagers are known to become wholeheartedly involved with the learning process (James, 2000, p. 119).

Engagers also like small group sharing but for different reasons than the Navigators and Problem Solvers. Engagers love to interact with people (James, 2000). Engagers do not like to be spectators; they love to learn with feeling and deep affection. An experienced child

care health consultant with 15 years in the field felt that "more small group work with identified topics or problems" (44-year-old, Engager) is needed. The Engagers viewed group work as a way to gain new information.

For a 34-year-old Engager, a hindrance to learning is when the discussion gets side-tracked about nursing issues instead of dealing with consulting issues. Engagers wanted to keep focused on the reason they were at the training section and not veer off to other subjects because Engagers' focus is the result of being engaged in the subject matter. The role of the facilitator during discussion activities is to keep the group on task and avoid the pursuit of tangents, thereby causing the discussion to be non-productive (Tornyay & Thompson, 1987, p. 125). Veering off the topic frustrates Navigators because it is inefficient. It may provide Problem Solvers with opportunities for more stories and examples; but it creates boredom for the Engager.

Even more than the other learning strategy groups, Engagers wanted the facilitator to provide them with enrichment material related to the presentation. They desired the instructor to provide a connection to the additional materials provided with the learning activity. Engagers are more interested in the process of learning

than the final end product. The instructor should create a relationship between the learner, the instructor, and the material used (Conti & Kolody, 2004). A 40-year-old Engager said:

I dislike a presenter who just stands and reads. I consider this an insult, especially if the audience has identical materials in front of them!

Future Training

Respondents were asked what changes could be made to improve future child care health consultant training. The majority of the participants in this study were responsible for training other child care health consultants new to the field. As active trainers, child care health consultants perceived themselves as experts in the field. A 49-year old respondent disclosed that many nurses are high achievers and feel they always needed to immediately know the correct response to any situation. She encouraged trainers to get new child care health consultants comfortable with not always having the answer right away. This respondent felt trainers should help new child care health consultants to formulate the best answer through a systematic process of critical thinking.

Training for child care health consultants can be improved by responding to the needs of this emerging profession. A veteran child care health consultant with

18 years experience expressed that she needed a:

[B]roader understanding of how consultation works--consensus building skills for problem solving, development of...clients, and prioritization plan tasks to achieve what most needs to be done.(52-year-old, Problem Solver).

Respondents in this study also wanted to hear from experts in the field. They wanted presentations by child abuse workers, dentists, social service providers, and other outside experts to further their understanding of the health system infrastructure.

Respondents felt principles of adult learning should be taught as part of the curriculum. A 40-year-old Problem Solver wanted to "learn more about adult learning strategies" as part of the curriculum. A 38-year-old male Engager in the study expressed:

I appreciate knowing why I never seem to fit into a traditional classroom setting[s]. I found them boring and not applicable, yet I thoroughly took delight in my work at the health department as a child care health consultant. I felt taking ATLAS opened my eyes to my own learning strategy and better equipped me to learn.

Second Survey Respondents

In the second survey, there were 35 respondents. Some of the respondents were the same from the first round of survey, however some were not. There were 150 queries by electronic mail and no queries by standard mail. The survey gathered quantitative data related to the 291

identified helpful items and 110 identified hindrances to learning. There were 27 separate topics placed in three categories of either learning tools (equipment items), external instructional methods, or internal instructions methods (see Appendix F).

The respondents from the first survey were contacted electronically and asked to take part in the second survey. In addition, other child care health consultants were asked to respond. Of these six previous and 29 new participants responded, for a total of 35 respondents. New respondents were the result of new child care health consultants in the position. Continued solicitation of respondents was unsuccessful. A low response rate like this may have been related to lack of interest or lack of time (Gay, 1987). The learning strategy preferences were distributed as follows for the 35 participants in this study: Navigators--11 (31.4%), Problem Solvers--15 (42.9%), and Engagers--9 (25.7%). No significant difference was noted with this group's learning strategy preference as compared to the first round of survey participants learning strategy preferences.

Learning Tools

Learning tools are equipment used to enhance learning. The participants were asked to both rank and

rate the learning tools. Ranking requires participants to choose between something they might like equally as well and is relative. The ranking process always deals with the relationship of one item to another item. On the other hand, the rating process considers the feelings a respondent has concerning a specific item and it does not force comparison of two things that are liked equally as well, it is absolute.

Participants ranked learning tools using a numerical ranking of one to seven with one being the most liked learning tool and seven, being the least-liked learning tool (see Table 8). Using the sum of rank as a guide statistic for each topic, Power Point presentations ranked the highest and audio-visual ranked second for liked tools. Audio only was only cited three times in this study as a hindrance to learning in the first survey, but participants in the second survey ranked it the least-liked learning tool (see Table 8). The audio only method refers to when the voice of the instructor is the only means of teaching, such as when using an audio taped lecture and no accompanied lecture notes or handouts.

Video only is when the participant views a screen with pictures, such as with a slide presentation. In the case of video only, there is no accompaniment of a

speaker's voice or other sound effects.

Table 8: Sum of Ranking for Learning Tools

| Learning Tool | Rank | Sum of Rank |
|---------------------------------|------|-------------|
| Power Point presentations | 1 | 75 |
| Visual aids | 2 | 99 |
| Overhead transparencies | 3 | 114 |
| Audio visual equipment (TV/VCR) | 4 | 115 |
| Flip charts | 5 | 133 |
| Video only equipment | 6 | 183 |
| Audio only equipment | 7 | 225 |

The frequency distribution revealed consistency among two responses. Power Point presentations were ranked first by nearly half (48.6%) of the participants and second by another 22.9%. Similarly, audio only was ranked last by 80% of participants, and video only was ranked next to last by over half (57.1%) of the participants. The other tools had a greater amount of variance in their distribution.

Table 9: Frequency of Rankings for Learning Tools

| Ranking | Power Point | Audio Visual | Visual Aid | Overhead | Flip charts | Video only | Audio only |
|---------|-------------|--------------|------------|----------|-------------|------------|------------|
| 1 | 17 | 8 | 5 | 4 | 2 | 0 | 1 |
| 2 | 8 | 7 | 9 | 6 | 5 | 1 | 0 |
| 3 | 4 | 10 | 5 | 9 | 4 | 3 | 0 |
| 4 | 1 | 5 | 8 | 8 | 10 | 2 | 0 |
| 5 | 4 | 3 | 5 | 4 | 9 | 6 | 2 |
| 6 | 1 | 2 | 1 | 2 | 4 | 20 | 3 |
| 7 | 0 | 0 | 2 | 1 | 0 | 2 | 28 |
| Total | 35 | 35 | 35 | 34 | 34 | 34 | 34 |

However, to assess how individuals felt about a specific learning tool, the participants were asked to

rate each tool (see Table 10). A 5-point Likert rating scale was used with the following values: 1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, and 5-Strongly Agree. When asked to rate learning items, participants again felt that Power Point presentations were a very effective learning tool. The mean score was 4.44 with standard deviation of 0.96. The frequency distribution noted the number of participants strongly agreeing to the efficacy of Power Point presentations was 22 (62.8%) (see Table 11). The mean scores for Power Point presentation, visual aids, audio visual equipment (TV/VCR) and overhead transparencies were only .30 apart.

Using audio only was the least ranked learning tool, the mean rating score was 1.53, with standard deviation of .75 (see Table 10). Frequency distribution for participants strongly disagreeing that audio only should be used as a learning tool was 20 (57.1%) (see Table 11).

Table 10: Mean of Rating for Learning Tools

| Order | Tool | Mean | SD |
|-------|---------------------------------|------|------|
| 1 | Power Point presentation | 4.44 | 0.96 |
| 2 | Visual Aids | 4.33 | 0.85 |
| 3 | Audio visual equipment (TV/VCR) | 4.26 | 0.71 |
| 4 | Overhead transparencies | 4.18 | 0.87 |
| 5 | Flip chart | 3.85 | 0.89 |
| 6 | Video only | 2.76 | 1.16 |
| 7 | Audio only | 1.53 | 0.75 |

Table 11: Frequency of Ratings for Learning Tools

| Rating | Power Point | Visual Aids | Audio Visual Equipment (TV/VCR) | Overhead Transparencies | Flip Charts | Video Only | Audio Only |
|--------|-------------|-------------|---------------------------------|-------------------------|-------------|------------|------------|
| 1 | 1 | 1 | 0 | 0 | 1 | 6 | 20 |
| 2 | 1 | 0 | 1 | 3 | 1 | 8 | 11 |
| 3 | 2 | 2 | 2 | 1 | 7 | 9 | 2 |
| 4 | 8 | 14 | 18 | 17 | 18 | 10 | 1 |
| 5 | 22 | 16 | 13 | 13 | 7 | 1 | 0 |
| Total | 34 | 33 | 34 | 34 | 34 | 34 | 34 |

Although the number of participants was small, an analysis of variance was conducted to explore the relationship of the rating of the various teaching tools and learning strategies. The participants were grouped by their learning strategy preference on ATLAS, and a separate one-way analysis of variance was conducted for each learning tool. Using the criterion level of 0.05, there were no significant differences among learning strategy preference groups on the rating of the specific learning tools (see Table 12).

Table 12: ANOVA of Learning Tools with Learning Strategies

| Tools | <u>SS</u> | <u>df</u> | <u>MS</u> | <u>F</u> | <u>p</u> |
|-------------|-----------|-----------|-----------|----------|----------|
| Video | | | | | |
| Between | 5.54 | 2 | 2.77 | 2.12 | 0.14 |
| Within | 40.49 | 31 | 1.31 | | |
| Audio | | | | | |
| Between | 4.73 | 2 | 2.36 | 1.97 | 0.16 |
| Within | 37.30 | 31 | 1.20 | | |
| Visual Aids | | | | | |
| Between | 4.62 | 2 | 2.31 | 0.82 | 0.45 |
| Within | 90.53 | 32 | 2.83 | | |
| Flip Charts | | | | | |
| Between | 1.88 | 2 | 0.94 | 0.45 | 0.64 |

| | | | | | |
|--------------------------|-------|----|------|------|------|
| Within | 64.86 | 31 | 2.09 | | |
| Audio Visual (TV/VCR) | | | | | |
| Between | 1.14 | 2 | 0.57 | 0.25 | 0.78 |
| Within | 71.83 | 32 | 2.24 | | |
| Overhead | | | | | |
| Between | 0.61 | 2 | 0.30 | 0.13 | 0.88 |
| Within | 75.16 | 31 | 2.42 | | |
| Power Point Presentation | | | | | |
| Between | 0.09 | 2 | 0.04 | 0.02 | 0.98 |
| Within | 76.20 | 32 | 2.38 | | |

Internal Instructional Methods

Internal instructional methods were ranked. An internal instructional method is a method that requires the learner to do some inward cognitive activity. Internal methods requires the learner to be “physically as well as intellectually active during the learning process” (Seaman & Fellenz, 1989, p. 79). The participants in this study ranked “using a variety of instructional methods” as their most favorite method with a mean of 3.11 and standard deviation of 2.98. However, the high standard deviation is indicative of a wide variation of responses from the participants (see Table 13). While nearly half (48.6%) ranked a variety of instructional methods as their preferred choice, three ranked it as the least favorite, and two others ranked it as their second least favorite method (see Table 14).

Hands-on learning and real-world learning were the

second and third highest ranked items (see Table 13). Their rankings were very similar, with over half of the respondents ranking each as their second or third highest method (see Table 14). Reflective writing was ranked least-liked with a mean of 8.8 and a standard deviation of 1.75. Reflective writing is often used in nursing courses. It is used by many instructors to assist the learner in gaining insight and perspective after a clinical experience has occurred (Ulrich & Glendon, 1999, pp. 79-81). Although it is widely used, it was ranked the least favorite by nearly half (45.7%) of the respondents.

Role playing ranked next to last with a mean of 7.8 and standard deviation of 2.19 (see Table 12). Nearly one-third (31.4%) rated this last, and another 17.1% rated it next to last. Frequency count for role playing was 11 (31.4%) (see Table 14).

The remaining methods had middle ranking. Their rankings varied and were distributed without strong extremes.

Table 13: Mean of Ranking for Internal Instructional Methods

| Order | Methods | Mean | SD |
|-------|-------------------------------------|------|------|
| 1 | Variety of Methods | 3.11 | 2.98 |
| 2 | Hands-on Learning | 4.06 | 2.53 |
| 3 | Real World Application | 4.17 | 2.65 |
| 4 | Brainstorming, Interactive dialogue | 4.94 | 2.17 |
| 5 | Interactive Learning | 5.03 | 2.28 |
| 6 | Experiential | 5.31 | 2.62 |
| 7 | Discussion | 5.57 | 2.46 |
| 8 | Group Activities | 6.6 | 1.9 |
| 9 | Role Playing | 7.8 | 2.19 |
| 10 | Reflective Writing | 8.8 | 1.75 |

Table 14: Frequency of Ranking for Internal Instructional Methods

| Rating | Variety of Methods | Hands-on | Real World | Brain Storming | Interact | Experien. | Discuss | Group | Role Play | Reflect Writing |
|--------|--------------------|----------|------------|----------------|----------|-----------|---------|-------|-----------|-----------------|
| 1 | 17 | 6 | 4 | 2 | 1 | 2 | 2 | 0 | 0 | 0 |
| 2 | 2 | 5 | 10 | 3 | 5 | 5 | 3 | 1 | 0 | 1 |
| 3 | 6 | 8 | 4 | 3 | 3 | 4 | 3 | 1 | 2 | 0 |
| 4 | 4 | 2 | 3 | 9 | 6 | 3 | 4 | 1 | 2 | 0 |
| 5 | 0 | 4 | 3 | 4 | 6 | 4 | 4 | 8 | 2 | 1 |
| 6 | 1 | 3 | 4 | 4 | 6 | 2 | 5 | 7 | 2 | 2 |
| 7 | 0 | 3 | 0 | 6 | 2 | 8 | 5 | 4 | 7 | 0 |
| 8 | 0 | 2 | 5 | 3 | 3 | 2 | 5 | 6 | 3 | 6 |
| 9 | 2 | 1 | 1 | 0 | 2 | 4 | 3 | 6 | 6 | 9 |
| 10 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 11 | 16 |
| Total | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |

The rating of the internal instructional methods indicated a favorable rating for most methods. Seven of the ten methods were rated at above 4.0 (see Table 15), and all except for role playing and reflective writing received a strong rating of 5 (see Table 16). Only reflective writing, role playing, and group activities received a low rating of 1 or 2.

Table 15: Mean of Rating for Internal Instructional

Methods

| Order | Method | Mean | SD |
|-------|------------------------|------|------|
| 1 | Variety of Methods | 4.77 | 0.49 |
| 2 | Real World Application | 4.69 | 0.47 |
| 3 | Hands-on Learning | 4.6 | 0.65 |
| 4 | Interactive Learning | 4.51 | 0.56 |
| 5 | Brain Storming | 4.43 | 0.65 |
| 6 | Discussion | 4.31 | 0.63 |
| 7 | Experiential | 4.2 | 0.8 |
| 8 | Role Playing | 3.77 | 1.17 |
| 9 | Group Activity | 3.24 | 1.16 |
| 10 | Reflective Writing | 2.94 | 0.91 |

Table 16: Frequency of Rating for Internal Instructional Methods

| Rating | Variety of Methods | Real World | Hands-on | Interact | Brain storming | Discuss | Role Play | Experien | Group | Reflect writing |
|--------|--------------------|------------|----------|----------|----------------|---------|-----------|----------|-------|-----------------|
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 3 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 4 | 5 |
| 3 | 1 | 0 | 3 | 1 | 3 | 3 | 12 | 8 | 4 | 19 |
| 4 | 6 | 11 | 8 | 15 | 14 | 18 | 9 | 12 | 15 | 7 |
| 5 | 28 | 24 | 24 | 19 | 18 | 14 | 5 | 15 | 10 | 1 |
| Total | 35 | 35 | 35 | 35 | 35 | 35 | 34 | 35 | 35 | 35 |

An ANOVA was conducted for each internal instructional method to investigate the relationship between the method and learning strategy preference. The participants were grouped based on their ATLAS learning strategy preference. Using a criterion value of .05, there was a significant difference for only one method, real world application (see Table 17). The Scheffe post hoc analysis revealed that the Engagers (4.89) rated real-world application higher than the Navigators (4.36) rated it. The Problem Solvers were similar to both other groups with a mean of 4.8. Although a statistical difference was

found, this is not a practical difference because the scores for all the groups were extremely high and near the top of the 5-point Likert scale.

Table 17: ANOVA of Internal Instructional Methods with Learning Strategies

| Method | <u>SS</u> | <u>df</u> | <u>MS</u> | <u>F</u> | <u>p</u> |
|--------------------|-----------|-----------|-----------|----------|----------|
| Real World | | | | | |
| Between | 1.71 | 2 | 0.85 | 4.685 | 0.016 |
| Within | 5.83 | 32 | 0.18 | | |
| Brain Storming | | | | | |
| Between | 2.37 | 2 | 1.18 | 3.11 | 0.058 |
| Within | 12.19 | 32 | 0.38 | | |
| Discussion | | | | | |
| Between | 1.72 | 2 | 0.86 | 2.32 | 0.114 |
| Within | 11.82 | 32 | 0.36 | | |
| Interactive | | | | | |
| Between | 0.96 | 2 | 0.48 | 1.57 | 0.223 |
| Within | 9.78 | 32 | 0.3 | | |
| Experiential | | | | | |
| Between | 1.47 | 2 | 0.73 | 1.17 | 0.323 |
| Within | 20.12 | 32 | 0.62 | | |
| Role Playing | | | | | |
| Between | 1.46 | 2 | 0.73 | 0.53 | 0.592 |
| Within | 42.649 | 31 | 1.37 | | |
| Reflective Writing | | | | | |
| Between | 0.35 | 2 | 0.17 | 0.2 | 0.815 |
| Within | 27.53 | 32 | 0.86 | | |
| Variety of Methods | | | | | |
| Between | 3.4 | 2 | 1.7 | 0.06 | 0.935 |
| Within | 8.13 | 32 | 0.25 | | |
| Group Work | | | | | |
| Between | 0.13 | 2 | 6.75 | 0.04 | 0.954 |
| Within | 46.03 | 32 | 1.43 | | |
| Hands-on | | | | | |
| Between | 3.23 | 2 | 1.61 | 0.03 | 0.965 |
| Within | 14.36 | 32 | 0.44 | | |

External Instructional Methods

External instructional methods are those methods in which the teacher has full control. Participants ranked a humorous, animated speaker as highest with a mean of 3.56 and a standard deviation of 3.05 (see Table 18). Over one-third (38.2%) ranked it highest, and another 29.4% ranked it second or third (see Table 19).

Lecture was the lowest ranked item with a mean of 7.62, and a standard deviation of 2.37 (see Table 18). Nearly one-third (29.4%) ranked it last, and another 17.6% ranked it next to last (see Table 19). Lecturing, more than any other instructional method, "requires not only expertise in the subject matter but special expertise, style and flair, and considerable experience in handling the method successfully" (Greaves, 1987, pp. 77-78). Speakers that use lecture as their primary instructional method must combine humor, vivacity, and overall enthusiasm to captivate the interest of the adult learner (Wlodkowski, 1985).

There were only slight differences in the ranking of other external instructional methods (see Table 18). Other than outlines of presentation and outcome-based instruction, none of the methods had a large number of responses for the extreme ranking (see Table 19).

Table 18: Mean of Ranking for External Instructional

Methods

| Method | Rank | Mean | SD |
|---------------------------------|------|------|------|
| Humorous, Animated Speakers | 1 | 3.56 | 3.05 |
| Outlines of Presentations | 2 | 4.5 | 2.96 |
| Demonstrations | 3 | 4.68 | 2.17 |
| Case Studies | 4 | 5.03 | 2.14 |
| Handouts and Resource Materials | 5 | 5.21 | 2.74 |
| Fieldwork / Making Site Visits | 6 | 5.32 | 2.94 |
| Scenarios | 7 | 5.65 | 2.33 |
| Guest Speakers | 8 | 5.97 | 2.77 |
| Outcome based | 9 | 6.35 | 3.35 |
| Lecture | 10 | 7.62 | 2.37 |

Table 19: Frequency of Ranking for External Instructional Methods

| Rank | Humor | Outline | Demo | Case Studies | Handout | Field Work | Scenario | Guest speaker | Outcome | Lecture |
|-------|-------|---------|------|--------------|---------|------------|----------|---------------|---------|---------|
| 1 | 13 | 7 | 2 | 0 | 2 | 4 | 1 | 2 | 5 | 0 |
| 2 | 4 | 5 | 4 | 5 | 7 | 5 | 1 | 2 | 3 | 0 |
| 3 | 6 | 4 | 5 | 4 | 3 | 1 | 4 | 3 | 1 | 4 |
| 4 | 1 | 3 | 6 | 5 | 1 | 4 | 8 | 3 | 1 | 1 |
| 5 | 1 | 1 | 5 | 5 | 5 | 4 | 4 | 6 | 2 | 1 |
| 6 | 2 | 3 | 5 | 7 | 3 | 2 | 1 | 3 | 4 | 4 |
| 7 | 1 | 5 | 2 | 2 | 5 | 5 | 6 | 2 | 1 | 4 |
| 8 | 3 | 1 | 4 | 2 | 4 | 3 | 6 | 4 | 2 | 4 |
| 9 | 0 | 4 | 1 | 3 | 2 | 3 | 1 | 4 | 9 | 6 |
| 10 | 3 | 1 | 0 | 0 | 2 | 3 | 2 | 4 | 6 | 10 |
| Total | 34 | 34 | 34 | 33 | 34 | 34 | 34 | 33 | 34 | 34 |

The ratings for the external instructional methods revealed general support for all of the methods (see Table 20). Less than one point separated all of the methods. Eight of the ten methods were rated above 4.0 (Agree), and outcome-based instruction was near this rating. Although lecture was rated the lowest of all methods, its rating of 3.61 was between Neutral (3) and Agree (4). Out of the 348 ratings made by all the participants, only 8 (2.3%) were Disagree (2), and only 1 (.3%) was Strongly Disagree

(1) (see Table 21). Of these few negative ratings, three were for lectures.

An appreciation for humorous, animated speakers was noted in the Strongly Agreed (5) rating of 57.1% of the participants. Well over half (60%) of the participants rated Strong Agreed (5) to using outlines as a guide to learning. A little under a half (42.8%) Strongly Agreed (5) to using case studies as a means for learning.

Table 20: Mean of Rating for External Instructional Methods

| Order | Method | Mean | SD |
|-------|-------------------------------|------|------|
| 1 | Outline of presentations | 4.51 | 0.66 |
| 2 | Case Studies | 4.35 | 0.65 |
| 3 | Demonstration | 4.34 | 0.54 |
| 4 | Handouts & Resource Materials | 4.34 | 0.73 |
| 5 | Humorous, Animated Speakers | 4.31 | 0.99 |
| 6 | Scenarios | 4.21 | 0.81 |
| 7 | Fieldwork, Making Site Visits | 4.17 | 0.95 |
| 8 | Guest Speakers | 4.14 | 0.69 |
| 9 | Outcome based | 3.97 | 0.86 |
| 10 | Lecture | 3.61 | 0.81 |

Table 21: Frequency of Rating for External Instructional Methods

| | Outline | Case Studies | Demo | Handson | Humorous Speaker | Scenario | Fieldwork | Guest | Outcome | Lecture |
|-------|---------|--------------|------|---------|------------------|----------|-----------|-------|---------|---------|
| 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 0 | 0 | 3 |
| 3 | 3 | 3 | 1 | 2 | 4 | 5 | 7 | 6 | 13 | 11 |
| 4 | 11 | 16 | 21 | 16 | 9 | 14 | 9 | 18 | 10 | 17 |
| 5 | 21 | 15 | 13 | 16 | 20 | 14 | 17 | 11 | 12 | 4 |
| Total | 35 | 34 | 35 | 35 | 35 | 34 | 35 | 35 | 35 | 35 |

When comparing the groups, using outlines was the only external method with a significance level (see Table

22). The significance may be accounted for by the preference of using outlines within the group as well as between the groups.

Table 22: ANOVA of External Instructional Methods with Learning Strategies

| Methods | <u>SS</u> | <u>df</u> | <u>MS</u> | <u>F</u> | <u>p</u> |
|-------------------|-----------|-----------|-----------|----------|----------|
| Outlines | | | | | |
| Between | 5.39 | 2 | 2.69 | 9.23 | 0.001 |
| Within | 9.34 | 32 | 0.29 | | |
| Case Study | | | | | |
| Between | 2.15 | 2 | 1.07 | 2.87 | 0.07 |
| Within | 11.6 | 31 | 0.34 | | |
| Demonstration | | | | | |
| Between | 1.24 | 2 | 0.62 | 2.3 | 0.11 |
| Within | 8.64 | 32 | 0.27 | | |
| Handouts | | | | | |
| Between | 1.6 | 2 | 0.8 | 1.57 | 0.22 |
| Within | 16.27 | 32 | 0.5 | | |
| Scenarios | | | | | |
| Between | 1.43 | 2 | 0.71 | 1.1 | 0.34 |
| Within | 20.123 | 31 | 0.64 | | |
| Fieldwork | | | | | |
| Between | 1.81 | 2 | 0.9 | 0.99 | 0.38 |
| Within | 29.15 | 32 | 0.91 | | |
| Humorous Speakers | | | | | |
| Between | 1.078 | 2 | 0.53 | 0.53 | 0.59 |
| Within | 32.46 | 32 | 1.01 | | |
| Guest Speakers | | | | | |
| Between | 0.44 | 2 | 0.22 | 0.44 | 0.64 |
| Within | 15.84 | 32 | 0.49 | | |
| Lecture | | | | | |
| Between | 0.33 | 2 | 0.16 | 0.24 | 0.78 |
| Within | 21.83 | 32 | 0.68 | | |
| Outcome Based | | | | | |
| Between | 0.24 | 2 | 0.12 | 0.15 | 0.85 |
| Within | 24.73 | 32 | 0.77 | | |

Correlation of Learning Tools

The rankings were correlated to see if there was any relationship between various learning tools. Correlation is a number that can vary from -1.00 to +1.00 and indicates that kind of relationship that exist between two variables, positive or negative in nature, as indicated by the sign of the correlation coefficient and the strength of the relationship as indicated by the extent to which the coefficient differs from 0 (Mitchell & Jolley, 1988, p. 400). When the data are in the form of ranks, the Spearman rho is the appropriate correlation coefficient (Gay, 1987, 237).

There were 21 possible correlations. Of these, 14 were negative. The strength of the correlation was as follows: 4 between .40 and .46, 1 at .33, 8 between .20 and .29, 5 between .10 and 1.9, and 3 between .00 and .09. Thus, all of the correlations were weak. For those that were at .40 or above, video only was negatively correlated with audio visuals (TV/VCR), and overheads were positively correlated with flip chart. Since "a correlation coefficient squared indicates the amount of common variance shared by variables" (Gay, 1987, p. 323), squaring the highest coefficient of .46 only explained about 20% of the variance in the relationship. Thus, those teaching tools can be considered unrelated to each

other because "a correlation coefficient much below .50 is generally useless for either group prediction or individual prediction" (Gay, 1987, p. 234).

Table 23: Correlation of Learning Tools

| Tools | Audio Only | Audio visual equipment (TV/VCR) | Flip Chart | Overhead Transpar | Power Point | Video Only | Visual Aids |
|---------------------------------|------------|---------------------------------|------------|-------------------|-------------|------------|-------------|
| Audio Only | 1 | | | | | | |
| Audio visual equipment (TV/VCR) | 0.04 | 1 | | | | | |
| Flip Chart | 0.28 | -0.25 | 1 | | | | |
| Overhead | 0.1 | -0.24 | 0.4 | 1 | | | |
| Power Point | -0.16 | -0.11 | -0.27 | -0.29 | 1 | | |
| Video Only | -0.2 | 0.1 | -0.43 | -0.46 | 0.22 | 1 | |
| Visual Aids | -0.1 | -0.4 | -0.33 | -0.16 | -0.2 | 0 | 1 |

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary of Study

Purpose

The emerging field of child care health consulting has evolved over the last 7 years. With the development of a new profession, there is a need to plan educational activities to meet the demands of the adult learner. Prior to designing curriculum, instructors/trainers should identify the learning profile of the child care health consultant. Therefore, the purpose of this study was to describe the learning profile of the child care health consultant. As a specific population of adult learners, child care health consultants have not been researched in regard to their learning profile. This study was not attempting to disprove, test nor confirm a hypothesis; but rather, it used descriptive statistics to generate new information.

The acquisition of skills necessary to master learning is enhanced through an understanding of one's own learning. Educators developing an appreciation for learning strategy preferences offer opportunities to enhance the learning of professionals (James, 2000, p. 132) such as child care health consultants.

When learners learn how to learn, they become lifelong learners. Cognizance of oneself as a learner is a major developmental task of adulthood (Smith, 1982). When lifelong learners have the tools they need to learn, they can readily move from one discipline to another without being blocked by barriers. Learning how to learn can influence a person's career development and other aspects of his/her life.

Design and Sample

This study described the learning profile of the child care health consultant and built a foundation of knowledge about child care health consultants as adult learners. This was accomplished through the development and implementation of two surveys and administering the Assessing the Learning Strategy of Adults (ATLAS) instrument with each survey.

ATLAS' simplistic design allowed it to be administered quickly and easily. Exposure to ATLAS has allowed learners to become acutely aware of their own personal learning strategy. Respondents were instructed to document their learning strategy preference on the survey instrument.

The first survey captured the child care health consultants demographic data, beneficial learning methods,

deterrents to learning, and recommendations for future training. The second survey used the identified learning tools and instructional methods as items to be ranked and rated.

Initially, 150 surveys were sent out either electronically or by mail with 142 (95%) responses. For the second phase where participants were asked to rank and rate the data, 150 surveys were sent out by electronic mail only with 35 (23%) responses. These were not all of the same people that participated initially (see figure 2).

The survey sample represented each region of the nation. Participants in this study were either child care health consultants or those that trained child care health consultants. The child care health consultant is an experienced health professional learning about child care. All participants in this study were volunteers. They entered the study freely without coercion by agreeing verbally and in writing to participate.

Summary of Findings

The statistics used in this study to analyze the data included frequency distribution, analysis of variance, and cross tabulation. Chi square was used to compare the frequencies observed in this study with the frequencies in

the database used to develop ATLAS.

Profile of the Child Care Health Consultant

Of the 142 participants from the first round of surveying, 94% were female, and 88% were White. The median age of the participant in this study was 48 with a mean age of 46.9 and standard deviation of 8.27. The demographic data did not reveal any significant difference from other similar studies.

The participants in this study were well-educated with 88% prepared on a baccalaureate level. In this study, 30.3% had master's degrees, and 14.1% had doctoral degrees. Many of the participants in this study had specialized certifications beyond formal education. Certifications included: West Ed, an infant/toddler specialization, Nursing Child Assessment Satellite Training, National Highway Traffic Safety Administration, and playground inspector certification. Most participants were certified in cardiopulmonary resuscitation and first aid. A small number of participants were physicians and nurse practitioners. All participants had a level of skill and competency beyond that of an entry level health professional.

Participants in this study worked in multiple child care settings as child care health consultants; 78.8%

provided service in child care centers, 73.2% provided service in infant/toddler centers, 65.5% provided service in family child care homes, 54.2% provided service in Headstart centers, and 12.0% provided service in military child care. There are multiple types of service delivery sites for the care of children outside of their home environment. In this study, the areas of service for the child care health consultant are similar with the places where children are in out-of-home care.

Learning Strategy Preference

The distribution of learning strategy preferences in this study based on the Assessing The Learning Strategies of Adults (ATLAS) instrument was 37.3% Navigators, 32.4% Problem Solvers, and 27.5% Engagers. There was no significant difference in the participants in this study and the norm group for ATLAS.

Preferred Learning Tools and Instructional Strategies

The participants in this study identified their helpful instructional methods and learning tools. Navigators, Problem Solvers, and Engagers indicated they desired a variety of methodologies when learning. This is consistent with adult learning theory for adults typically prefer a variety of methodologies to meet their needs. Power Point presentations were the most favored

instructional method among all the learning strategies. Power Point presentations require multiple modalities of visual, hearing, and sometimes interaction in its delivery method.

Participants expressed that handout and visual aids had benefits when they were accompanied by a lecture. Learning that involved a hands-on activity or experiential in nature were preferred by participants. Participants also enjoyed the opportunity for discussion.

The expected differences among learning strategies noted in this study were congruent with the literature. Even so, Navigators in this study enjoyed group work far more than expected; this is a characteristic typically found among Engagers. Moreover, Navigators revealing they would possibly enjoy working in groups when they could get information from an expert in the field is a new finding.

The Navigators also valued brainstorming only slightly less than Engagers and Problem solvers. Brainstorming is a typical attribute of Problem Solvers and their need to generate alternatives and is not typically characteristic of Navigators. In contrast, Problem Solvers enjoyed using outlines, a characteristic of Navigators. Problem Solvers used outlines to help them to stimulate new ideas.

In regards to real-world application of learning, all learning strategy groups rated it high. The Navigators rated it slightly lower than Problem Solvers and Engagers. Guest speakers were an important aspect of preferred instructional methods. Participants felt guest speakers should be humorous and organized.

Hindrances to Learning and Instructional Strategies

The participants in this study identified several hindrances to learning. The single use of audio instruction, such as with a tape, CD, or the voice of the instructor, was identified as interfering with learning. Lecturing as the only means of instruction was the least preferred method among all teaching strategies.

Most of the participants expressed a dislike for any extremes, such as too many handouts or too little time. Although characteristic of Navigators, all groups wanted structure and expressed a desire for subjects to be presented in a systematic format. They did not like unrelated subjects being strung together. However, Problem Solvers did not like instructors that were rigid in the presentation of information. Engagers did not care for discussion activities that got side-tracked on issues other than the topic. Role playing was not an instructional method the participants in this group

enjoyed. In learning for professional practice, they were focused on obtaining the necessary information to master the job skills.

Conclusions

Demographics

The first research question asked the learning strategy profile of child care health consultants. The research discovered in this study:

The field of child care health consulting is reflective of the child care community.

Child care health consultants are an aging population.

Child care health consultants have an enormous amount of experience in the health field but might lack consultation experience and knowledge about the child care industry.

The population in America is rapidly changing to a more culturally diverse population. Likewise, children in child care are reflective of the population. All the same, the field of child care health consulting has not kept pace with the changing demographics of society. Racial stereotypes account for some of the lack of diversity in the nursing field (<http://community.nursingspectrum.com/MagazineArticles/article.cfm?AID=6224>). Nursing has historically had intangible

barriers. Instructors' negative assessment of minority students, colleagues harsh treatment of novice nurses, and lack of support in the field have steered many racial and gender minorities away from nursing (<http://community.nursingspectrum.com/MagazineArticles/article.cfm?AID=6224>).

Child care health consultants provide a vital link to health and safety information for children, caregivers, and families utilizing child care. It would be good for the profession to be as culturally diverse as the general population, thereby increasing the receptiveness of disseminated knowledge.

Gender and racial biases are entrenched in the health profession, thereby influencing the pool of recruits for new child care health consultants. The limited number of recruits also limits the number of nurses replacing retired nurses. The nursing shortage crisis has been triggered by inadequate replenishing of professionals leaving the field, along with the demise of sufficient numbers of training institutions and faculty to prepare the potential workforce (American Association of College of Nursing, 1999). Nurses are leaving the field faster than new nurses are entering the profession.

The nursing shortage has likewise reduced the number

of experienced nurses in the field to mentor new nurses. As nurses choose to learn about how to improve health and safety in child care, the need arises to provide acceptable training programs through the use of experienced child care health consultants. This might be an arduous task if the field does not institutionalize training programs by utilizing principles of adult learning.

Learning Strategy Preferences

The second research question compared the learning strategies preferences of child care health consultants to the norms for ATLAS. The third research question wanted to ascertain the relationship between the demographic characteristics of child care health consultants and their learning strategy preferences. The research discovered in this study:

Child care health consultants have a broad range of learning strategy preferences reflecting a slice of the general population.

ATLAS allows the child care health consultant to become aware of their preferred learning strategy preference and the learning strategies from other categories.

ATLAS was found to be an effective instrument for self-assessing learning strategy preferences among child care health consultants. There is a critical need to

maximize the limited time of training to produce the greatest learning outcomes. New child care health consultants entering training should be afforded the opportunity to discover their individual learning strategy preference.

The awareness of one's own learning strategy preference cannot be over emphasized. Mastery of content information can best be achieved through an understanding of how an individual goes about learning. Metacognition is more than thinking about thinking; it is key to the learning process. Metacognition forces the learner to think about the way in which he/she organizes and processes information. The learner is challenged to make a conscious decision about how to proceed with each learning opportunity. This can only be accomplished through understanding his/her own learning.

Learning outcomes are easier met when adult learners are allowed to utilize their learning strategy preferences. Likewise, having a thorough understanding of learning strategy preference increases the chance of meeting learning outcomes. Utilizing a self-assessment instrument prior to engaging in a learning activity can increase the likelihood of positive learning outcomes for the adult learner (Houle, 1973; Knowles, 1980; O'Malley et

al., 1988; Smith, 1976, 1982).

Although all learning strategy groups have specific characteristics that set them apart, careful planning would allow all groups to benefit from methods employed in training. For example, working in small groups is characteristically an activity enjoyed by persons who relish the socialization of the individuals involved, such as Engagers (Conti & Kolody, 1999; James, 2000). However, Navigators, who are focused learners, illustrated that group work can be used to gain specific knowledge from an expert when the activity is directed toward such attainment.

Another example is the use of outlines. Outlines are typically more characteristic of Navigators. However, Problem Solvers found them useful as a tool to generate alternative thinking. Only a thorough understanding of learning strategy preference among the child care health consultant, as well as the trainer of child care health consultants, will enable this type of flexibility.

Learning Tools and Instructional Methods

The remaining research questions asked what are the health professionals' preferred tools for learning, preferred methods for receiving instruction, and what is the relationship between the learning strategy preferences

of the child care health consultant and his/her preferences of learning tools and instructional methods.

The research discovered in this study:

Child care health consultants need a variety of modalities that uses as many of the senses as possible when learning new material.

Instructional methods using Power Point presentations, handouts, hands-on experiences, discussion, and visual aids were more effective for child care health consultants.

Using single modalities such as lectures or audio instruction only are not beneficial for learning for child care health consultants.

Learning requires the use of all five senses. It is no doubt that adults prefer to use multiple forms of instructional methods as well as multiple tools.

Instructional methods such as Power Point presentations are a preferred tool due to their multimedia design.

Training should be reflective of other forms of information input received. Power Point presentations appeal to adult learners because they can utilize visual, auditory, and sometimes interactive stimuli. Modalities that are multimedia and not didactic respond to the needs of a sight and sound generation.

The use of a single modality, such as lecture or audio instruction only, limits the use of the senses.

Adult learners learn best when they use multiple senses. Audio instruction, presented by itself, does not allow for the use of multiple senses. Listening is one-way communication with minimal feedback from the participants (Chute, Thompson, & Hancock, 1999). Chances of learning are increased when more than one of the senses are used (Kidd, 1973). Hence, lecturing alone lacks the interaction needed by the adult learner and thereby decreases the chance of favorable learning outcomes (Knowles, 1986).

Promoting inquiry, curiosity, and critical thinking skills is an effective way to teach the adult learner (Smith, 1982). This is best achieved through the use of multiple modalities such as handouts, discussion, and visual aids (Seaman & Fellenz, 1989). Moreover, utilizing experiential activities such as field trips and hands-on activities increases the learning of child care health consultants. A Chinese proverb says, "give someone a fish and you feed him for a day, teach someone to fish and you feed him for a lifetime." Although provincial in thought, child care health consultants want and need to be actively involved with the learning process (Brookfield, 1986; Chute, Thompson, & Hancock, 1999).

Adult learners utilize their experiences to learn new

things. The health field builds on previous experience and skills to master new skills and knowledge (Lockwood, 1997). However, "the past experiences of adults affect their current learning, sometimes serving as an enhancement, sometimes as a hindrance" (Brookfield, 1986, p. 31). Unpleasant memories about school might result in certain forms of instructional methods being deemed unfavorable. Formal education widely uses lecture as a form of disseminating information. If a learner has had a negative experience with school, memories of lectures could block the learning process. Power Point presentations are less formative in the memories of the adult learner and thereby are received as a fresh, new way of presenting information.

Extreme use of one instruction method or tool over another is always unacceptable. No one wants to endure hours of the same thing regardless of how well it is liked. Sensitivity to the learners' needs is key to training success. The facilitator of learning should work to achieve balance in delivery as well as curriculum design (see Appendix G).

Curriculum Design

Other discoveries from the research included:

Learners learn in ways best for them.

Consideration for the needs of the adult learner can improve curriculum outcomes.

Self-assessment and an awareness of one's own learning produced positive attitudes toward learning.

Child care health consultants desire curriculum that flows in a logical format.

Training should be paced as not to be tedious and tiring.

The environment for child care health consultants should be conducive to learning.

Guest speakers contribute greatly to the learning of child care health consultants.

The needs of the adult learner should be in the forefront of any curriculum design (Cervero & Wilson, 1994). A needs assessment allows the curriculum designer to develop appropriate objectives and relevant learning outcomes for the population served (Brookfield, 1986). Self-assessment of learning strategy preference is one method of assessing the needs of the adult learner. Moreover, self-assessment of learning strategy preference can stimulate an excitement for learning. Educators can help learners learn when they utilize instruments to stimulate metacognition.

Adult learners in this study became aware of their

learning strategy preference through a process known as metacognition, the conscious awareness of how an individual learns and thinks. Metacognition is the ability of learners to strategically plan out their cognitive path. Metacognition is an awareness of the learning process; it involves cognition, management of resources, self-appraisal, and skills assessment (Borkowski & Muthukrishna, 1992; Brown, 1978; Dewey, 1997). Metacognition is a self-regulating learning attribute. Metacognition is the intentional, deliberate, purposeful, and goal-directed thinking applied to one's thoughts to accomplish cognitive learning activities (Hacker & Dunlosky, 2003, pp. 73-79). Metacognition requires that learners simply think about their thinking and learning process.

Metacognition allows the learner to make independent decisions about the foremost way to proceed with a specific learning task. It considers what one already knows and what one still needs to know (Hacker & Dunlosky, 2003). Metacognition is an autonomous endeavor on the learner's part and is not the decision of the instructor. As adult learners recognize what they need to accomplish in their own learning tasks, they begin by questioning what knowledge they already have, what new knowledge they

need, and what tools they have to achieve the task (Paris & Winograd, 1990). For example, a Navigator asserted, "I did not know that is why I need to have an agenda for training session...It drives me crazy when there is no order and clear time frame." Metacognition provides the "aha" effect of learning, an epiphany. One aspect of metacognition is self-appraisal. Self-appraisal is a personal reflection about one's own knowledge and abilities. What is known, how it is known, and how to apply the knowledge of what is known is the self-appraisal process (Paris & Winograd, 1990, p. 17).

Respondents in this study became aware of their individual learning strategy preference when the ATLAS instrument was administered. Smith believes that other ready-made assessment instruments such as the Kolb's Learning Style Inventory (Kolb, 1985) or the Principles of Adult Learning Scale (PALS) (Conti, 1979) can be used to provide informal diagnosis of a learner's needs.

Speakers are a focal point for curriculum delivery. However, guest speakers that lack humor or enthusiasm may hamper learning. In this study, the guest speaker was also viewed as an instructional method and part of the curriculum design.

Recommendations

Demographics

The lack of a culturally diverse aging population among child care health consultants prompts the recommendation for recruitment and training of young culturally diverse professionals reflective of the general population. The field of child care health consulting should recruit and retain younger qualified candidates that will replenish those retiring and leaving the field. Younger candidates could then be mentored by more seasoned child care health consultants, thereby assuring the continuing of the profession. Mentoring new and inexperienced child care health consultants increases the chances of retention and reduces turnover rate (Kalbfleisch, 1998). It also reduces the stress level of new employees. New employees may feel overwhelmed when they enter into a new profession, yet they start employment with eagerness and willingness to learn (Zimmer & Smith, 1992). An experienced mentor can guide new child care health consultants while at the same time nurturing their career development. Mentoring channels the energy of the new employees and aids them in becoming focused on skill development (Zimmer & Smith, 1992).

Learning Strategy Preference

The learning strategy of child care health consultants in this study did not differ from the ATLAS norm group. When providing continuing education programs for child care health consultants, it is likely that all three learning strategy preferences will be represented.

Importantly, when participants were introduced to ATLAS and they discovered their learning strategy, a completely new awareness of learning occurred. Awareness of learning is not a new phenomenon. Lively (2001) utilized ATLAS to assist seniors to better understand more fully the importance of how their personal learning strategies affected completion and attitude about their learning projects. Therefore, metacognition should also be purposefully planned for when developing curriculum for the adult learner. Facilitators should examine their understanding of learning strategy preferences and compare it to their current understanding of how people learn, thus making adjustments accordingly.

Metacognition is influenced by principles of adult learning and andragogy. Andragogy is the ability of the adult educator to move the student from the simple acquisition of knowledge to the practical application of that knowledge in a real-life setting. An essential

element of the andragogical process is an understanding of cognitive thinking skills or the use of metacognition. Traditional continuing education programs for nurses have expected students to take a passive role of receiving new knowledge while the authoritarian educator poured information into them, hoping they would make appropriate application.

Greaves (1987) argues that the andragogical "model breaks away from the authoritarian classical didactic approach in which the main method of teacher-student contact is through exposition, class teaching, and the maintenance of a teacher-dominated environment" (p. 63). The andragogical approach to teaching adult learners in a continuing education program requires sensitivity to a conducive learning environment where metacognition is encouraged. Principles of adult learning which include metacognition should be added to the design of curriculum for child care health consultants continuing education courses.

Metacognition can be ignited through the use of instruments that help to discover learning strategy preference. In this study, metacognition in action lead to a real excitement about learning. This newly discovered phenomenon of personal learning through the use

of an assessment instrument is known as instrumented learning. Instrumented learning is a mechanism which provides an awareness of learning through the use of an instrument. It "has been described as learning which is triggered by the use of an instrument" (Munday, D., 2002, p. 1).

Understanding Smith's (1982) concept of learning how to learn allows the instrument to be used as a mechanism to help the learner learn effectively and successfully. A significant achievement for the learner in the learning process is to learn how to learn. Personal discovery is the end result of using the instrument to trigger awareness of strengths and weaknesses. "One can gain valuable insight into personal blocks to learning, to personal strengths and weakness, as well as personal preferences for the methods of learning and for learning environment" (p. 21). When learners are aware of their weaknesses, they can make efforts to shore-up those frailties. Learners have the ability to compensate for their deficits and can be taught how to capitalize on their strengths.

Ready-made instruments may be used to prompt learners to think about their own thinking and learning process. These instruments may be used to "provide programmatic

decisions and provide a way for each participant to make a choice as to which track to follow" (Smith, 1982, p. 75). The ATLAS instrument was used to stimulate the process of metacognition and thus activate instrumented learning. In this study, ATLAS was used to determine learning strategy preferences, but it can foster awareness of individual preferences and explain unanswered concerns of the learner. Consequently, a positive by-product of learning strategy assessment can be the triggering of personal insight and reflection of the learners' own learning process (Smith, 1982). Child care health consultants should be afforded the opportunity of learning about principles of adult learning and learning strategy preferences.

Learning Tools and Instructional Methods

The facilitator of the adult learner should never assume one method is sufficient for adult learners (Knowles, 1975). The instructional method selected should be based on the needs of the learner and the objectives to be obtained (Brookfield, 1987). Training programs for child care health consultants entering the field should adapt instructional strategies that utilize methods revealed in this study.

Power Point presentations are encouraged to be used

when technology allows. Lecture can and should be used as an instructional method. However, lecture should never be used as a single source of providing information to the learner. Lectures should not to be more that 30 minutes without changing the instructional method. "A one-hour transmission of information in which there is no opportunity for questions, no small-group discussion of case study application of ideas, no 'buzz group' activity, and no attempt to make connections between the audience members' experiences and the lecturer's content is, therefore, poor facilitation" (Brookfield, 1986, p. 12).

Adult learners want to be actively involved in the learning process. Adult learners in this study wanted to take part in the learning-facilitating process and share their own expertise and knowledge. "The most effective training takes place when participants are actively involved in learning, not passive recipients of knowledge transmitted" (Brookfield, 1986, p. 255). This can be accomplished by providing introductory content through lecturing initially, but then allowing the audience to participate through discussion, questions, or sharing of their own ideas in a structured manner.

Handouts are good to use in learning, but too many could be a problem. Participants felt that a large amount

of handouts should not be required to be read for continuing education or self-study. Handouts should be coded in some way as to relate directly to the presentation for later referencing. Handouts should be used as enrichment and follow-up and not as part of a homework assignment after the continuing education session.

Participants enjoyed interactive learning, but childish games and activities might deter learning. Facilitators of adult learning should plan for a balance of activities that are well-suited for the audience. Introductory activities assume a relationship with the audience that needs to be established. It is good for the facilitator of learning to allow time for each learner to get to know other learners in a nonthreatening manner. Once the initial content is delivered, laying a foundation of knowledge and theory, participants should have the opportunity to do hands-on experiential activities. This type of learning could be in a classroom that is set up as a lab, through assessing case studies, or by performing field work.

Participants cited role play as a hindrance to learning. Role playing can be threatening and intimidating if the participant is not well versed in the

subject matter. Role playing should only be used after the participants are comfortable with the information to be presented and have been allowed time to incorporate the knowledge into daily experiences.

Role playing requires a higher level of learning and the ability to perform appropriately. It assumes the participants have a thorough knowledge of the subject matter. Role playing is a difficult technique to master. "In role playing the intent is to help the clients or learners concerned explore the perceptual filters and structures of interpretation of another person" (Brookfield, 1987, p. 104).

Role playing can be helpful as it helps participants to interpret their underlying thoughts and feelings toward an issue (Seaman & Fellenz, 1989, p. 101). Role playing requires that the learners have trust and an orientation to the process (p. 105). Therefore, it is recommended that role playing only be done after the group has built a confidence in the presenter and are comfortable with each other.

Participants in this study enjoyed brainstorming. "Brainstorming is an exercise in structured spontaneity, in that participants are actively encouraged, for a specific period of time, to think of as many varied, even

outrageous, ideas as they can" (Brookfield, 1987, p. 118). This creative thinking process allows participants to become involved in learning without feelings of a negative outcome. Hence, brainstorming is an excellent format for generating new knowledge.

Curriculum Design

Continuing education (see Appendix G) curriculum should feature a variety of modalities. Curriculum that seeks to produce assembly line reproductions of a expert teacher's idea voids the learner of creative thinking. Best practice in the emerging field of child care health consultant encourages thinking "out of the box". Didactic regurgitation of the curriculum limits the opportunity for critical reflection, thereby annulling the possibility of praxis in action. "Learners and facilitators are involved in a continual process of activity, reflection upon activity, collaborative analysis of activity, new activity, further reflection and collaborative analysis, and so on" (Brookfield, 1986, p. 10). "Self-reflective learning depends primarily on the critical examination of personal experiences, often in support groups with others facing the same problem, and draws on the psychoanalytic tradition" (Marsick & Smedley, 1989, p. 510).

Training programs should be designed in such a way to

allow each learner to participate in the planning process, which includes self-assessment of needs (Knowles, 1986). Training programs should take into consideration the needs of the adult learner. Providing a pleasurable learning environments requires a thorough knowledge of adult learning principles.

Adult learners desire to have comfortable seating, appropriate lighting, and esthetically pleasing decor in their learning environment (Burruss, 2001). Simple things such as making certain that the noise level from an adjacent room is not distracting and room acoustics are good can improve the learning environment (Merriam & Caffarella, 1999, p. 97). Facilitators who have refreshments available for the adult learners to enjoy while casually chatting at the beginning of a learning session will create an environment much more conducive for learning (Knowles, 1990).

Adult education principles and learning strategies apply in various ways to both the child care health consultant as well as the child care providers they train. These adult learners have a need to receive and participate in continuing education related to professional development. Educating adults involves a blend of identifying individual adult learning strategies

as well as identifying the methods for teaching adults. It can occur with planned activities as well as those teachable moments found in practical settings (Merriam & Caffarella, 1999, p. 21).

Teacher of Adult Learners

Learning outcomes are not determined exclusively by the institution, nor are they determined by the learners: instead, they are determined by the teacher-learner transaction which begins early in the planning phase (Merriam & Cunningham, 1989). The process of meeting learning outcomes is like dancing the waltz. It is a delicate balance between the leader and follower in which movements are determined by the slight move of the hand. Of course, there is a leader, but the leader is very sensitive to responses of the follower and is ready to readjust movements as needed.

Teachers of adult learners should allow adequate time to prepare for presentations. Having a well-organized presentation is always a plus. To avoid the appearance of disorganization, pre-planning is essential. Subjects presented at child care health consultant training should be introduced in such a way to be interrelated.

Facilitators should also be flexible and responsive to the needs of the learner. Post evaluations are good

for improving future training offerings, but responding to immediate requests are much more effective in meeting the current demands of the adult learner. The ongoing process evaluation can improve instruction during teaching and cause the teacher to be responsive to the learners' needs (Caffarella, 2002). A teacher should never feel intimidated or attacked personally by a learner's criticism of the learning process. When learners verbalize their needs, the teacher can use this opportunity to re-evaluate the design of the curriculum and make adjustments accordingly (Brookfield, 1986; Caffarella, 2002).

While the teacher of the adult learner is partially responsible for the learning environment, guest speakers can provide an enriching aspect of instructional methods. Guest speakers who are organized can create harmony in the learning environment. Disorganized speakers can create an atmosphere of chaos. Presentations should be planned in such a way as to allow plenty of time for questions. When the speaker appears rushed, the audience feels cheated. Guest speakers should plan their presentation according to the amount of time allotted. When rushing through material due to a limited amount of time to present, encourage the audience to return for an extension of the

training or refer to reference materials for additional information.

Guest speakers should employ animation and enthusiasm as a key instructional strategy.

Enthusiastic instructors are people who care about and value their subject matter. They teach it in a manner that expresses those feelings with the intent to encourage similar feelings in the learner. Emotion, energy, and expressiveness are outwardly visible in their instruction. (Wlodkowski, 1985, p. 43)

“Teaching is an art and the true teacher an artist” (Dewey, 1991, p. 220). The ability to develop and implement an effective training program by which adults can learn is as complex an endeavor as molding a beautiful vase from a lump of cold hard clay. Every aspect of adult learning principles must be taken into account. As a potter closely monitors each step of the creative process assuring no step is omitted and nothing is left to chance, so to does the teacher facilitate the learning process for the adult learner.

Future Research

The responses in this study support and verify adult learning principles. The responses contribute to the improvement of teaching adult learners. It is recommended that other studies be conducted that investigate the further needs of health professionals learning about child

care. This study was inspired by an investigation of the learning strategies of nursing students at Montana State University (Lockwood, 1997). There have been limited other studies of health professionals' learning strategy preferences. Hence, continued investigation is needed in the area of learning strategy preferences.

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APPENDIX
A

August 03, 2001

Dear Child Care Health Consultant,

I would like you to participate in a study of learning used by the child care health consultant. This study of learning will assess the demographic data, the helpful items used when learning, the hindrances used when learning, and information concerning any changes needed to improve training for child care health consultants. This study will build a learning profile of the child care health consultant.

As you know, the child care health consultation is a new and emerging profession. This study may well provide some direction for the profession about curriculum development and thus has implications for continuing education. A survey and the Assessing The Learning Strategy of Adults (ATLAS) instrument will be used in this study. Data from the survey and ATLAS will be collected via the Internet for partial completion of a doctoral degree in adult education. Please go to the following link for directions.

<http://members.aol.com/researchosu/sharon.htm>

For colleagues unable to access the Internet link, please see the attached paper copy which can be mailed back to the below address.

Thank you for your time and consideration.

Best regards,

Sharon D. Ware, RN. BSN, MA
Child Care Health Consultant
Child Care Resource Center
1700 ½ South Sheridan Road
Tulsa, Oklahoma. 74112
(918) 831-7231

APPENDIX
B

***Learning Strategies
of the
Child Care Health Consultant
Survey***

The purpose of this research project is to describe the learning strategies of the child care health consultant (CCHC). To do this, we need your help in completing the Assessing the Learning Strategies of AdultS (ATLAS) tool. It is very important that you realize that: (1) your participation in this study is voluntary, (2) you will not be penalized in any way if you choose not to participate, and (3) you are free to withdraw your consent to participate in this study at any time. By completing this survey and signing your name, you are giving us permission to use the data you provided for research purposes. The information you provide will remain confidential and will not be available to anyone other than the researcher and the academic team. The author of this survey intent is to use the data for partial completion of her doctoral dissertation. In addition, she may use the data for future publications. This information gathered on this form will be entered into a general data bank. After the data has been analyzed the data collection forms will be destroyed after a six months period.

Procedure: First, take the ATLAS. Second, sign the attached survey. Third, check and complete all items on the survey. Lastly, return the ATLAS and completed survey.

If you have any questions about this project, you may contact Sharon Douglass Ware at the Child Care Resource Center, 1700 ½ South Sheridan road, Tulsa, Oklahoma 74112. Or contact Sharon by phone at (918) 831-7231 or Internet by email: SharynDouglass@cs.com

I _____, agree to participate willingly in the learning strategies survey and I understand the above purpose and intended use of the data collected. In addition, I realize my information will be kept anonymous and confidential.

Signature

Date

ATLAS

DIRECTION: Follow the directions for completing ATLAS (orange booklet). The place ONE check mark next to your learning strategy subgroup that indicates your overall group and subgroup as indicated on ATLAS.

| | | |
|---|--|---|
| Navigator __Subgroup 1 __Subgroup 2 | Problem Solver __Subgroup 1 __Subgroup 2 | Engager __Subgroup 1 __Subgroup 2 |
|---|--|---|

1. Accuracy: Is the description of your learning strategy from the Group of Learners page of ATLAS fairly accurate in describing you as a learner?
 __yes __no
2. Age: ____
3. Gender: __ Male __ Female
4. Years as CCHC ____

5. Race: White African American Hispanic Native American
 Asian Other not listed: _____
6. Education: Please check your highest level of formal education.
 Associates Degree Masters Degree
 Bachelors Degree Doctorate
7. What population do you work with: Check all that apply.
 Infant/toddlers Child care centers Family child care homes
 HeadStart sites Military programs Other _____
8. Certification: Please describe in the box below any certifications you have obtained related to your work as a child care health consultant.
9. Have you attended the National Training Institute of Child Care Health Consultants training in North Carolina? yes no
10. Did you attend another kind of training for certification as a child care health consultant? yes no, please describe.
11. When you go to a training session, what instructional methods do you find useful?
12. When you go to a training session, what instructional methods do you not find useful?
13. Have you ever taught other child care health consultants? yes no
14. What changes would you suggest for future child care health consultant trainings to make them useful for you?

Thank you for participating in this survey.

APPENDIX
C

ATLASTM

Assessing The Learning Strategies of Adults

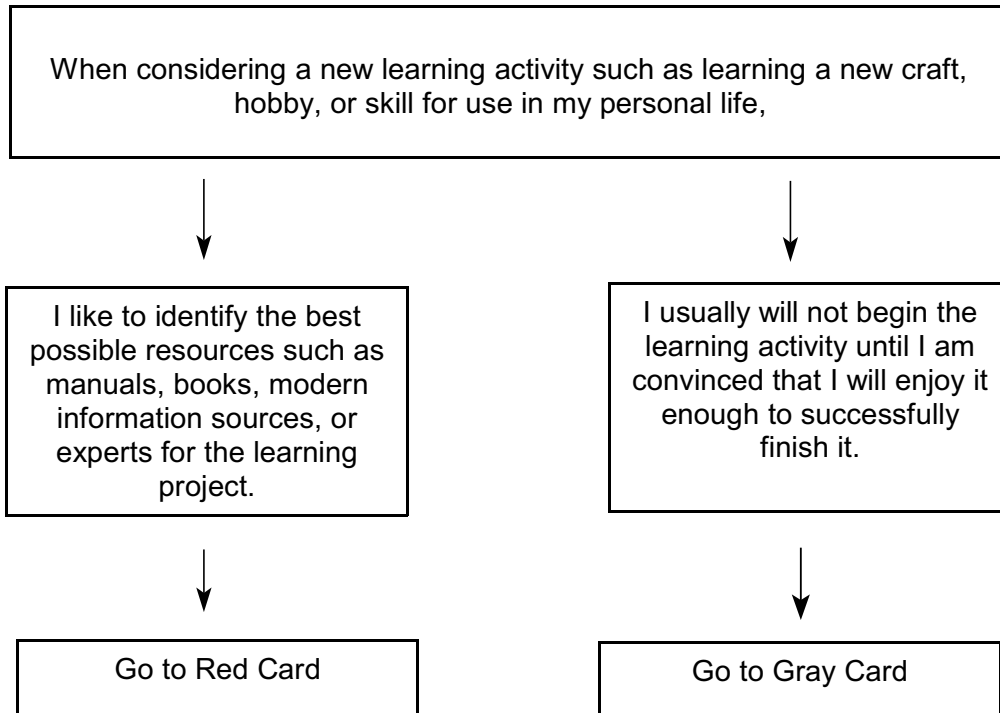


ATLAS

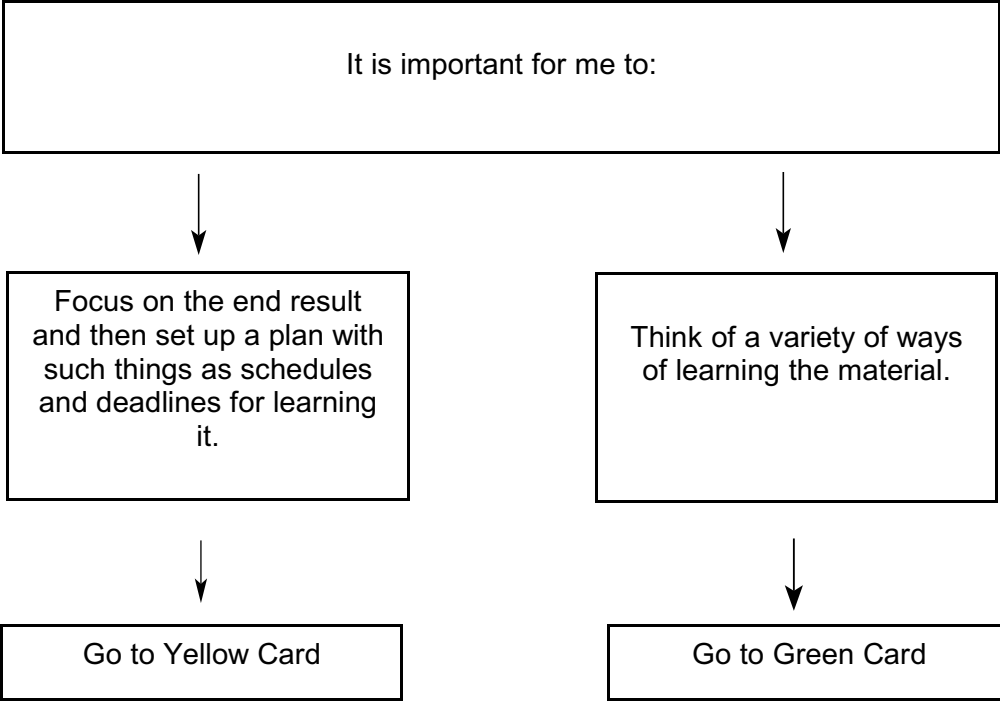
(Assessing *The Learning Strategies of AdultS*)

Directions: The following colored cards have statements on them related to learning in real-life situations in which you control the learning situation. These are situations that are **not** in a formal school. For each one, select the response that best fits you, and follow the arrows to the next colored card that you should use. Only read the cards to which you are sent. Continue this process until you come to the Groups of Learners sheet. Along the way, you will learn about the group in which you belong. Follow the arrow to start.

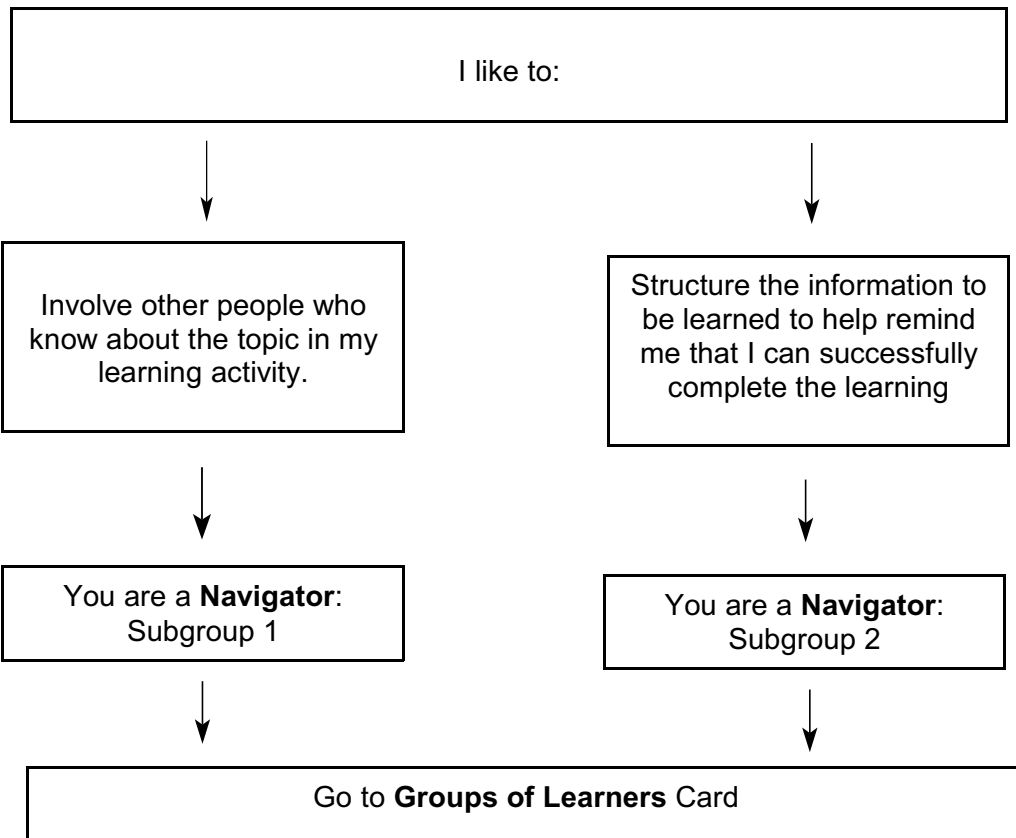




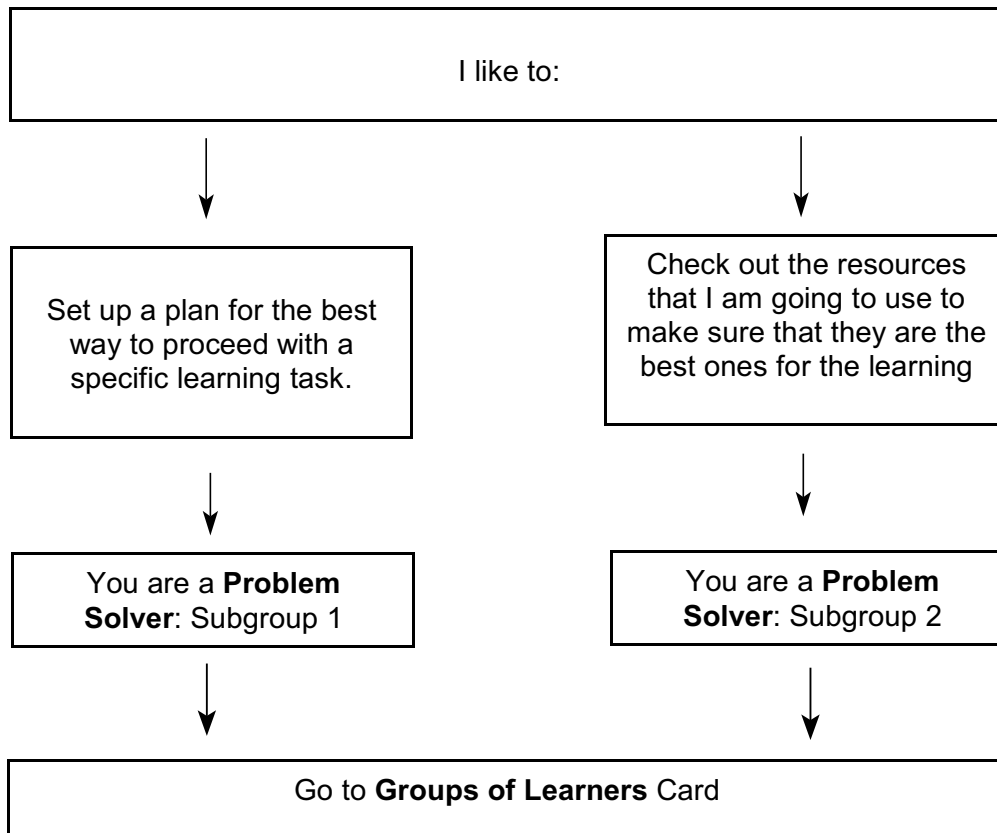
Printed on BLUE card stock
Page 1



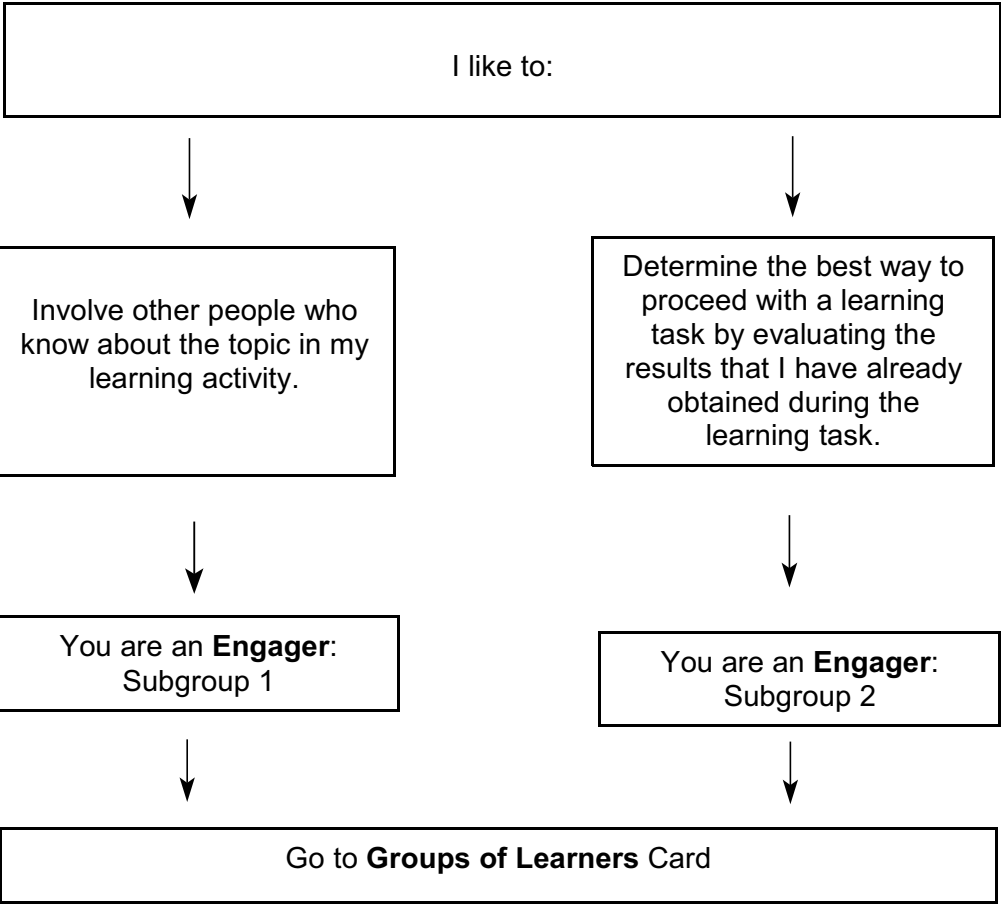
Printed on Red card stock
Page 2



Printed on YELLOW card stock
Page 3



Printed on GREEN card stock
Page 4



Printed on GRAY card stock
Page 5

Navigators

Description: Focused learners who chart a course for learning and follow it. Subgroup 1 likes to use human resources while Subgroup 2 is more concerned with the organization of the material into meaningful patterns.

Characteristics: Focus on the learning process that is external to them by relying heavily on planning and monitoring the learning task, on identifying resources, and on the critical use of resources.

Instructor: Schedules and deadlines helpful. Outlining objectives and expectations, summarizing main points, giving prompt feedback, and preparing instructional situation for subsequent lessons.



Problem Solvers



Description: Learners who rely heavily on all the strategies in the area of critical thinking. Subgroup 1 likes to plan for the best way to proceed with the learning task while Subgroup 2 is more concerned with assuring that they use the most appropriate resources for the learning task.

Characteristics: Test assumptions, generate alternatives, practice conditional acceptance, as well as adjusting their learning process, use many external aids, and identify many of resources. Like to use human resources and usually do not do well on multiple-choice tests.

Instructor: Provide an environment of practical experimentation, give examples from personal experience, and assess learning with open-ended questions and problem-solving activities.

Engagers

Description: Passionate learners who love to learn, learn with feeling, and learn best when actively engaged in a meaningful manner. Subgroup 1 likes to use human resources while Subgroup 2 favors reflecting upon the results of the learning and planning for the best way to learn.

Characteristics: Must have an internal sense of the importance of the learning to them personally before getting involved in the learning. Once confident of the value of the learning, likes to maintain a focus on the material to be learned. Operates out of the Affective Domain related to learning.

Instructor: Provide an atmosphere that creates a relationship between the learner, the task, and the teacher. Focus on learning rather than evaluation and encourage personal exploration for learning. Group work also helps to create a positive environment.



Groups of Learners

APPENDIX
D

April 28, 2003

Dear Child Care Health Consultant,

I am the coordinator of training at California Child Care Health Program and currently a doctoral student at Oklahoma State University. You are invited to participate in the second round of survey in a study of learning of the child care health consultant.

This study is being conducted for partial completion of a doctoral research dissertation. You were selected as a possible participant because either you or your colleague completed the first survey identifying the demographic profile of the child care health consultant, hindrances to learning, and helpful items for learning. The second round of survey will help to rank and rate the identified learning tools and instructional methods from the first round.

Please complete the attached survey and fax it back to me at (510) 839-0339. Or, you may mail it to the below address. Thank you for your continual support and consideration.

Sincerely,

Sharon D. Ware, RN, BSN, MA
Doctoral Candidate
475 Rivergate Way, #14
Sacramento, California 95831

APPENDIX
E

Child Care Health Consultant Learning Strategies Survey Part 2

The design of this survey is to further understand the adult learning needs of child care health consultant. The researcher would like to elicit your preferred learning tools and instructional methods as health professionals when attending pre-service or in-service training to upgrade your skills in child care health consulting. Other child care health consultants chose the following methods during a 2001-2002 survey administered by the researcher.

The intended of the survey is to further clarify the preferred learning needs of the child care health consultant. It is very important that you realize: (1) your participation in this study is voluntary, (2) you will not be penalized in any way if you choose not to participate, and (3) you are free to withdraw your consent to participate in this study at any time. By completing this survey and signing your name, you are giving us permission to use the data you provided for research purposes. The information you provide will remain confidential and will not be available to anyone other than the researcher and the academic advisement team. The author of this survey intends is to use the data for partial completion of her doctoral dissertation. In addition, she may use the data for future publications. However, no identifying information about individuals in the study will be revealed, complete confidentiality will be maintained. The information gathered on this form will be entered into a general data bank. After the analysis of the data, the data collection form will be destroyed within a six-months period. For questions about this project, please contact Sharon Ware at the California Childcare Health Program, 1322 Webster Street, Oakland, California 94612. Alternatively, contact Sharon by phone at (510) 281-7908 or email at: sharyndouglass@cs.com. Thank you for participating in this survey.

Signature

Print Name

Date

Directions:

Please check your preferred learning strategy in accordance to the ATLAS (*Assessing The Learning Strategies of Adults*) instrument. An example is, Problem Solver, Subgroup 2.

If you are unable to recall your preferred learning strategy, go to the following web site and re-take the ATLAS at: <http://members.aol.com/researchosu/sharon.htm>

| PROBLEM SOLVER | | ENGAGER | | NAVIGATOR | |
|----------------|---------------|---------------|---------------|---------------|---------------|
| __ Subgroup 1 | __ Subgroup 2 | __ Subgroup 1 | __ Subgroup 2 | __ Subgroup 1 | __ Subgroup 2 |

Equipment RANKED ITEMS

Directions: Please rank the following equipment items according to most liked (1) and least liked being a (7).

- Audio Only
- Audiovisual Equipment (TV/VCR)
- Flip Charts
- Overhead Projects
- Power Point
- Video Only
- Visual Aids

Equipment Items RATED ITEMS

Directions: The below items are to be rated based on your agreement to using them when receiving training. Please make your choice by placing an "x" in the appropriate box. Response range from strongly agree (5), agree (4), no preference (3), disagree (2), and strongly disagree (1).

| | Strongly agree (5) | Agree (4) | No preference (3) | Disagree (2) | Strongly disagree (1) |
|--------------------------------------|-----------------------|-----------|-------------------------|-----------------|-----------------------------|
| Audio Tape Only | | | | | |
| Audiovisual Equipment (TV/VCR) | | | | | |
| Flip Charts | | | | | |
| Overhead Projects | | | | | |
| Power Point | | | | | |
| Video Tape Only | | | | | |
| Visual Aids | | | | | |

Instructional Methods RANKED ITEMS

Directions: Please rank the following **internal** (what is needed inside of you) instructional methods according to **most liked** being a (1) and **least liked** being a (10). These methods are interactive techniques in nature.

- Hands-on Learning
- Experiential
- Group Activities
- Role Playing
- Brainstorming, Interactive Dialogue
- Interactive Learning
- Discussion
- Real World Application
- Reflective Writing
- Using a Variety of Instructional Methods

Directions: Please rank the following **external** (what is needed outside of you) instructional methods according to **most liked** being a (1) and **least liked** being a (10). These methods are presentational techniques in nature.

- Outcome based
- Outlines of Presentation
- Humorous, Animated Speakers
- Guest Speakers
- Case Studies
- Scenarios
- Handouts and Resource Materials
- Lecture
- Demonstrations
- Fieldwork / Making Site Visits

Instructional Methods RATED ITEMS

Directions: The below instructional methods are to be ranked based on your agreement to using them when receiving training. Please make your choice by placing an "x" in the appropriate box. Response range from strongly agree (5), agree (4), no preference (3), disagree (2), and strongly disagree (1).

| | Strongly agree (5) | Agree (4) | No preference (3) | Disagree (2) | Strongly disagree (1) |
|---|-----------------------|-----------|-------------------------|-----------------|-----------------------------|
| Hands-on Learning | | | | | |
| Experiential | | | | | |
| Group Activities | | | | | |
| Role Playing | | | | | |
| Fieldwork / Making Site Visits | | | | | |
| Brainstorming, Interactive | | | | | |
| Interactive Learning | | | | | |
| Discussion | | | | | |
| Outcome based | | | | | |
| Outlines of Presentation | | | | | |
| Humorous, Animated Speakers | | | | | |
| Guest Speakers | | | | | |
| Case Studies | | | | | |
| Scenarios | | | | | |
| Handouts and Resource Materials | | | | | |
| Lecture | | | | | |
| Demonstrations | | | | | |
| Real World Application | | | | | |
| Reflective Writing | | | | | |
| Using a Variety of Instructional Methods | | | | | |

Thank you very much for completing this survey. Please return paper surveys to: Sharon Ware at the California Childcare Health Program, 1322 Webster Street, Oakland, California 94612 or submit via email to: sharyndouglass@cs.com. Your information will provide valuable insight into the adult learning needs of the child care health consultant.

APPENDIX
F

Definitions

Child Care--Out-of-home developmentally appropriate care and early education for children away from their families. (American Public Health Association & American Academy of Pediatrics, 2002, p. xvii) in a child care center, family child care home, drop-in facility, school-age facility, or facility for special needs children.

Child Care Health Consultant--A physician, certified nurse practitioner, or registered nurse who has pediatric experience and is knowledgeable in child care, licensing regulations, and community resources (American Public Health Association & American Academy of Pediatrics, 1992, p. 398).

Continuing Education--"educational opportunities throughout a professional' life-span of work" (Brookfield, 1986, p. 171).

Curriculum--The sum of the content information used for learning (Seaman & Fellenz, 1989), which includes the educational objectives (Kidd, 1973).

Curriculum Design--"The plan development to guide educational activities in a situation" (Houle, 1973).

Curriculum Outcomes--The result of applying all aspects of the curriculum to a learning situation, thus meeting the educational objectives (Kidd, 1973).

Instructional Methods--The methods of teaching in which an instructor uses to convey learning activities (Kidd, 1973; Brookfield, 1986). Instructional methods can be external or internal.

Instrumented Learning--Learning which is triggered by the use of an instrument (D. Munday, 2002, p. 1).

Learning Strategies--Methods adults use to go about learning a new skills or knowledge (Conti & Kolody, 1999).

Learning Tools--Equipment used to enhance learning. These items include; a tape cassette, a slide show, Power Point Presentation, overhead transparencies, and flip charts. When a learner uses a tape cassette, he/she receives audio only instruction. When a learner uses a slide show there is no voice or audio accompaniment, thus providing a video only learning tool. Learning tools are teaching tools. Learning tools are he "things in the

setting that helps us learn" (Merriam, 2001, p. 94).

Skills-Self-Knowledge Inventory of Lifelong Learning Strategies instrument is a valid and reliable instrument that measures learning using real-life situations in the area of metacognition, metamotivation, memory, critical thinking, and resource management (Conti & Fellenz, 1991).

Training--Formal or informal instruction in a field or study or vocational skill (Webster, Unabridged Dictionary, 2001). Training is considered a workshop not part of a course of study leading to a degree.

APPENDIX
G

**Oklahoma State University
Institutional Review Board**

Protocol Expires: 1/8/2004

Date: Thursday, January 09, 2003

IRB Application No ED0356

Proposal Title: LEARNING STRATEGIES OF CHILD CARE HEALTH CONSULTANTS

Principal
Investigator(s):

Sharon Ware
206 Willard
Stillwater, OK 74078

Gary Conti
206 Willard
Stillwater, OK 74078

Reviewed and
Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

Dear PI :

Your IRB application referenced above has been approved for one calendar year. Please make note of the expiration date indicated above. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved projects are subject to monitoring by the IRB. If you have questions about the IRB procedures or need any assistance from the Board, please contact Sharon Bacher, the Executive Secretary to the IRB, in 415 Whitehurst (phone: 405-744-5700, sbacher@okstate.edu).

Sincerely,



Carol Olson, Chair
Institutional Review Board

VITA

Sharon Douglass Ware

Candidate for the Degree of

Doctorate in Education

Dissertation: LEARNING PROFILE OF THE CHILD CARE HEALTH CONSULTANT

Major Field: Adult Education

Biographical:

Personal Data: Born in Los Angeles, California, October 26, 1953, daughter of Charles and Margueritte Brown. Divorced mother of three adult children; Shannon, Alicia, and Alison Ware.

Education: Received Bachelor of Science in Nursing from California State University, Long Beach, California in 1979, received a Master's of Arts in Education from Oral Roberts University, Tulsa, Oklahoma in 1993. Completed the requirements for Doctorate in Education with a major in Adult Education from Oklahoma State University in May 2005.

Experience: Hired as child care health consultant for the Child Care Resource Center, Tulsa, Oklahoma from 1995 to 2002. Training coordinator for UCSF California Child Care Health Program, Oakland, California, from 2002 to 2004. Currently employed as a child care nurse consultant with the Division of Public Health, North Carolina Department of Health and Human Services.

Professional Membership: National Black Child Development Institute, National Association for the Education of Young Children, National Black Nurses Association, and the SafeKids Coalition.