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**Knowledge building among family child care providers during a training  
using problem-based learning and computer mediated communication**

by

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A dissertation submitted to the graduate faculty  
in partial fulfillment of the requirements for the degree of  
**DOCTOR OF PHILOSOPHY**

**Major: Human Development and Family Studies (Early Childhood Education)**

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## ABSTRACT

This research study addressed two needs: (1) the need for research that describes and explains the process and individual benefits of knowledge building as it occurs among a group of practicing professionals and (2) the need for a viable model of training for family child care providers that is accessible, engaging, and effective for the development of professional knowledge and skills.

Based on social constructivist theory as expounded by Gordon Wells (1999), two research questions were addressed: 1) Does collaborative problem-solving that takes place entirely online reflect a progression toward systematicity, coherence and consistency? 2) Do participants in the group problem-solving experience a change in thinking as a result of participating?

Seventeen family child care providers from Iowa, split into two groups, participated in the Family Child Care Forum, a 7-week training in guidance and discipline that took place entirely online. Participants used a simple website and an e-mail list to explore three cases of young children's challenging behavior that had been submitted by the participants themselves.

To address the question of the quality of the group knowledge-building process, transcripts of the e-mail discussions were coded using the Degrees of Synthesis Analysis Model to explore the level of cognitive interaction represented by the integration of proposals of problem causes and solutions suggested by individual participants. Results indicated that the analysis model was discriminant and moderately reliable. Results also indicated that the participants' discussions showed variable levels of synthesis of individuals' ideas and suggested that the variability

was due to aspects of the cases being discussed. Further research is needed to refine the analysis model. Additional research is also needed to provide further understanding of the elements that contribute to and inhibit problem-solving discussions that build toward a more theoretical, comprehensive understanding of the knowledge needed to solve similar future problems in practice.

To address the question of individual change in thinking as a result of having participated in the group problem-solving process, three methods of data collection were used: (1) a comparison between pre- and post-discussion summaries of cause and solution provided via private e-mail by each participant; (2) self-ratings that participants provided at the end of the discussions gauging their change in thinking; and (3) phone interviews in which participants were asked open-ended questions regarding change in behavior that occurred as a result of having participated in the Forum. Results were reported in two ways: as a group summary and as two case studies of participants, one who had changed considerably in her thinking as a result of participation and one who had changed very little. Analyses suggested that the level of connectedness with the professional community was inversely related to the degree of change in thinking. The implication is that those who are less connected to the family child care community may benefit the most in terms of knowledge gain from this type of training. However, the presence of more knowledgeable peers within the discussion appeared to be a necessary component. The analysis results also revealed an inverse relationship between the level of participation in the discussion and the level of knowledge gained from it. Further research is needed to examine the relationships between professional community affiliation, modeling of

expert thought processes by more knowledgeable peers, and the elements necessary for the evolution of discussions that result in optimum learning.

Data from all sources, particularly the feedback from participants, indicated that a continuing education activity that used problem-based learning as an instructional strategy and was delivered by simple Internet technology was engaging and enjoyable for participants, conducive to their professional development, and feasible to implement. We concluded that the Family Child Care Forum was a viable option for a segment of the family child care provider population. Further research must be conducted in order to define the providers for whom it is most useful and those for whom it is least useful as a training option.

## CHAPTER 1: INTRODUCTION

### Rationale for Research Study

#### *Family Child Care as a Profession*

The work of providing care and education for children within one's home – family child care (FCC) – has helped to fill a burgeoning need of America's working families. The National Center for Education Statistics reported in 1996 (NCES, 1996) that roughly 13 million preschool-aged children, including 6 million infants and toddlers, were in some type of non-parental child care arrangement. Based on data from the 1997 National Survey of America's Families, the Urban Institute (Capizzano, Adams, & Sonenstein, 2000) reported that "76 percent of preschool children with employed mothers are regularly cared for by someone other than their parents. For more than half of preschool children with employed mothers, the primary child care provider is not related to the child. Thirty-two percent of children are in center-based child care arrangements, while about half as many (16 percent) are in family child care" (p. 1). Clearly, family child care is an option chosen by a significant number of working parents. The National Association for Family Child Care (NAFCC) and its state and local affiliates represent more than one million family child care providers caring for more than four million children across the United States. In Iowa in 1998, family child care providers (both registered and unregistered) offered care for at least 34,000 of the state's children (Iowa Child Care Resource and Referral, 1998) representing nearly 20% of all available child care in Iowa, including informal care, such as care provided by relatives.

Working parents have always been acutely aware of the struggle to find reliable, accessible, affordable child care arrangements to which they can entrust their children. But in recent years, the child care needs of America's working parents have come to the forefront of public attention. In response, the cause of improving the availability, accessibility, affordability and quality of child care has been taken up by large charitable foundations (e.g. The Annie E. Casey Foundation, The Children's Foundation, The Carnegie Corporation) as well as non-profit research and advocacy organizations (e.g. the Children's Defense Fund, the Child Care Action Campaign, the Families and Work Institute). An understanding of the importance of child care issues is also being reflected at state and federal government levels as well, a clear example of which was the First Ever White House Conference on Child Care, held in October of 1997.

*The Need for Continuing Education for Family Child Care Professionals*

One of the critical issues being addressed by policy-makers, researchers, lawmakers and advocates is quality in child care and the means of improving it. Research has consistently brought attention to the poor to mediocre quality of much of the available child care across the country (e.g., Kontos, Howes, Shinn, & Galinsky, 1994; Peisner-Feinberg & Burchinol, 1997; Whitebook, Howes & Phillips, 1990) and to the influence of quality of care on children's development (e.g., Kontos et al, 1994; NICHD, 1998; Whitebook, Howes, & Phillips, 1990). In addition, recent large-scale studies – The Cost, Quality, and Child Outcomes in Child Care Centers Study, The Family Child Care Training Study, and The Florida Child Care Quality Improvement Study – have shown a positive relationship between the amount of

specialized training an individual has in early childhood education or other child-related topics and the quality of the care and education that person provides to children (Kontos, Howes, & Galinsky, 1996). Research also indicates that family child care providers most likely to leave the profession were those that had less training but more formal education in early care and development, suggesting that continuing inservice education may help to lower the turnover rate among those providers with the most optimal educational background (Todd & Deery-Schmitt, 1996).

As a result of these findings, researchers, advocacy groups, and government initiatives consistently recommend that future efforts to improve child care include pre-service and ongoing specialized training in child development and caregiving practices (e.g., The Annie E. Casey foundation, 1998; Child Care Bureau, 2001; Kagan, S & Cohen, N., 1996). A growing number of states are increasing the pre- and inservice training requirements of child care providers (Azer & Bowie, 2000) and are developing career development systems for early care and education that clearly address the need for specialized training in child development and child care practices (Azer & Hanrahan, 1998).

Those family child care providers in the forefront of establishing FCC as a profession also recognize specialized training as a key component to professional development. The accreditation of a family child care program through the National Association for Family Child Care requires that the provider have at least 65 hours of documented training in six areas of professional practice (NAFCC, 2000). Child care providers who have participated in training programs also see knowledge of child

development and child care practices as an important aspect of being a professional and a valuable means of improving their child care homes (Dombro & Modigliani, 1995). In summary, all of those who have a stake in child care quality agree that continuing education is a key piece of the quality puzzle.

### *The Effectiveness of Family Child Care Continuing Education*

The field of early care and education faces a tremendous challenge to provide continuing education to family child care professionals that is accessible, affordable, meaningful, and effective in changing caregivers' thinking and practice. The structure and characteristics of family child care are distinct enough from center-based care to warrant separate study and development of continuing education for providers who are home-based. Research that has assessed the professional development needs of family child care providers indicates that the most important considerations for providers in choosing to participate in educational opportunities are the location of the training (i.e. distance from home), the amount of time it takes away from being with family, and the relevance of the topic to their program (Dombro & Modigliani, 1995; Starnes, 1994). FCC providers who have chosen child care as a career value training as a way to improve their own practice, to develop supportive relationships with other FCC providers, and to improve their self-esteem as a professional (Dombro & Modigliani, 1995; Iutovich et al, 1997; Starnes, 1994). Training techniques that providers found to be especially helpful in their learning encouraged providers to share and compare their caregiving practices, involved a balance of interaction among providers and guidance by a more knowledgeable peer, and were



related explicitly to providers' everyday caregiving experience (Dombro & Modigliani, 1995).

Studies that have assessed the effectiveness of FCC training in improving caregiving practices have shown mixed results. An early large scale study found providers with ongoing educational experiences were more likely to interact more positively with children than those without (Grasso & Fosburg, 1980). A similar, more recent study of infant care found that caregivers' specialized training predicted caregiving quality in family child care but not in center care or relative care (NICHD, 1997). In another recent large-scale study, Kontos, Howes and Galinsky (1996) reported slight improvement in global quality but no improvement in caregiver-child interactions as a result of training. Other research has suggested that training has no impact on quality (Iutovich et al, 1997; Vartuli, 1989).

One probable reason for the mixed results of the previously mentioned studies is that training was broadly defined and very inclusive with regard to instructional strategies. Typical instructional techniques for child care training programs include one or more of the following elements: home visits, mentoring, group discussion, make-and-take activities, videotapes, role playing, lecture, expert speakers, participant presentations, and take-home exercises. Research that has aggregated such diverse training formats and looked for effects on global quality outcomes has not been particularly useful in determining the characteristics of training that most effectively result in an increase in professional knowledge and skills. Although many reports of program implementation and evaluation have measured participants' self-assessment of satisfaction with the training (e.g.

Iutovich et al, 1997), research that has taken a more focused and systematic approach to examining the effectiveness of training in improving caregiver knowledge or practice has not been reported in the literature.

### Research Purpose and Questions

The purpose of this research study was to expand the little knowledge that is available about increasing family child care providers' professional knowledge through continuing education experiences. I specifically chose to focus my study on cognitive change within and as a result of a purposeful and well-planned learning activity, as opposed to other processes or effects. The theoretical basis from which I drew my definition of cognitive change was Vygotsky's sociocultural theory of learning and development as elucidated by Gordon Wells (1999). Within sociocultural theory, learning is often characterized as *knowledge building* and is understood as occurring within the context of interaction among individuals. In order to study the knowledge building that might occur among family child care providers in a learning activity, it was important to choose an instructional design that would allow for the possibility of group knowledge building among participants. Problem-based learning was chosen as an appropriate instructional design for this study because it shares key theoretical principles with social constructivism and has been well researched as an effective instructional strategy for bringing about an increase in professional knowledge and skill (Gallagher, 1997; Barrows, 1998).

Because a particular need for family child care providers is accessibility of continuing education opportunities, I also gave considerable thought to the delivery method of the learning opportunity in which I would study knowledge building.

Traditionally, continuing education opportunities have taken the form of face-to-face workshops. More recently, institutes and agencies that provide child care training have implemented satellite technology as a delivery method. A promising delivery method that is just beginning to be utilized in the early care and education field is computer technology. Online courses are now being offered by degree-granting institutions, public agencies and private enterprises. Online training that a family child care provider could access from home at her convenience would obviously be appealing with regard to accessibility. To date, however, no research data has been made available to substantiate the effectiveness of these various online courses in facilitating an increase in professional knowledge for family child care providers.

It was my intent to approach the study of knowledge building within a computer-mediated learning context by examining the processes and products that were generated by two groups of Family Child Care providers as they discussed difficult problems encountered by fellow providers. I determined that this goal could best be accomplished using a mixed research design using both qualitative and quantitative approaches. I agreed with Rossman and Wilson, as quoted in Miles and Huberman (1996), that linking qualitative and quantitative data could be useful: "(a) to enable confirmation or corroboration of each other via triangulation; (b) to elaborate or develop analysis, providing richer detail; and (c) to initiate new lines of thinking through attention to surprises or paradoxes, ... providing fresh insight" (p. 41).

Quantitative measures were useful in collecting information about the participants in this study in order to describe them as a group and, together with

qualitative data, to describe individuals, when such an analysis was useful in answering a research question. Quantitative and qualitative measures and analyses were also used to validate and clarify one another as I examined change in thinking for individual participants.

My most extensive use of a qualitative approach was in the collection and early analysis of data gathered to understand the process of knowledge building of the group of participants over time. My examination of group processes was guided by the theoretical constructs already established by Wells (1999). Therefore my intent was not to develop grounded theory through qualitative examination, but to establish and/or refine analysis methodologies that would be helpful in testing, expanding and refining Wells' (1999) iteration of sociocultural theory and, in the process, to make discoveries about the knowledge building experience encountered by the participants in our study that would further inform both the research and the development of professional knowledge and learning of family child care providers. This use of qualitative methodology is an example of *confirmatory* research, the purpose of which is to "seek to test or further explicate a conceptualization" (Miles & Huberman, 1996, p. 17). In the later stages of analysis, however, quantitative representations of the attributes of the data that had been identified qualitatively were helpful for identifying patterns emerging within the large corpus of data.

The research literature relevant to this study was not sufficient to provide a well-developed understanding of the phenomenon that I was interested in studying nor was it sufficient to justify the development of research hypotheses that could be tested using population statistical analyses. A more appropriate research design, I

contend, was the use of a mixture of quantitative and qualitative data collection methods, data analysis methods and reporting methods. This approach was intended to provide a richer description and greater understanding of knowledge building than had been previously reported in the literature and, therefore, would guide further research, both quantitative and qualitative.

The following research questions were addressed in this study:

1. Did the group problem-solving process reflect a progression towards "systematicity, coherence and consistency," the hallmarks of Wells' knowledge building stage of knowing?
2. Was there evidence of appropriation by individuals of the socially constructed knowledge of the group, reflecting Wells' final stage of knowing, understanding?

## CHAPTER 2: LITERATURE REVIEW

The purpose of this chapter is to make explicit both the theoretical and empirical foundation upon which this research study was built. A summary of Wells' (1999) explication of sociocultural theory will lay the theoretical foundation. This summary will be followed by a review of the existing research literature that is relevant to our study of the knowledge building process as it might occur within a computer-mediated learning environment using a problem-based learning approach. Two bodies of research will be reviewed: research that has examined problem-based learning and its effectiveness as an instructional framework for increasing professional knowledge and skills; and research that has examined learning within computer-mediated activity.

### Wells' Spiral of Knowing Theoretical Model

The theoretical basis for this research study is social constructivism. The key assumptions of social constructivist learning theory are that: 1) knowledge is actively constructed by the learner rather than passively received; 2) learning is situated within real-world contexts and cannot be understood apart from the learning activity; 3) new knowledge is built upon that which is already known from one's unique experiences; and 4) thinking and learning is inherently social, either as directly communicated or indirectly mediated through semiotic tools. Although the principles of social constructivism have been espoused by many in education, many have also struggled with the concept of knowledge construction. For researchers and for practitioners who must assess learning, the difficult but essential questions are: what is knowledge and how can newly constructed knowledge be identified? In addition,

in order to design optimal learning experiences, more must be understood about the process of knowledge building and how it can best be fostered.

In order to address these questions, Gordon Wells (1999) has synthesized the theoretical work of Vygotsky, generally agreed to be the most influential sociocultural theorist in education today, and Halliday, a well-known language development theorist, into a theory of social knowledge building through language that describes and explains the process of learning through verbal interaction with a coherency and detail that has previously been lacking in the theoretical literature. In his discussion of definitions of knowledge and learning, Wells emphasizes that the most fruitful approach to understanding knowledge, from a constructivist viewpoint, is to focus, not on knowledge as a product or a stable mental entity, but to focus rather on the activity of knowing. Knowing, according to Wells, is "the intentional activity of individuals who, as members of a community, make use of and produce representations in the collaborative attempt to better understand and transform their shared world" (p. 76). Representations are artifacts that are created through human activity and that are used "as mediational means for the related ends of understanding and acting effectively in the world" (p. 72). Though representational artifacts may take many forms, the form of interest in a computer-mediated distance learning activity is written representation. According to Wells, a written representation becomes a "knowledge object" (p. 107), first for the writer, who is able to reflect on his or her own understanding during the process of writing and make explicit what has been implicit (see also Harrington & Hathaway, 1994; Jonassen et al, 1995 Korthagen & Kessels, 1999), and then for the other readers

who respond to the writing in a variety of ways. The artifact is not knowledge itself, but a tool to mediate further knowing.

To describe what happens during knowledge building, Wells uses the term "transformation." He asserts that several types of transformations may occur during collaborative knowledge construction. Transformation may occur on an individual level as a person appropriates the actions of the group and becomes more able to participate more effectively and independently in future action. The creation of new tools and practices for problem-solving is another type of transformation that may occur as a result of a collaborative learning activity. Sometimes the activity itself undergoes a transformation as a result of the actions of the participants, resulting in a new direction for learning. A final transformation may take place if the activity results in a change in the way the participants interact with one another. Any of these transformations may be very small and have a minimal effect on future actions or may be much larger, having a more profound effect on not only the immediate participants but on the larger community of practice. Wells summarizes by stating,

"As newcomers engage in joint activities with other members of the culture, they are transformed in terms of their understanding and mastery of the community's practices and in their ability to participate in them; and this, in turn, transforms the community into which they are being inducted.

Furthermore, as newcomers become progressively more able to engage in solving the problems that the community faces, they may contribute to a transformation of the practices and artifacts that are employed...." (p. 242).



Wells proposes a model of the process of knowing that he calls the "Spiral of Knowing" (p.85). Knowing starts with *experience*, defined as "the meanings that are constructed [by a person] in the course of participation in the succession of events that make up his or her life trajectory" (p. 84). *Information* gathering is the next step in the knowing process, with information consisting of the meanings that other people have made of their experiences. Wells points out that information is encountered in a wide variety of genres, from casual conversation to reference texts to works of art. *Knowledge building* then occurs as "the individual is engaged in meaning making with others in an attempt to extend and transform their collective understanding with respect to some aspect of a jointly undertaken activity" (p. 84). Wells points out that this step "typically involves constructing, using and progressively improving representational artifacts of various kinds with a concern for systematicity, coherence and consistency" (p.84). *Understanding* then occurs as the individual appropriates the actions manifested collaboratively into increasingly independent "action of personal and social significance" and into a personal "framework within which future experience will be interpreted" (p.85). This understanding then becomes the starting point of experience for further knowing, hence the choice of a spiral as a representational model of the process.

#### Implications of Spiral of Knowing Theory for Research

Wells' expansion of Vygotskian theory of the processes by which knowledge is acquired has arisen in large part from his action research with elementary school teachers and from his own experiences as a university instructor. His theoretical constructs need to be tested in other learning contexts and with other learners in

order to continue to improve the Spiral of Knowing as a general theory of learning. In particular, more work needs to be done to describe and explain the specific processes within each of the four phases of knowing and to identify variables that might inhibit or enhance those processes in various contexts and with various groups of learners.

### **Problem-Based Learning as an Instructional Strategy**

Although the field of early care and education has not carefully evaluated the efficacy of specific instructional strategies, the broader field of education has much insight to offer in this area. One strategy that shows particular promise for transfer to child care provider training is problem-based learning (PBL). Problem-based learning is an instructional strategy that apprentices newcomers into the attitudes, values, knowledge and practices needed to become an effective member of a community of practice by scaffolding the skills and knowledge necessary to solve problems typical to that community, particularly problems that are complex and ill-defined.

### ***The Theoretical Foundation of PBL***

Early care and education is fraught with situations that fit Gallagher's (1997) definition of "fuzzy or ill-structured" problems (p.336) – the ideal problems for a problem-based learning approach. The defining features of ill-structured problems are: 1) more information is needed to understand the problem than is initially available; 2) there is no one correct way of arriving at a solution; 3) the problem changes as new information is gathered; and 4) there is no one "right" answer that can be verified with certainty.

Caregivers, like teachers of older children (Korthagen & Kessels, 1999), often react reflexively to “fuzzy” problem situations by immediately applying their own personal meaning to the situation, meanings that are shaped by values, experiences, and needs. Korthagen and Kessels (1999) refer to these personal meanings as Gestalts. On the Gestalt level, this reactive process takes place implicitly, with little conscious awareness of the assumptions on which the reaction is based. The reflective practitioner, however, has learned to think back over her understanding of the problem and evaluate that understanding, raising the level of reasoning to a more theory-based, less contextualized level. Hmelo and her colleagues (1997) refer to this type of problem-solving as hypothesis-driven. This theory level of problem-solving is characterized by a more explicit understanding of relationships, definitions and logically derived propositions that the practitioner can apply, or re-contextualize, in a variety of situations (Korthagen & Kessels, 1999).

Problem-based learning is one instructional strategy that can scaffold this type of reflection on practice and reflection in practice (Schön, 1990). Problem-based learning is guided by the premise that collaboratively working through a problem that is authentic to the community of practice will bring practitioners, by means of reflection, from the level of Gestalt-based reactions to a more theory-based level. In addition, when the reflective process is carried out in collaboration with others, faulty assumptions and beliefs or inadequate knowledge are more likely to surface. Hatano (1991) and others hold that it is this cognitive dissonance that is the catalyst for learning in collaborative educational activities. Wells (1999) broadens that definition of knowledge building, proposing that learning – or *knowing*, as Wells

prefers to label it (p. 70) takes place when learners engage in comparison, argument, elaboration and negotiation with one another's ideas in order to create a consistent, coherent, and systematic explanation – a more abstract theoretical understanding – that can be appropriated when solving similar problems. Problem-based learning has this type of collaborative reflection and engagement at its core.

Another of the goals of PBL is to apprentice the learner into the process of solving problems relevant to that community. More specifically, problem-based learning gives the learner structure and support in working through the stages of problem-solving: 1) defining the problem; 2) assessing what is known about the problem; 3) assessing what more needs to be known; 4) making use of appropriate sources of further knowledge; 5) evaluating that knowledge for its usefulness; and 6) integrating the information into a defensible problem solution (Hmelo et al, 1997). PBL provides the structure and support necessary for learners to carry out authentic problem-solving tasks that they would not have been able to manage on their own with the intent that learners' competence will increase until they eventually will be able to achieve the same success independently. By using an authentic problem as the starting point, learners are able to appropriate relevant discipline-based knowledge within a meaningful context, creating a deeper understanding of the relationships between facts, concepts, and theories that guide expert practice within that discipline. Duffy and Cunningham (1996) summarize the essence of PBL in the following statement:

“It is the activity in relation to the content that defines [problem-based]

learning: the ability to think critically in that content domain, to collaborate with

peers and use them to test ideas about issues, and the ability to locate information related to the issues and bring it to bear on the [solution].” (p. 190)

### *Research in PBL*

PBL was initially implemented in medical education some thirty years ago and since then has received a great degree of acceptance as a powerful learning tool. It has consequently been applied in a variety of educational settings, such as law and business education, other health professions, and K-12 classrooms (Gallagher, 1997). Problem-based learning (PBL) has a large body of research supporting it as an effective instructional strategy, with the majority of studies focused on the use of PBL instruction in medical education.

In recent years, two meta-analyses (Albanese & Mitchell, 1993; Vernon & Blake, 1993) synthesized research conducted since 1970 that compared problem-based learning to traditional instructional methods in medical education. In the several areas where comparisons could be made, the reviews were quite similar in their conclusions, overall favoring PBL-based programs. Specifically, students in PBL programs received higher evaluations in clinical performance and rated their level of satisfaction as higher than those in traditional programs. In the area of academic achievement, the results of the studies included in the meta-analyses were mixed.

In a review of the literature, Gallagher (1997) summarized the past 20 years of research on PBL by listing the following evidence of the effectiveness of PBL:

1. Students learn more effectively when they are given a meaningful context in which to work with information;

2. Learning and motivation are increased when the curriculum is based on significant problems;
3. Long-term content retention is greater in problem-based learning instruction than in traditional instruction;
4. PBL-trained students tend to take an analytic approach to problems while traditionally trained students tend to use a memory-based approach.

A search of the recent literature on PBL revealed studies in a wide variety of disciplines: English as a second language (ESL); dental education; elementary social studies; gifted education; chemical engineering education; civil engineering education; counselor education; teacher education; educational administration; and business education. A notable absence, however, is research of the use of PBL in the field of early care and education.

The breadth and depth of the research on PBL can be seen from the previous paragraphs. A closer look at two research studies will provide a sample of the many approaches that have been taken in examining the learning that takes place through PBL.

Hmelo and colleagues (1997) were careful to use the theory undergirding PBL as the basis for their quantitative study that assessed the achievement of PBL learning goals for a group of 40 medical students. The researchers identified the primary learning goals of PBL as clinical reasoning, integration of scientific and clinical knowledge, and lifelong learning skills. The participants were first and second year medical students, half of who had taken PBL courses and half of who had taken traditional courses. The researchers compared the performance of the participants

on their assessments of a clinical case study. The researchers coded the written explanations for coherence of explanation, reasoning strategies, use of science concepts and self-directed learning strategies. Results indicated that students in the PBL group used significantly more hypothesis-driven reasoning and were more coherent in their explanations, two qualities found in the reasoning of experts in this field when confronted with complex problems (Norman, Trott, Brooks, and Smith, 1994). In addition, PBL students showed a slight tendency ( $p < .10$ ) to use more basic science concepts in their reasoning. Finally, students in the PBL group were significantly more likely to indicate a more comprehensive approach to gathering further information needed to make a diagnosis, both in the nature of the information and in the resources used to obtain the information.

Naidu and Oliver (1996) conducted a study of a 16-week PBL course offered to students in the final year of a nursing program. This course was unique in that it occurred primarily through computer-mediated communication. Besides participating in the ongoing discussion about each case, participants were required to write and post a critical reflection record in which they gave a comprehensive individual assessment of each problem at the end of the group discussion. These critical reflection records (three for each participant) were used by the researchers to assess the degree to which the learning outcomes were achieved. Unfortunately, the authors gave little information regarding the data analysis methodology. The authors reported finding considerable evidence of the following indicators of learning in the students' individual summaries: 1) insightful and meaningful analysis of the nature, size, and complexity of the problems; 2) awareness of and critical reaction to the

perceptions of others; 3) exploration and appropriation of outside sources of information; 4) negotiation of differing viewpoints with a trend toward consensus; 5) coalescence of theory and practice; and 6) attitudes conducive to collaborative learning. Although intriguing, these observations lack the rigor of a well-designed qualitative analysis.

### *Implications for Further Research*

Howard Barrows, recognized as the founder of the PBL educational method in the field of medical education, recently reiterated the educational objectives of authentic problem-based learning. Barrows (1998) states the primary objective as “the acquisition of a rich body of deeply understood knowledge that is integrated from a wide variety of disciplines, structured in ways that will facilitate recall and application to other problems, and enmeshed with the problem-solving required to analyze and solve patient problems” (p. 630). Although Barrows was addressing the implementation of PBL in medical education, the objective would be just as appropriate in the pre-professional and in-service education of child care providers, given the complexity of caregiving practice, the broad understanding of knowledge from a variety of disciplines necessary for optimum caregiving, and the need for the ability to recognize, understand and solve the many problems that routinely occur in caregiving. Problem-based learning could be a particularly effective strategy in some of the more complex areas of child care, such as guidance and discipline, parent relationships, and caring for multi-age groups. The research literature shows ample evidence that the problem-based learning approach is effective in meeting Barrows’ learning objective in medical professional preparation programs.



However, preservice and inservice education for child care professionals differs from education in professions such as medicine, dentistry and nursing in many ways, such as level of rigor, existence of professional standards and competencies, regulations specifying minimum educational standards for practice, and students' level of investment in and expected return from educational programs. These differences are even more marked for early care and education professionals who have chosen to practice family child care. The effectiveness of a problem-based learning educational strategy for family child care providers has not been studied but would provide much needed information to those who design and implement education programs for this unique professional population.

#### Computer-Mediated Communication

The unique challenges of meeting the training needs of FCC providers necessitate the exploration of innovative methods and delivery systems for educational activities. One of the most promising avenues of exploration is computer-mediated communication (CMC), particularly within the Internet environment. Advances in technology have made the Internet an ever more accessible, convenient, affordable and familiar conduit for information into the home. Although CMC is only just beginning to be utilized within the early childhood education field – primarily in degree programs from colleges and universities – CMC has been implemented and researched in other areas of education for many years.

#### *Definition of Computer-Mediated Communication*

Computer-mediated communication is a broad term that refers to the use of computer networks to facilitate interaction between people at a distance. Many forms

of CMC currently exist, including electronic mail (e-mail), computer conferencing, bulletin boards and chat rooms, to name the most well-known. Another variation within CMC is that it may involve one-to-one, one-to-many, or many-to-many communication. In addition, communication may be synchronous (e.g. chat rooms) or asynchronous (e.g. e-mail). Although CMC was originally created to facilitate communication among researchers, CMC is now being used in nearly every context in which people communicate: business, education, commerce, personal communication, etc.

### *Research in Computer-Mediated Communication*

The volume of research examining CMC in its many contexts is large. Yet even when the scope is narrowed to education, the forms that instruction can take when using CMC as a learning context are as varied as they are in face-to-face instruction, making the synthesis of research in this area a formidable task. Some of the dimensions on which CMC implementation in educational settings may vary are: content area; degree to which CMC is used (i.e. CMC as the sole means of interaction between learners and instructor or as a supplement to face-to-face interaction); educational level of the course; length and intensity of the course; instructional strategies employed (e.g. project work, discussion, collaborative writing); group size; role of the instructor; motivation for participation (e.g. graded course requirement); training for learners in use of the CMC system being used; complexity of online environment and activities; and various characteristics of learners (e.g. age of students; traditional or non-traditional students). The list of variables in computer-mediated learning includes issues of pedagogy, instructional

design, and learner-related variables as well as those that are specific to the technology. These complications make comparisons, both within a single study and between studies, a complex task of arguable value (Riel & Harasim, 1994). Perhaps this issue helps explain the fact that the great majority of studies of networked collaborative learning have been anecdotal descriptions and evaluations of innovative implementations (e.g., Bonk et al., 1998, Bullen, 1997; Eastmond, 1995; Ruberg, Moore & Taylor, 1996; Schlager, Fusco & Shank, in press).

In an effort to focus on research that might inform and guide the implementation and study of the use of CMC for family child care training, the following review looks at two areas of study: research and evaluative studies on the use of CMC in pre- and inservice K-12 teacher development and research and evaluative studies that have attempted to measure or assess cognitive outcomes in CMC learning activities.

#### *Pre- and Inservice Teacher Development*

Hawkes (1999) reviewed the literature on network-based communication among K-12 teachers in an effort to synthesize the claims, both positive and negative, made by researchers about the usefulness of CMC in promoting teacher professional development as a means toward achieving school reform. According to Hawkes, research on school reform and teacher development indicates that teachers are the key to curricular improvement and that teachers' professional development is best achieved in a collaborative atmosphere where they are encouraged to reflect on their own practice and challenge one another's beliefs and assumptions within a collegial dialogue. Hawkes identified three types of

professionally relevant knowledge that, when accessed and appropriated by teachers, can contribute to their development as professionals: knowledge of educational policy; knowledge of subject area; and knowledge of professional community. Within each knowledge area, Hawkes identified positive claims and negative claims within the literature about the utility of CMC as a means of attaining that knowledge. Table 1 summarizes this abridged review.

The studies that Hawkes reviewed covered a broad range of CMC, including e-mail, Web-based forums, newsgroups, and computer conferencing. In all of these various forms of CMC a variety of activities can take place. These activities may differ in degree of structure, duration, explicit goals, and group membership, to name only a few of the variations. The large number of potential benefits for teachers participating in networked activities, as implied by Hawkes' review, lays a broad foundation for further investigation into the specific aspects of activities that foster specific types of benefits.

Another comprehensive use of CMC with inservice K-12 teachers has been described by Schlager, Fusco and Schank (in press). In this work, the authors provide an overview of the development and use of a Web-based community of practice for teachers called "Tapped In" (TI). According to the authors, TI "is designed to carefully match Internet technology affordances (and constraints) with effective CoP [community of practice]-based community-building and professional development strategies" (p. 1). The goal of the developers was to create a platform-independent, Web-based, multi-user virtual environment where educators could "attend activities hosted by a variety of education organizations, conduct their

Table 1

*An abridged summary of positive and negative claims in network-based teacher professional development (adapted from Hawkes, 1999).*

Areas of Professional Development	Positive Claims	Negative Claims
Knowledge of Educational Policy	<ul style="list-style-type: none"> <li>• Informs teachers of policy debates taking place at broader levels.</li> <li>• Makes knowledge widely available.</li> <li>• Masks identities to minimize cultural biases.</li> </ul>	<ul style="list-style-type: none"> <li>• Creates unnatural communities unrelated by geographical, historical, or ethnic roots.</li> </ul>
Knowledge of Subject Area	<ul style="list-style-type: none"> <li>• Increases the volume of information on a content area available to teachers.</li> <li>• Puts participants at the point of defining the field rather than keeping up with it.</li> <li>• Puts teachers in contact with primary sources of relevant content information.</li> <li>• Encourages independent, self-directed learning activities.</li> </ul>	<ul style="list-style-type: none"> <li>• Source of the information contributed, cited, or used can be of questionable authenticity.</li> </ul>
Knowledge of Professional Community	<ul style="list-style-type: none"> <li>• Facilitates increased collegiality and collaboration among teachers.</li> <li>• Facilitates increased collaboration between teachers and researchers, experts, and other community members.</li> <li>• Reduces teacher isolation.</li> <li>• Evaluations of network-based communications are based more upon their merit than their source.</li> <li>• Builds leadership skills through mentoring, moderating, and organizational activities.</li> <li>• Fosters a sense of control over learning that encourages more commitment to collaborative learning experiences.</li> <li>• Builds self-efficacy by making teachers part of a functional group.</li> <li>• Facilitates an "on-demand," time sensitive mode of communication that fits teachers' work demands.</li> <li>• Renews teachers' belief in teaching as a profession</li> <li>• Fosters reflective practices leading to substantive improvement in teaching.</li> </ul>	<ul style="list-style-type: none"> <li>• Exchanges among teachers can be superficial and not focused on professional development.</li> <li>• Information is not necessarily well connected to theory, meaning or purpose.</li> </ul>

own on-line activities, or expand their circle of colleagues" (p.1). In other words, TI provides the multi-functional online environment and online technical support; educators make use of it to accomplish their own professional development goals through a number of different collaborative activities. The TI staff also host online community-wide activities to acculturate novices to the virtual environment and help groups in the creation of learning activities. Some of these community services are: a community help desk where an experienced member mentors a new member in navigating the TI environment; after-school synchronous discussions; private offices and meeting rooms; and newsletters and mailing lists describing TI events and news. TI has been in operation for over three years has a current membership of over 5,800 (as of October 1999). TI members include K-12 teachers, who make up approximately half of the members, as well as those in related professions or roles, including librarians, researchers, university faculty and graduate students, administrative staff, staff development specialists, and preservice teachers. TI tenants also include educational organizations, teacher education degree programs, and state and local education agencies.

The impetus behind Tapped In, as described by the authors, is the expansive goal of a systemic online community of practice for educators that provides the infrastructure to support the sharing of information, communication, and collaboration among all those with a stake in teacher professional development. The desire to accomplish needed reforms in the child care field have also given rise to a vision for a more systemic approach to professional development. As of yet, however, networked communication and online learning environments have not

been seriously explored as a vehicle for professional development of any kind; the development of systemic online community of practice to foster the professional development activities of child care professionals is a distant prospect – but a prospect, nonetheless, given the successful development of such a system within K-12 education.

### *Knowledge Building in CMC*

In theory, computer-mediated communication should be an ideal context in which participants learn. As a unique communication format, CMC is a hybrid of dialogue and writing. Building on Vygotskian theory, Wells (1999) argues that writing is more abstract, more reflective and more permanent than speech. The process of writing is a powerful means of knowledge building for the writer: as the writer attempts to make meaning clear to the reader, he or she also makes the meaning clearer inwardly. The creation of a written representation of one's thought adds a greater degree of metacognitive thinking to the process of communication. These cognitive benefits of writing are brought to the online communication process, but are modified by the conversational nature of CMC. In a computer-mediated environment, the presence of a listening audience is more distant than in face-to-face communication but less so than traditional in written communication, such as letters, and much less so than for cognitive artifacts such as articles or books.

On the other hand, the greater degree of presence of communication partners and the higher potential for interactivity in CMC allows for greater collaborative mental activity between writers and readers. The text that one composes and posts to an online audience immediately becomes a semiotic tool to which others respond

as they try to grasp the meaning of the message, compare it to their own understanding, and begin their own process of representing their responsive thoughts in new messages to the group. Because the messages are retained within the online space, participants have the added benefit of revisiting them, allowing them a greater degree of reflection than would be true in face-to-face communication.

Computer-mediated communication is a unique combination of writing and conversation. The fact that a permanent record of the communication is available as a computer transcript has not been lost on researchers. Researchers have used content analysis to study transcripts from computer-mediated discussions, examining such aspects of group discussion as: conversation conventions, such as turn-taking and repair (Garcia & Jacobs, 1999; Voiskounsky, 1997; Winiecki, 2000); interactions that lead to group development (McDonald & Gibson, 1998); the pedagogical nature of interactions in an educational setting (Ahern & El-Hindi, 2000; Hillman, 1999); participation in the discussion as a function of computer skills (Ross, 1996) and gender (Barrett & Lally, 1999; Fahy, 2001); and professional socialization (Weedman, 1999).

Although many published works have described and assessed various aspects of CMC and learners' experiences, relatively few have assessed cognitive outcomes or processes in any depth. Those that have are listed in Table 2, along with information about the participants, the research design of the study, the instructional design of the learning activity, the cognitive outcomes or processes that



Table 2.

*Studies of cognitive outcomes or processes in educational settings using asynchronous computer-mediated communication.*

Study Description	Instructional Design	Cognitive Outcomes/Processes Analyses	Results
<p><b>Researchers:</b> Bonk et al (1999)</p> <p><b>Participants:</b> 65 preservice teachers enrolled in educational psychology course</p> <p><b>Research Design:</b> • Comparison study: synchronous discussion group (N = 32) and asynchronous discussion group (N = 33) • Content analysis using transcript</p>	<ul style="list-style-type: none"> <li>• Electronic discussion incorporated as component of face-to-face (F2F) course</li> <li>• Small groups of 6 to 8 students grouped by student major</li> <li>• Four case studies of teachers were posted over the semester; students were required to answer initial questions about cases and respond to two peer postings (cases were different for two conditions)</li> </ul>	<ul style="list-style-type: none"> <li>• Adapted Meloth and Deering's (1994) coding scheme for categories of cooperative learning:               <ul style="list-style-type: none"> <li>○ Content answers (e.g. opinions, recommendations)</li> <li>○ Questions</li> <li>○ Peer response</li> <li>○ Off-task comments</li> </ul> </li> <li>• Percentage of total dialogue for each category</li> <li>• Qualitative micro-analysis of 20 students for discussion of 2 cases</li> </ul>	<ul style="list-style-type: none"> <li>• Students in synchronous group contributed mostly content talk (e.g. case evaluations, opinions, recommendations); students in asynchronous group contributed more peer responses, including counter-assertions and arguments</li> <li>• More than half of both groups' comments were content-related</li> <li>• Very little questioning occurred (less than 4%)</li> <li>• Students in delayed group contributed fewer interactions, but the messages were more elaborate</li> <li>• Students in real-time discussion tended to solve problems individually; students in delayed group tended to solve problems collaboratively</li> <li>• One student considerably affected the interactions of one group</li> </ul>
<p><b>Researchers:</b> Hara et al (in press)</p> <p><b>Participants:</b> 20 students (19 graduate) in applied cognitive psychology course</p> <p><b>Research Design:</b> • Evaluative case study • Content analysis using transcript</p>	<ul style="list-style-type: none"> <li>• Asynchronous discussion</li> <li>• Component of F2F 15-week course</li> <li>• Discussion of readings for topic of the week</li> <li>• Graded</li> <li>• Student facilitators – introduced initial question</li> <li>• Relatively unstructured</li> <li>• Instructor involved in discussions</li> </ul>	<ul style="list-style-type: none"> <li>• Adapted Henri's (1991) coding scheme of the dimensions of online discussion:               <ul style="list-style-type: none"> <li>○ elementary clarification</li> <li>○ in-depth clarification</li> <li>○ inferencing</li> <li>○ judgment</li> <li>○ application of strategies</li> </ul> </li> <li>• Coded for surface level and in-depth level of cognitive processing</li> <li>• Analyzed 4 1-week samples (weeks 2, 4, 8 &amp; 10)</li> </ul>	<ul style="list-style-type: none"> <li>• Quality of cognitive skills influenced by facilitators' initiating questions</li> <li>• Inferencing skills appeared early in the discussion: judgment comments appeared more frequently at the end</li> <li>• 58% of total messages were coded as in-depth processing; 30% were surface level; 12% of messages contained both</li> <li>• Length of messages was frequently, but not always indicative of depth of processing</li> </ul>

Table 2. (continued)

Study Description	Instructional Design	Cognitive Outcomes/Processes Analysis	Results
<p><i>Researchers:</i> Harrington &amp; Hathaway (1994)</p> <p><i>Participants:</i> 26 elementary education students enrolled in introductory teacher education course; 9 non-traditional students</p> <p><i>Research Design:</i> •Evaluation case study •Content analysis of discussion transcripts</p>	<ul style="list-style-type: none"> <li>•Component of F2F course (required)</li> <li>•Discussion revolved around problem scenario involving a teacher and a policy issue; five scenarios were discussed</li> <li>•Participation in discussion was anonymous</li> <li>•Instructor did not participate; teaching assistant did</li> <li>•Two students for each topic were assigned to facilitate: write the scenario (in collaboration with the teaching assistant), "participate more often and try to move the discussion forward" (p. 545)</li> </ul>	<ul style="list-style-type: none"> <li>•Examined critical reflection by coding responses for taken-for-granted assumptions <ul style="list-style-type: none"> <li>○ Identified assumptions;</li> <li>○ Coded assumptions into three categories: sociocultural, epistemic, and psychological</li> <li>○ Identified changes in frequency of each type</li> </ul> </li> <li>•Analyzed all responses for one topic</li> <li>•Analyzed responses of two students for all topics to determine relationship between level of professional development and level of critical reflection; one student was identified as at a less complex level of professional development, the other at a more complex level; these two cases were compared in a qualitative microanalysis.</li> </ul>	<ul style="list-style-type: none"> <li>•The computer conferencing environment elicited many taken-for-granted assumptions from participants</li> <li>•Sociocultural assumptions were dominant</li> <li>•Alternative perspectives were seldom expressed</li> <li>•No evidence of negotiation of meaning</li> <li>•Most students did not express concern about agreement between participants or the need to clarify or elaborate on their positions</li> <li>•The student identified as being less complex in her professional development began with a great degree of certainty in her opinions, which tended to be egocentric reflections; over the semester, her responses reflected a beginning awareness of complexity of issues and possibility of multiple perspectives</li> <li>•The more professionally mature student did not change in the nature of her reflections over time, but served as a role model of critical reflection</li> </ul>
<p><i>Researchers:</i> Newman, Johnson, Webb &amp; Cochrane (1997)</p> <p><i>Participants:</i> 49 undergraduates in Information Management program</p> <p><i>Research Design:</i> •Experimental – two conditions; all Ps in both conditions</p>	<ul style="list-style-type: none"> <li>•Component of F2F course</li> <li>•Computer-mediated communication (CMC): a series of seminar discussions of issues from lecture and readings</li> <li>•49 students divided into three seminar groups, each experiencing half of the seminars F2F and half online</li> <li>•Instructor facilitated all</li> </ul>	<ul style="list-style-type: none"> <li>•Examined critical thinking by adapting Henri's (1991) coding scheme for five critical reasoning skills and Garrison's (1992) theory of five sequential stages of problem-solving.</li> <li>•Paired opposites, one indicating surface processing and one indicating deep processing, were identified for each problem-solving stage: identification, description, exploration, applicability, and integration.</li> </ul>	<ul style="list-style-type: none"> <li>•Interactions in both seminar conditions reflected a high ratio of in-depth thinking (mean of approx. +.7 with +1.0 indicating all deep learning, -1.0 indicating all surface learning).</li> <li>•The overall depth of critical thinking was higher in computer conferencing condition (significant at 4% on matched-sample t-test).</li> <li>•F2F seminars fostered more critical thinking in the earlier stages of problem-solving (i.e., creative problem exploration and idea generation).</li> </ul>

Table 2. (continued)

Study Description	Instructional Design	Cognitive Outcomes/Processes Analysis	Results
<ul style="list-style-type: none"> <li>• <i>Newman et al. continued</i></li> <li>• Factor analysis of seminar transcripts; student questionnaire responses</li> </ul>	<ul style="list-style-type: none"> <li>• discussions in both conditions (no further description of facilitation available)</li> </ul>	<ul style="list-style-type: none"> <li>• Transcripts of F2F and CMC seminars were coded using the paired opposite scheme.</li> <li>• A post-experience questionnaire asked participants to respond to open-ended questions, one for each level of problem-solving; these responses were also coded.</li> </ul>	<ul style="list-style-type: none"> <li>• CMC seminars fostered more critical thinking in the later stages of linking ideas, interpretation and problem integration.</li> </ul>
<p><i>Researchers:</i> Gunawardena, Lowe &amp; Anderson (1997)</p> <p><i>Participants:</i> Practicing specialists and advanced students in distance education; subscribers to online pre-conference on distance education N = 554</p> <p><i>Research Design:</i></p> <ul style="list-style-type: none"> <li>• Case study;</li> <li>• Development of interaction analysis framework using grounded theory methodology</li> <li>• Transcript analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Conducted entirely via CMC (e-mail)</li> <li>• Debate format; individuals invited to participate in one of two groups: for or against a stated issue</li> <li>• One researcher was debate moderator</li> <li>• One participant for each side acted as leader; another for each side summarized days comments</li> <li>• The debate lasted 7 days, with formal debate format structuring each days comments</li> </ul>	<ul style="list-style-type: none"> <li>• Developed the Interaction Analysis Model of negotiation in CMC: <ul style="list-style-type: none"> <li>○ Phase I: Sharing/comparing of information</li> <li>○ Phase II: Discovery and exploration of dissonance or inconsistency</li> <li>○ Phase III: Negotiation of meaning/co-construction of knowledge</li> <li>○ Phase IV: Testing and modification of proposed synthesis or co-construction</li> <li>○ Phase V: Agreement statement/application of newly-constructed meaning</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• The analysis model was useful in examining socially constructed knowledge.</li> <li>• The instructional format (i.e. debate) greatly influenced the process of knowledge co-construction: most messages were coded as Phase II and III.</li> </ul>
<p><i>Researchers:</i> Kanuka &amp; Anderson (1998)</p> <p><i>Participants:</i> 16 managers of workplace learning centers; invited to participate as a professional dev. experience</p> <p><i>Research design:</i></p> <ul style="list-style-type: none"> <li>• Evaluative case study</li> <li>• Transcript analysis</li> <li>• Survey</li> </ul>	<ul style="list-style-type: none"> <li>• Unmoderated, unstructured</li> <li>• discussion forum</li> <li>• Totally CMC-based</li> <li>• Asynchronous</li> <li>• 3-weeks in duration</li> </ul>	<ul style="list-style-type: none"> <li>• Transcript analysis using interaction model of Gunawardena, Lowe &amp; Anderson (1997): five phases of co-construction of knowledge</li> <li>• Online survey of participants' perception of the forum as a learning environment (Likert scale).</li> </ul>	<ul style="list-style-type: none"> <li>• 93% of messages (N = 252) were coded at Phase I: Sharing/comparing of information</li> <li>• Most messages reflected acquisition of information compatible with existing knowledge.</li> <li>• Contradictory information tended to be ignored.</li> </ul>

Table 2 (continued)

Study Description	Instructional Design	Cognitive Outcomes/Processes Analysis	Results
<b>Researchers:</b> Naidu & Oliver (1996)  <b>Participants:</b> Nursing students in final year of undergraduate nursing program N = 80-100  <b>Research design:</b> • Evaluative case study • Content analysis • Survey	• Problem-based learning (PBL) format • Three problems were presented, each discussed for four weeks. • Class was divided into four smaller groups. • Primarily conducted via CMC, but not completely • Instructor provides structure of PBL format: <ul style="list-style-type: none"> <li>○ Introduces problem</li> <li>○ Describes three steps in learning process: problem analysis, exploration of problem, and re-evaluation of first perceptions</li> <li>○ Defines learning tasks/assessments (i.e. critical reflection records)</li> </ul>	• Qualitative assessment of critical reflection records: critical summaries written by each student at the end of each topic discussion <ul style="list-style-type: none"> <li>○ Identified evidence of expected learning outcomes:</li> <li>○ Understanding the problem</li> <li>○ Recognizing perceptions of others</li> <li>○ Searching data sources</li> <li>○ Validating solution options</li> <li>○ Coalescing of theory and practice</li> <li>○ Displaying attitudes conducive to collaborative learning</li> </ul> • Self-report survey of CMC as medium for learning: <ul style="list-style-type: none"> <li>○ Value of others' reflections</li> <li>○ Value of others' comments on own reflections</li> <li>○ Opportunity to interact with other students</li> <li>○ Opportunity to interact with instructor</li> <li>○ Occurrence of collaborative learning</li> </ul>	• Qualitative summary statements of examination of critical reflection records: <ul style="list-style-type: none"> <li>○ "Plenty of evidence" of insightful and meaningful analysis of problems.</li> <li>○ Students were generally aware of others' perceptions.</li> <li>○ "Generally, students did a great deal of research" of other data sources.</li> <li>○ Students "attempted to share their views" in order to validate one another's solution options.</li> <li>○ Students "readily exhibited coalescence of theory and practice."</li> <li>○ Students offered supportive and collaborative comments to one another.</li> </ul> • Surveys (N = 66) on learning environment <ul style="list-style-type: none"> <li>○ Majority indicated reading others' reflections was very valuable</li> <li>○ 42% indicated others' comments about their own reflections was somewhat valuable; 36% indicated it was very valuable</li> <li>○ Ample opportunity to interact with peers: 42% - somewhat;; 40% very much so</li> <li>○ Ample opportunity to interact with instructor: 50% - somewhat; 22% - very much so</li> <li>○ Collaborative learning occurred: 34%- somewhat; 47% very much so</li> </ul>

*were explored and the model or framework used to assess them, and the results of the study.*

### *Implications for Further Research*

As can be seen from Table 2, the studies varied in nearly every way possible, making comparisons difficult. However, a few cautious generalizations may suggest implications for further study. One trend in the literature is that the majority of CMC studies have focused on formal courses within higher education degree programs. Very few research studies have examined instructional activities delivered online to inservice practitioners as a professional development experience. In a higher education context, the researchers frequently refer to issues of student motivation, performance assessment (i.e. grading) and student expectations that may be very different for practitioners participating in a training or professional development activity. Notable exceptions are the studies conducted by Gunawardena, Lowe and Anderson (1997) and Kanuka and Anderson (1998) in which the researchers focused on CMC implementations with practicing professionals, albeit very different implementations, the former a debate format and the later an unstructured discussion format. Although these two studies have provided only the beginning of an understanding of collaborative knowledge building in an online professional development activity, the results, which varied considerably between the two instructional formats, do suggest that instructional design plays a critical role in the type of cognitive skills and processes that are engaged in by participants.

An implication for research is that further investigation of CMC in professional development contexts should have greater consistency between desired cognitive

outcomes, instructional design, and appropriate assessment and should make the relationships between these three elements of the study more explicit in the research design.

A second observation from these few studies involves the relationship between theory and analysis. The development of a meaningful, insightful method for analyzing social construction of knowledge that is firmly tied to appropriate learning theory is in its infancy. The early studies of learning processes in CMC (e.g., Henri, 1991) took a rather global, exploratory approach in developing a framework for analysis. Typically, they consisted of several categories of types of interactions found in online communication, categories such as content-related, questioning, responses to peers, and off-task. These frameworks represent beginning attempts to understanding the complex processes occurring as participants interacted online. More recent studies have taken a more focused look at knowledge building (Gunawardena et al, 1997; Kanuka & Anderson, 1998; Newman et al, 1997). And yet there appears to be a rather troubling lack of connection between analysis frameworks for assessing knowledge building and their theoretical rationales. Although all of the reviewed studies purported to be grounded in a Vygotskian sociocultural theory of learning, none seemed to draw clear, explicit connections between specific tenets of this learning theory and the elements included in the frameworks. Perhaps this lack is a shortcoming of sociocultural theory as it is commonly understood. Because Vygotsky's early death cut short his own development and explication of his theory of the process of social learning, the relatively recent adoption and development of sociocultural learning theory by many

contemporary educational theorists and practitioners has lead to a multitude of perspectives on the meaning of the social construction of knowledge. And while the dialogue within the field is exhilarating, it leaves researchers with an ill-defined foundation upon which to construct models for assessing socially constructed knowledge. It is not uncommon to read research articles and reports of instructional implementations that use a social constructivist term such as knowledge building, yet don't clearly define the term, explain the process to which it refers, or give a theory-based notion of its defining characteristics. Research that tests and uses analysis frameworks in assessing knowledge building, such as the work of Gunawardena and colleagues (1997), would benefit from grounding in more fully developed theoretical principles, such as those proposed by Wells (1999).

### Summary

A review of the literature pertinent to our study of knowledge building in a collaborative online learning environment began with the identification of a theoretical framework that offering promise in describing and explaining the process by which knowledge is socially constructed. We suggest that not only is it an appropriate theoretical framework with which to study socially constructed knowledge in an online environment, but that such an application would serve to test and possibly improve the model as a tool with which to understand learning. Our review of the literature of problem-based learning provided ample evidence that it can be an effective instructional strategy for improving the knowledge base and skill level within a profession, particularly for knowledge and skills necessary to address

complex problems that occur in professional practice. Our study of this novel application of problem-based learning will add to the body of literature on PBL and will provide insight into its further usefulness as an instructional approach to use with family child care providers. Finally, our review of the published research that has examined learning as it occurs in educational settings using computer-mediated communication suggests that much more remains to be discovered about knowledge building as it appears in CMC: how it can best be identified, how the process can vary, and for whom it shows the most promise. On a practical level, online continuing education would appear to be an ideal choice for family child care providers. Yet the most important questions remain unanswered: Is online education conducive to learning for this audience and in what ways can it be maximized?



## CHAPTER 3: METHODOLOGY

### Participants

#### *Description*

The following information was gathered from participants who completed an online questionnaire before the training began. The questionnaire is described in more detail in later sections. The seventeen participants in the Forum were women who ranged in age from 22 years to 52 years, with an average age of 39 ( $M = 39.29$ ,  $SD = 8.02$ ). Information regarding ethnicity was not requested. Although participants were not asked about the population of the town or area in which they lived, they were asked to provide their home address. My familiarity with communities in Iowa informed my understanding of the approximate population levels of the locales in which the participants lived. The population density of the communities in which the participants lived varied widely.

All of the participants were parents, nine of whom had children currently in their child care program. The percentage of family income that was derived from the family child care business, as reported by participants, ranged from 5% to 75%, with a mean of 35% ( $M = 35.35$ ,  $SD = 18.02$ ). The majority of participants did not have formal education beyond high school. Of the seven who did have post-high school education, in only three instances was it related to early care and education: one had earned a Child Development Associate (CDA) credential, a competency-based credential for child care providers; one had a two-year degree in early childhood education; and one had a four-year degree in child development. Participants varied widely in the number of years that they had maintained a family child care business,

ranging from one year to 28, with a mean of 10.79 years ( $M = 10.79$ ,  $SD = 8.38$ ). Six of the providers had worked in other child care related settings, eleven had not.

### *Recruitment and Enrollment*

The target audience for this study was family child care providers in Iowa. I chose to limit the study sample to within-state residents for several reasons: it would eliminate the possible influence of variations in state regulations for provider training and education; the association of the study with a prominent state university known to state residents would help to establish credibility and trust; and recruitment could be accomplished through known channels within the state. I recruited participants in several ways: by advertising in two newsletters, the Iowa Family Child Care Association's quarterly newsletter and the quarterly newsletter of the Child Care Resource and Referral system in central Iowa; by notifying Family Life Extension field staff who then notified providers in their geographic areas; and by word of mouth. The information provided about the Forum gave a brief description of the training, indicating: it would only be accessible by Internet; it would cover guidance and discipline of preschool-age children; it would be specifically for family child care providers who had been in business at least two years; and it would be held over a seven week period. I asked interested people to respond by e-mail and supplied the my e-mail address.

I sent a reply to those who indicated an interest in being a participant in the training. The short reply directed them to the FCC Forum website (see Appendix A-2). The website contained information about the learning aspects of the training as well as information about the research aspects of the training. It also included

assurance that the Forum had been approved by the Human Subjects Review Panel at Iowa State University and by the committee of faculty members advising my graduate program of study. Prospective participants were also informed that, upon completion of the study, participants would receive a certificate of training that would satisfy 21 hours of state training requirements for family child care providers and a set of curriculum materials from Iowa State University Extension. Along with general information about the study and the training aspects of the Forum, the website also included a section called *Frequently Asked Questions* where further information was provided in anticipation of questions that might be raised (see Appendix A-3).

The webpage included instructions directing those who were interested in participating to the online registration form to submit mailing and telephone contact information. When a participant's registration was received, I sent an e-mail to confirm that I had received the information and informing her that she would receive a mailing with a research consent form to be returned in the stamped envelope provided. Once I received the consent form, I sent another e-mail asking participants to complete an online pre-Forum questionnaire. The questionnaire solicited information about: the provider's child care program; the provider's views of herself as a child care professional; the provider's experience with and attitudes about computer usage; and demographic information (see Appendix C-1). Receipt of the pre-Forum questionnaire was considered the final step of registration for participation in the Forum. Upon receipt of the questionnaire, I sent an e-mail notice to participants thanking them for completing the questionnaire and asking them to

consider submitting a case of challenging behavior to be used for discussion in the Forum.

One and a half weeks before the Forum was scheduled to begin, I mailed participants a packet of information including: a description of the FCC Forum website, including the web address; contact information in case they needed to reach me by phone; the schedule for the Forum; instructions for posting messages to the Forum discussion and for sending messages privately to me; instructions for downloading the software needed for accessing the readings that were posted in Portable Document Format (PDF); and a list of discussion guidelines unique to computer-mediated discussions, also known as *netiquette* (see Appendix A-5).

Seventeen family child care providers responded who met the criteria for participation, followed through on all of the prerequisite steps toward participation, and were, therefore, included in the study. The research literature did not provide clear guidance in determining the optimal group size for the proposed activity and group being studied. Therefore, based on my own experience with online discussions, with the goal of maintaining a high degree of participation and a strong sense of identity, I chose to split the Forum into two separate groups, Group 1 and Group 2. Participants were alternately assigned to the two groups as I received their registration. I informed the participants that another group existed, but the discussions were kept separate. However, both groups discussed the same cases, were provided with the same facilitator support, read the same readings and resources, and were provided with the same information from the owner of the problem case.

## Procedure

### *Family Child Care Forum Design*

The learning activity that I designed as the context in which I would study knowledge building was called the Family Child Care Forum, or FCC Forum. In describing the Forum design, four areas will be addressed: the general topic for discussion; the structural context of the learning environment; the progression of the activity; and facilitation.

### *Content*

Assessments of child care providers' needs for further training consistently indicate guidance and discipline strategies as one of the most frequently requested areas in which providers desire further knowledge and skill (Dombro & Modigliani, 1995). Therefore, the problem-solving process of the Forum revolved around three scenarios, presented in succession, depicting actual instances of children's misbehavior in a family child care home. Because a key element of problem-based learning from a constructivist perspective is the relevance of learning activities to the real-world challenges of the participants, the scenarios were actual problems submitted by participants. Participants were given guidelines for submitting cases, including examples, and were given the criteria that would be used in selecting the cases for discussion. The three selection criteria were: 1) the three cases would represent a variety of different types of challenging behavior; 2) the cases would be situations that a provider is likely to encounter over the course of many years in child care; and 3) the cases would be complex enough to generate multiple possibilities for causes and solutions. Ten situations were submitted by participants; I selected

three as being appropriate for discussion. Once I selected the three problems that I felt best met the criteria, I edited the problem description that the participant had sent to me in order to correct any problems that would affect readability while retaining as much of the problem owners' own words as possible. I then contacted each problem owner, sending them my revision and asking for her feedback on accuracy. The agreed upon revisions were the cases that were posted for discussion by the groups.

A second component of the content was resources that were posted or linked to the Forum website. For each of the three scenarios, a set of related resources were made available and included published articles on child development and best practices, expert opinions, assessment tools, and problem-solving tools. These materials are what Wells calls "resources of the culture" (p. 138) and are representational artifacts of: the values and attitudes espoused by the community of practice; the nature of activities involved in the practice; and the procedural and substantive knowledge associated with practicing effectively. The purpose of including these artifacts in the learning activity was to encourage participants to evaluate, within the context of the activity, when, where and how to use cultural tools and artifacts to create new meaning for themselves. I made these supporting resources available to participants on the website once they had initially responded to the problem illustrated by the scenario and had had an opportunity to propose various hypotheses and arguments. According to Wells, "...it is when [participants] have begun to formulate their own theories, to test them in various ways, and to submit them to critical evaluation by their peers, that they can most fully appreciate

the contributions to the problems with which they are engaged that have been made by more experienced workers in the field" (p. 91).

### *Structural Context*

The Forum's structural context consisted of two parts, the Forum website and the Forum discussion. The website contained several areas:

1. the home page, with links to each of the other areas (see Appendix B-1);
2. the scenario area, where the current case was described (see Appendix B-2);
3. the readings and resources area, where the resources from others in the early childhood professional community were posted (see Appendix B-3a);
4. the "What's New?" area, where the most recent discussion tasks were posted (see Appendix B-4); and
5. the help area, where participants could find information about contacting the researchers (see Appendix B-5).

The second major structural component of the Forum was the discussion context. Data from an annual survey of family child care providers in central Iowa indicated that 48% of family child care providers who responded to the survey ( $N = 594$ ) had Internet access from home computers (Child Care Resource and Referral of Central Iowa, 2000). This information led me to believe that training via the Internet was a viable option for a significant segment of the family child care provider population in Iowa. However, because one of the purposes of this study was to

provide a model for computer-based training, I chose to create the Forum to be as easily accessible, technologically simple for the end-user, and relatively simple to design and manage as possible.

Participants in a pilot of the Forum indicated that e-mail as a communication method was preferred over a web-based discussion board. For this reason, I chose to use an e-mail list, using a simple e-mail listserver, as the communication tool. A very simple website was the other technological tool used for the Forum. Care was taken to use only basic web-based functions and minimal graphics to accommodate home computers that would very likely have low-end capabilities.

#### *Progression of the Learning Activity*

The model of problem-based learning provided in the medical education literature (e.g., Hmelo et al., 1997) was used as a template for the progression of the Forum. This model suggests that collaborative problem-solving follows a process. Learners first define the problem, identifying what they do know as well as what they need to know before they can suggest solutions. Then hypotheses are suggested and evaluated in light of the knowledge brought by individuals to the discussion and through outside resources. Finally, a best explanation and solution are proposed.

The Family Child Care Forum was designed to give participants time to work through each of these phases. The seven-week Forum began with an orientation activity and then proceeded through three 2-week cycles of problem-solving. The Forum then concluded with a few days of wrap-up time. The entire progression of the Forum was included in the materials that were mailed to participants. In addition,



the current phase of the Forum was always posted on the website on a “What’s New” page.

*Orientation activity.* The first three days of the Forum, participants were asked to visit the discussion area and orient themselves to the website. I asked them to post a brief description of themselves and their program (see Appendix A-6). This served to help me to identify and correct any technical difficulties as well as to initiate the process of building a sense of group identity and community among the participants.

*Problem-based activity.* On the first day of each problem-solving cycle, I sent an e-mail to all participants directing them to the area of the website where they could find the problem scenario on which the discussion would be focused (see Appendix A-7 for all of the facilitator messages during the first case discussion). The scenario remained posted throughout the problem-solving cycle for that case. I instructed participants to compose an initial message giving their perception and understanding of the problem. This served as a prompt to facilitate the first stages of problem solving, defining the problem and identifying what is and is not known. I instructed participants to first post their responses in a private e-mail to me. Once they had posted their private message to me, they were then encouraged to become involved in the discussion with the other members of their group.

New knowledge was introduced to the group in three ways: through the additional arguments and elaborations that participants contributed; through additional information on the situation given by the child care provider who submitted the scenario, primarily in answer to questions raised in early postings; and through

articles and resources posted midway through the discussion. The additional information that was provided by the problem owner was posted to both the discussion group to which she belonged and to the other discussion group. The articles and resources were selected after I had chosen the cases to be discussed but before the discussion had begun. These resources represented "knowledge artifacts" (Wells, 1999, p. 90) contributed by veteran members of the larger early childhood community of practice, although not limited to family child care providers. These resources were posted on the website (see Appendix B-3a and b). I notified participants by e-mail when they were available on the website and asked participants to read them and comment on their usefulness in solving the problem. I also encouraged participants to suggest or submit additional resources. This activity facilitated movement through the middle phases of problem-solving, making use of appropriate sources of further knowledge and evaluating that knowledge for its usefulness.

With three or four days left in the two-week cycle, I prompted participants to begin wrapping up the discussion. This prompt was intended to encourage participants to bring the activity to the final phase of problem-solving, integrating the information into a defensible problem solution. Finally, I instructed each participant to send another private e-mail to the researcher giving a summary of her understanding of the problem and best solution. Participants were given two days to respond before the next scenario was introduced and the cycle of problem-solving began again. This process was repeated for each of the three cases.

*Wrap-up.* After the final scenario had been summarized, participants were encouraged to make any comments they wished as the Forum came to a close (see Appendix A-8 for final messages). Participants had also requested updates on each of the cases from the problem owners. These updates were posted to both groups. As a final activity, participants were asked to fill out an online evaluation of their learning and experiences with the Forum. This questionnaire was posted to the website (see Appendix C-2 for complete questionnaire).

*Post-Forum communication.* I sent a final e-mail to each participant thanking her for participating and letting her know that she would soon be receiving a certificate of training and a Continuing Education Unit (CEU) form in the mail. Two weeks later, I contacted participants by e-mail to arrange a convenient time for a phone interview. During the phone interview, I also reminded them that I would be mailing them a thank you gift of curriculum materials that I had developed and published through Iowa State University Extension.

### *Facilitation*

Because research to date has not provided clear findings that would suggest an optimal level or type of facilitation for this type of online learning activity, I reasoned that, for my study, I would provide a consistent level and type of facilitation throughout the Forum for both groups. The data resulting from the discussions facilitated in this way could then be compared to future data resulting from discussions facilitated differently. The following paragraphs, then, describe the type and level of facilitation that was used throughout the Forum discussions.

I served as facilitator throughout the Forum. My primary role as facilitator was to scaffold the learning of participants in two areas of skill or understanding: 1) collaboratively solving a problem; and 2) accomplishing this task within an online environment. Scaffolding is primarily understood to be support offered to a learner by a more knowledgeable person so that the learner can accomplish a task that he or she would not be able to accomplish alone. Scaffolding often occurs through verbal interaction but can also take the form of preparation of the environment or learning activity for the purpose of simplifying or focusing the learner's task.

I chose to provide scaffolding for the participants through a variety of means, including both environmental preparation and verbal interaction. These means, however, did not include becoming actively involved in the actual online discussions. I did not intend to provide prompts, cues, questions, summary statements, or any other common instructor strategies often used to guide group discussions. This purposeful absence from the discussion was a research decision rather than an instructional decision and was intended to provide a clear empirical picture of the knowledge building process as occurred among the participants so that, as a researcher, I might better understand that process.

My absence from the actual problem discussions, however, does not reflect an overall absence of facilitation. The scaffolding that I provided in other ways was intentional and very evident throughout the learning activity. Contextual scaffolding was evident in the simple design of the website and the activity, the intention of which was to keep attention focused on the collaborative problem-solving process. Scaffolding as verbal interaction was designed to begin well before the Forum

commenced and continued throughout. Examples of verbal scaffolding can be found throughout the various communiqués from me to the participants (see Appendices A-2 through A-8). Active scaffolding is also evident in the presentation of the readings and resources for each case (see Appendix B-3a) in which participants were asked to reflect on and evaluate the resources and share their thoughts with the group. Each of these instances of verbal scaffolding was intended to make explicit to participants the purpose of the learning activity, their role in the activity, the specific objectives of each phase of the problem-solving process, and the focus of the discussions.

### Data Collection

I gathered data to address three general purposes: to provide detailed descriptions of participants and their programs; to answer the research question regarding the process of group knowledge building; and to answer the research question regarding individual appropriation of group knowledge.

### *Description of Participants*

In order to gain a meaningful description of participants, they were asked to complete a questionnaire online before the Forum began (see Appendix C-1 for the complete questionnaire). The participants were asked questions covering five general topics: reasons for participating in the study; oneself as a child care professional; one's child care program; one's use of computers; and demographic information about oneself. The intent of gathering this information was not to test any hypotheses, but rather to describe the providers who were interested enough to participate in online training and to gather information that may be relevant to further

study of providers' participation in socially constructed learning in an online environment.

### *Group Building of Knowledge*

The bulk of the data that was gathered addressed the study's two research questions regarding learning. Since learning is fundamentally defined as cognitive change, I used data sources that would provide a window to transformations in thinking that occurred during and as a result of the Forum. To answer the research question regarding the progression of knowledge building within the group, the transcripts of the e-mail messages received by the whole group during the problem discussions were preserved as the primary data source (see Appendix D-1 for a sample from an uncoded discussion transcript). These transcripts were analyzed separately for each group and for each case.

### *Individual Appropriation of Knowledge*

To answer the question about individual appropriation of group knowledge, I used three data-gathering methods. At the beginning and end of each case discussion, I instructed participants to send a private e-mail me giving a summary of the problem cause(s) and solution(s). I then compared these pre- and post-discussion private reflections for changes in proposals of problem causation or problem solutions (see Appendix E-2 for a sample of a pre- and post-discussion summary for one case from one participant). This rather direct method of identifying changes in thinking as represented in written transcripts had not, to my knowledge, been used as a research method in studies of computer-mediated social learning.

Therefore, I chose to use two additional, more conventional data sources to examine individual changes in thinking as well.

An online questionnaire that participants completed at the end of the final discussion solicited information about participants' perceptions of their own learning as a result of the overall Forum experience (see Appendix C-2 for the complete questionnaire). Specifically, participants were asked to rate their level of change, on a four-point Likert scale, in specific attitudes and skills, including a change in understanding of the guidance and discipline of young children, as a result of having participated in the Forum. In order to gain more specific information about their learning, participants were also asked to rate the level of influence of several types of input (e.g., other participants' opinions, the readings).

A third source of data was a structured phone survey conducted 3-4 weeks after the Forum. I conducted the phone surveys, using predetermined interview questions in which participants were asked about changes in their attitude or behavior since the Forum ended that they attributed to having participated in the training (see Appendix C-3 for the complete interview script). Specifically, I asked each participant if, since participating in the Forum, she had changed anything about her approach to challenging behavior situations. I also asked participants to identify changes in their approach to relationships with other providers and their perception of the Internet as a professional resource that occurred as a result of participation in the Forum.

These three data sources looked at individual learning through three different lenses. The problem summaries that we coded and analyzed provided a

representation of specific cognitive changes on a micro level for each specific case. The questionnaire immediately following the Forum provided a self-report in a quantitative format of learning, in three specific knowledge areas, over the seven-week training. The phone survey contributed a wide-angle view of participants' perceptions of the long-term changes that they attributed to their Forum experience, as stated in their own words.

### Data Reduction, Coding and Analysis

Within qualitative research, it is recommended practice that the researchers lend validity to their analyses and interpretations by disclosing the experiences and knowledge that have undoubtedly influenced the process and results (Miles & Huberman, 1996). The knowledge that I have gained about early care and education has come primarily from being a practitioner in the field for many years, though as a center staff member, not a family child care provider. However, two other experiences have broadened my understanding of caregiving, particularly from the viewpoint of the family child care provider. The first has been my experience as a facilitator in face-to-face local small group training and conference workshops. The second relevant experience has been as the manager of an international e-mail list group consisting of 350-375 members, the most active of whom are family child care providers. I have served as the manager of this list for over three years.

A second person was heavily involved in the initial coding of group knowledge data and in modifying the coding framework, though she was not involved in other aspects of the study. She was a graduate student in curriculum and instruction who was familiar with social constructivist principles. She had experience in online



graduate courses, both as a student and as an instructor and designer. In the sections of this report in which I describe the analysis of group knowledge building, I have refer to “we,” meaning this colleague and myself, for the tasks in which she was involved.

The first step in working with the data was to replace participant's names with pseudonyms on all data sources. Original data documents with participants' actual names were retained for the purpose of accuracy when checking data management, analysis, and display for error. The next steps in data reduction and analysis that I took are described in the following paragraphs for each of the three main groups of data: group description data, group knowledge building data, and individual knowledge appropriation data.

### *Group Description*

The pre-forum questionnaires included both quantitative and qualitative data. I combined responses to quantitative questions to give an overall description of the group for each item. Answers to open-ended questions were compared and common concepts were identified.

### *Group Knowledge Building.*

The transcripts for group discussions were separated by Forum group and by case, resulting in six sets of discourse data. In preparation for coding, I placed each set of messages in a word processing document in the sequence in which they were posted to the group and numbered them accordingly. Each participant's messages were identified by a distinct font color. Each sentence was printed on a separate line and numbered (see Appendix D-1).

The analysis framework that was initially used to code the process of knowledge building within each discussion was an adaptation of the Interaction Analysis Model developed by Gunawardena, Lowe and Anderson (1997). I found it to be the analysis model most consistent with Wells' theoretical model, particularly Wells' two stages reflecting shared knowing: information sharing and knowledge building. Gunawardena and colleagues elaborated on the knowledge building stage, breaking it down further into four phases. The Interaction Analysis Model consisted of: Phase I – sharing/comparing of information; Phase II – the discovery and exploration of dissonance or inconsistency among ideas, concepts or statements; Phase III – negotiation of meaning/co-construction of knowledge; Phase IV – testing and modification of proposed synthesis or co-construction; and Phase V – agreement statement(s)/applications of newly-constructed meaning. Each phase was broken down further into several “operations” (p. 414). These operations were intended by Gunawardena et al. to be coded also.

To determine the appropriateness of this analysis model for the type of data that I intended to study, I used the Interaction Analysis Model to code previously existing discussion data from a child care related listserv. My initial application and evaluation of the usefulness of this model resulted in a few modifications. Table 3 delineates the modified analysis model that was used to initially code the Forum discussion data.

I concluded that the Interaction Analysis Model placed too great an emphasis on the identification and negotiation of dissonance and not enough emphasis on other aspects of the process of building knowledge as a group. I chose to separate

Table 3

*The Modified Interaction Analysis Model*

Phase	Types of Indicators
Phase 1: Experience/Information Sharing	<ul style="list-style-type: none"> <li>• reference to direct experience</li> <li>• statements of belief, opinion, personal theory</li> <li>• reference to expert source</li> <li>• advice</li> <li>• suggestion for gathering further information</li> </ul>
Phase 2: Knowledge building: Comparisons	<ul style="list-style-type: none"> <li>• statement of agreement or disagreement</li> <li>• identification of discrepancy</li> </ul>
Phase 3: Knowledge building: Building a case	<ul style="list-style-type: none"> <li>• additional personal experience</li> <li>• additional statement of belief, opinion, personal theory</li> <li>• additional appeal to expert</li> <li>• additional advice</li> <li>• hypothetical example</li> </ul>
Phase 4: Knowledge building: Negotiating	<ul style="list-style-type: none"> <li>• questioning or responding to clarify or expand a previous statement</li> <li>• statements indicating integration of ideas, compromise, or accommodation</li> <li>• summarizing statements</li> </ul>
Phase 5: Understanding	<ul style="list-style-type: none"> <li>• Statement indicating adoption of idea or practice</li> <li>• metacognitive statements about change in thinking</li> </ul>

the original Phase I into two phases, experience/information sharing and comparisons. A third phase was added that represented strategies that discussants use to build an argument for one problem cause or solution. I combined the original Phase III and IV into one phase that I labeled *negotiating*. I reasoned that testing and modification of new arguments is part of the negotiation process. I modified the

original final phase very slightly to better fit Wells' final step in his Spiral of Knowing Model (1999) that he called *understanding*. This phase represented individual appropriation of knowledge that is built with other group members. In the modified model, the first and final phases reflected the individual's understanding of the problem or situation before and after, respectively, the knowledge building that occurs during the three middle phases.

The issue of a meaningful unit of analysis in discourse analysis has been addressed by various researchers (e.g. Gunawardena, et al, 1997, Henri, 1992). For this study, I chose to view each discussion in its entirety as the unit of analysis. I read the discussion line by line, assigning a new code when I perceived a change in the intent or quality of the message with regard to the construct being analyzed.

As my colleague and I attempted to apply the modified Interaction Analysis Model to the first discussion transcript, our difficulty in assigning codes and the number of disagreements between coding judgments made clear to us that the framework needed further revision in order to provide a clear description of the progression of the Forum discussions. We deduced that the model did not adequately represent the most salient aspects of the process of collaborative problem-solving using Wells' end goal of knowledge building, an artifact (in this case, a problem solution) with increasing "systematicity, coherence and consistency" (p. 84). Therefore, we focused our efforts on developing an analysis model that more clearly reflected the process of a group working collectively toward progressive improvement of a problem solution. The subsequent model development is reported in the results section of this paper.

Once the new model was developed, the transcript data were coded. The unit of analysis was determined to be each proposal of cause or solution. These proposals of cause and solution were first identified within the transcripts, then labeled with unique labels for each unique type of cause or solution (see the results section for more detail). In order to further aid coding, I reduced the transcript data from each discussion into a matrix representing the occurrence of each proposal of cause and solution, labeled by type, within each successive message of the discussion as a function of author (i.e., column headings were participants' names; row headings were message numbers in succession; see Appendix D-2). The first row of cells contained the labeled cause and solution proposals mentioned in each participant's private message prior to the commencement of the group discussion.

The purpose of this matrix was to allow coders to more easily identify the author and temporal position of each proposal as they coded the full transcripts, which were many pages long. In other words, when coding a particular proposal within a transcript, a coder could quickly determine, using the table, whether that same proposal type had been mentioned earlier and by whom. This data display allowed for quickly locating in the transcript any earlier messages to which the author may have referred. It also helped in determining whether the author was reiterating, expanding on or modifying her own earlier discussion of the same proposal.

Interrater reliability was calculated for the analysis model using my coding decisions and those of a graduate student in early childhood education with experience in child care who was not involved in any other way with the research

study. I trained this person in the coding model using one of the six discussion transcripts. Reliability was established between us using a second of the six discussion transcripts that represented 11% of the total units of analysis. I then completed coding for the remaining discussions.

Once the data were coded, they were further reduced to matrices that displayed, for each discussion, all of the units of analysis. The units were labeled by the number of the transcript message in which each was found. Each matrix sorted the coded units by participant and by cause and solution type. Finally, they were color-coded according to the results of the coding analysis (see Appendix D-3).

#### *Individual Knowledge Appropriation*

As mentioned earlier, I used three data sources to examine the individual appropriation of knowledge, or change in thinking, that occurred as a result of having participated in the Forum. I reduced and examined together the information from each data source to give a multi-faceted view of each participant's change in thinking that could be attributed to discussion-based problem-solving.

The pre- and post-discussion private e-mail messages for each case and for each participant were paired and compared side-by-side, one pair at a time (see Appendix E-1 for a sample pre- and post-discussion summary from a participant). As with the group discussions, the salient components of the problem-solving activity were statements regarding causality and statements regarding solutions. I identified each statement or phrase that reflected a distinct cause or solution. I then listed a word or short phrase characterizing each identified cause or solution below each message (e.g. "It seems to me that Kim is wanting some attention," was identified as

*attention-getting*; “When she is harmful or tormenting someone I would think she should be removed from the group,” was identified as *isolation*). The participants’ own words were used whenever possible. I then compared the individual causes for each pre-post pair of messages. I identified differences based on type of cause (e.g. *attention-getting* versus *physical problem*) and on the number of causes identified. These differences were judged to range from *slight or no change* (i.e. maintained virtually the same type and number of causes) to *moderate change* (i.e. maintained the original proposal or proposals, but added or deleted one or two, expressed more certainty, or modified the original) to *considerable change* (i.e. marked change in type of cause, an addition or deletion of more than two proposals from the original, or change from no suggestions at all to at least one proposal and vice versa).

I then used the same procedure to analyze the solutions that participants offered. Again, the degree of change observed ranged from *slight or no change* (i.e. maintained virtually the same type and number of causes) to *moderate change* (i.e. retained the original solution(s) but added one or two additional ideas or narrowed the list somewhat) to *considerable change* (i.e., marked change in type of solution, such as a change from recommending praise and encouragement to recommending outside professional consultation; see Appendix E-2 for the coding protocol). I then carried out this process for each participant in all three cases (see Appendix E-3 for a summary of coding for one case).

I then further reduced the data by creating a summary page for each participant (see Appendix E-4 for a sample summary page for one participant). The first entry on each participant’s summary page was a table in which the pre-post

discussion analyses for change in causal attributions and solution recommendations were listed for all three cases, resulting in six units of analysis for each participant, three causes and three solutions. In situations where a participant did not submit summary information in a private e-mail to me, the available summaries were coded. In order to aggregate the results from each of the three cases, I assigned numerical values to each of the categories of degree of change: 1 (*slight or no change*); 2 (*moderate change*); and 3 (*considerable change*). These numerical values were then averaged to arrive at an overall degree of change for all of the cases for which participants submitted summaries. It was noted in the table displaying this data the number of cases for which each participant had submitted summary information.

The second entry on the summary page was the participant's response to the post-Forum questionnaire item asking the participant to rate the degree to which their skill in understanding the guidance and discipline of young children had changed over the course of the Forum. This item was rated on a scale from 1 (*no change*) to 4 (*changed a lot*). The third entry on the summary page was the participant's response to the open-ended phone survey question asking about any change in approach to handling challenging behavior since having participated in the Forum. Statements or phrases that seemed to characterize the overall response were highlighted in red. These responses were judged to range in degree from *slight or no change* (i.e., statements that reflected very little, if any, change in behavior, such as, "Most stuff that was discussed, I do, so nothing really changed;" this category also included statements that reflected reassurance or social support but no change, such as "it assured me that I was doing the right thing") to *moderate*



*change* (i.e., statements that reflected engagement in mental processes but not necessarily a change in behavior or statements that reflected an ambivalence or uncertainty; for example, “It got my mind going in different ways....I really enjoyed the resources, too” or “I’m probably more aware of different agencies or places that you can go for help”) to *considerable change* (i.e., statements that indicate a change in thinking that has or is expected to lead to changed behavior; for example, “...it had a lot of good ideas that I’ll definitely be trying.”).

The final step in data reduction was the creation of a table in which each of the qualitative judgments for the three types of individual knowledge data was listed for each participant (see Table 9 in the Results section of this paper). I then looked across data sources for consistency for each participant (i.e., case). Because of the novel and, therefore, exploratory nature of this research inquiry, I sought to identify for future study possible variables that might influence the degree to which child care providers engaged in online, discussion-based solving of behavior problems changed in their thinking about the causes and solutions. With that goal in mind, I identified two participants for more in-depth case analysis: one for whom all data sources indicated a relatively small degree of cognitive change and one for whom all data sources indicated a relatively large degree of change. Selection was limited to those participants who had submitted pre-and post-discussion summaries for all three cases. The case descriptions of these two participants included information gleaned from the pre-forum questionnaire, such as information about themselves, their child care programs, and their professional involvement. Other information that

was considered relevant to the impact of the discussion on their learning related to their participation in the discussions (e.g., number of posts, length of posts).

## RESULTS

### Group Description

The research questions for this study did not include a focus on patterns and relationships among the variables describing participants and the participants' experiences in the Forum because there was no research base from which to draw them. I did, however, collect, summarize, and report observations about the descriptive information about participants for use as a springboard for future study of family child care providers, their professional development, and online learning. To that end, possible patterns or relationships between the variables in the questionnaire that emerged upon examination of the data are reported as exploratory observations.

Seventeen family child care providers participated in this study, all but one of whom lived within Iowa. Demographic information about the participants that was collected from the questionnaire was reported in the methodology section. The remaining information collected from the questionnaire is described in the following paragraphs (see Appendix C-1 for complete questionnaire).

### *Reasons for Participation*

In an open-ended question, participants were asked to briefly state reasons for their interest in participating in the FCC Forum. The themes most often found in participants' comments were: desire to exchange caregiving ideas with other professionals ( $n = 8$ ); desire to learn or improve their own practice ( $n = 8$ ); desire to socialize with others ( $n = 5$ ); the convenience of the training ( $n = 4$ ); desire to share

their own expertise with others ( $n = 2$ ); to meet training requirements ( $n = 2$ ); and curiosity about training via the Internet ( $n = 2$ ).

### *Providers' Professionalism*

Several questions in the questionnaire were designed to reflect participants' view of family child care as a profession. These questions covered three aspects of professionalism: the provider's view of her own work with children; the provider's connection to the larger child care community; and the provider's pursuit of educational opportunities related to child care. With regard to providers' self-perceptions, participants were asked to place in rank order five reasons for becoming a family child care provider. The reason most commonly ranked as the number one reason for originally becoming a family child care provider was to stay home with one's own children (mean ranking = 1.33). The other four reasons, in order of mean ranking, were: "I wanted to work with children," ( $M = 2.27$ ); "I wanted to help families," ( $M = 3.33$ ); "I wanted to own my own business," ( $M = 3.34$ ); and "It was the best job available that I was qualified for," ( $M = 4.67$ ). When asked to choose the best description of their work as a child care provider, eleven of the seventeen participants (65%) characterized family child care as their chosen profession. Another four participants characterized family child care as a good choice while their own children are young. The final two chose "a step toward other work with children" as the best description of their work in family child care. No one chose "temporary employment" as the best description.

Providers were also given an opportunity to make additional comments about their reasons for becoming a family child care provider. Of the twelve who

responded, six offered further clarification of their personal child care needs that were met by opening their own child care business (e.g. high quality care was unavailable in the area). Two other topics were mentioned by more than one person: the perceived benefits of family child care as opposed to center care and the benefits of owning one's own business.

The extent to which a provider associates with other providers, both informally and through professional organizations, is another lens through which one can view the provider's commitment to professionalism in her work. To examine providers' informal association with other providers, I asked them to indicate the frequency with which they communicated with others using three different modes of communication: in person, by phone, and by e-mail. The degree to which participants connected informally with other providers varied widely. Two of the participants indicated that they rarely or never used any of these means to communicate with other providers. At the other end of the spectrum, four of the participants indicated that they communicate with other providers on a daily basis using at least two of the methods mentioned. The most frequently used means of communicating was the telephone: 12 out of 17 participants said that they used the phone to talk with other providers at least once a week. E-mail was the least common mode of communication, with nine participants indicating that they rarely or never used it to talk with other providers.

Participants were also asked about their involvement in professional organizations as an expression of their professionalism. Seven participants indicated that they never or rarely attend an organized meeting of providers (excluding trainings). Three providers reported that they attend such a meeting once or twice a

year. The final seven indicated attendance at monthly providers' meetings. No one reported involvement on a weekly basis. Because participants did not have an opportunity to indicate whether such providers' meetings were available within a reasonable distance of their homes, one cannot assume that lack of attendance indicated a lack of desire to be involved. Many of the providers lived in small communities where lack of opportunities for associating with other providers in a more formal way could certainly be the cause of the negative response on the questionnaire.

Many locales, particularly the more urban areas of Iowa, have local provider associations that include membership and offices of leadership. When asked whether they were members of a local provider association, eight indicated that they were. Three of these reported that they had held office in their local association. State and national professional membership associations are also available to child care providers, the two most commonly recognized being the National Association for the Education of Young Children (NAEYC) and its Iowa affiliate and the National Association for Family Child Care (NAFCC) and its Iowa affiliate. Slightly fewer participants (7 out of 17) were involved in a state or national organization; none of these providers had held office on a state or national level. In looking at participants' overall involvement in provider associations, including the length of time they had been members, two participants stood out as having a long history of commitment to professionalism as reflected in such participation. The first participant had been a family child care provider for 22 years, a member of her local association for 19, a member of a state or national association for 15, and at the time of the Forum, she

was holding office in her local association. The second had been a member of her local provider association for the entire 12 years that she had been a family child care provider and, at the time of the Forum, she was the association's president. She had been a member of a state or national association for the past six years. Interestingly, the two participants who had been providers for the greatest number of years (25 and 28 years) both had been members of a state or national association for many years but reported that they had only been members of a local association for a short amount of time (one and three years, respectively). This brevity again may reflect the availability of local professional child care groups in more rural areas. For these two women, a local professional group may only have become available in recent years, but their long-term membership in state or national child care associations indicated a much longer-held sense of affiliation with the larger professional community.

The final indicator of professionalism was pursuit of child-care related educational opportunities. When asked about their reasons for attending non-credit training in child care, all participants rated "to become more professional" as either quite important or very important (on a four-point Likert scale,  $M = 3.71$ ,  $SD = .47$ ). "To meet state regulations" was the reason that received the lowest overall rating, though it was also the reason that had the greatest variance among responses ( $M = 3.12$ ,  $SD = 1.11$ ). The regulation of family child care programs enrolling six or fewer children is voluntary in Iowa. Participants were asked in an open-ended question in what ways they believed that child care training could be improved to better meet their needs. Four of the participants indicated that they were satisfied with the

training that they had received. Of the suggestions for improvement offered by the remaining participants, those characteristics most often requested were: more convenient ( $n = 6$ ); greater variety in content ( $n = 4$ ); more relevant to FCC ( $n = 3$ ); at a more advanced level ( $n = 2$ ); more accessible ( $n = 2$ ); and more accommodating of individual needs ( $n = 2$ ).

Participants also were asked about more formal education goals. Specifically, the questionnaire listed four educational goals: a Child Development Associate's (CDA) credential, a competency-based, nationally recognized credential; a two-year degree in early childhood education (ECE) or child development (CD); a four-year degree in ECE or CD; and a specialized certificate such as infant/toddler or Montessori certification. Participants were asked to indicate whether they already had it, didn't want it, wanted it someday, or were in the process of attaining it. As can be seen in Table 4, the majority of participants didn't have formal education in early care and education but were either in the process of obtaining a credential or degree or hoped to do so at some point. The only participant who responded *don't want* to all of the child care-related education options was the one participant that already had a four-year degree in early childhood education; all the other participants indicated an interest in attaining at least one of the goals listed.

Participants were also asked about accreditation of their program through the National Association for Family Child Care (NAFCC) since, according to NAFCC "professional accreditation was designed to promote and recognize high quality, professional family child care" (NAFCC, n.d.). One provider indicated that she had



Table 4

*Pursuit of Child Care Related Education (N = 17)*

	Don't want	Someday	In process	Have	No response
CDA credential	1	10	4	1	1
AA in ECE or CD	5	7	1	1	3
BA/BS in ECE or CD	6	6	1	1	3
Specialized certificate	9	3	0	1	4

NAFCC accreditation. Personal correspondence revealed that she had received notification of her accreditation just weeks before the Forum began. Of the other 13 participants who responded to this question, two said they were currently in the accreditation process and nine more said that they hoped to become accredited someday; only two were not interested in accreditation for their programs.

When the participants were given the opportunity to add further comments about themselves as professionals, eight of them chose to make additional statements. These statements covered a wide range of topics, but the two topics that were mentioned by more than one participant were the desire for parental and public recognition (mentioned by three providers) and the personal rewards that they gained by operating their own family child care business (mentioned by two providers).

*Family Child Care Program Descriptions*

Participants were asked to answer several questions about characteristics of their programs. The number of children enrolled in participants' programs ranged

from two to twelve with an average of almost seven children per program ( $M = 6.70$ ,  $SD = 3.18$ ). Participants were asked the ages of the children they cared for. This information was collapsed into four age categories. Table 5 reflects that, as a group, these providers tended to care for more children between the ages of two and six than children in other age groups. Participants were asked how many of the children in their program had an "identified special need." No further elaboration was requested about the specific nature of the special need. Eleven of the 17 participants indicated that none of the children in their care had special needs; one reported serving one child with special needs; three reported serving two children with special needs; and two reported serving three children with special needs. The three providers who had the most children enrolled overall each reported that at least two of those children had special needs. When given the opportunity to provide additional comments about their programs, one of the women who reported caring for three children with special needs indicated that they were all infants; this provider had a total of six children in her care.

Table 5

*Average Number of Children of Different Age Ranges in Programs (N = 17)*

Age	M	Range	SD
Birth – 1yr/11mo	1.35	0-4	1.22
2/0 – 3/11	2.47	0-5	1.46
4/0 – 5/11	1.65	0-5	1.37
6/0 and older	1.24	0-5	1.24

Participants were also asked the average number of hours of care that they provided for each child per week. There was a great deal of variation among the hours that individual children were in providers' care. The number of hours per child ranged from seven hours per week to 60 hours per week, with an average of slightly over 35 hours per week per child ( $M = 35.26$ ,  $SD = 15.22$ ). Providers were also asked to give the hours that they were open for business. This statistic varied from 46.25 hours per week to 58.75 hours, with an average of 51.76 ( $M = 51.76$ ,  $SD = 3.37$ ). The earliest hour for opening was reported as 5:30 a.m. and the latest time for closing was 6:00 p.m.; no provider involved in this study reported providing care during non-traditional hours.

Other characteristics of the participants' programs were also reported:

1. Sixteen of 17 participants reported being registered with the Department of Human Services. The unregistered provider was the participant who was not from within the state. Registration is voluntary in Iowa for programs enrolling six or fewer children. Although accurate numbers are difficult to attain, it is assumed that a significant number of people providing child care in their homes are not registered and, therefore, regulated by the state. Thus, the fact that all of the Iowa participants were registered providers indicates that they are not representative of the population of family child care providers in Iowa.
2. Fifteen of 17 participants reported participation in the Child and Adult Care Food Program, a United States Department of Agriculture program that subsidizes the cost of feeding children enrolled in qualified, registered child care programs.

3. Four out of 17 participants reported having a paid assistant, although one participant added that she employed an assistant only in the summer.

When given the opportunity to provide further information about their programs, the most frequent topic among their comments was change in their program that they were either currently undergoing or planned to make in the near future.

### *Computer Usage*

The final topic addressed in the questionnaire was that of participants' use of and attitude toward the computer. Participants were asked to indicate their agreement, on a four-point Likert scale with 1 being *strongly disagree* and 4 being *strongly agree*, with seven statements regarding attitudes toward the computer. As a group, the participants had a positive attitude toward the usefulness of the computer. Overall, participants had confidence in their ability to use the computer, although this was the area in which greatest variance in responses was found. Although a few of the participants indicated a high level of anxiety about their skill level, all participants indicated agreement with the statement that they enjoyed learning new computer skills. Table 6 summarizes the results.

In an open-ended question, participants were asked to list the tasks for which they currently used their computer. The tasks that were listed by more than three participants were, in order of frequency: personal e-mail ( $n = 16$ ); record-keeping ( $n = 13$ ); general Internet resources ( $n = 9$ ); child care- or child development- related Internet resources ( $n = 9$ ); word processing ( $n = 7$ ); and children's activity software or websites ( $n = 6$ ). When asked how many hours per week they averaged on the computer, the responses varied considerably, from three hours to 30 hours ( $M =$

Table 6

*Attitudes about Computer Usage (N = 17)*

	M	Range	SD
Comfortable using the computer	3.71	2-4	.59
Useful for FCC business	3.82	3-4	.39
Intimidated by the computer	1.88	1-4	1.05
Enjoy learning computer skills	3.82	3-4	.39
Useful to family	3.71	3-4	.47
Want to improve computer skills	3.47	2-4	.72
Anxious about skills needed for Forum	2.19	1-4	1.17

12.36,  $SD = 8.42$ ). Few participants made additional comments about computer usage when given the opportunity. Those who did most often mentioned issues involving limitations of time or accessibility to the computer (e.g. had other family members who also made frequent use of the computer).

*Summary*

The participants in this study varied widely in age, years of experience in the family child care business, and in the specifics of their programs, such as number of children enrolled. They also varied widely in the degree to which they were connected to the larger community of early care and education practice, both through formal channels, such as membership associations, and through informal channels, such as talking to other area providers. These 17 women were, however, remarkably similar in their perspective of themselves as professionals, in their commitment to improving their knowledge and practice, and in their desire to

exchange ideas about caregiving with other providers. Most did not have formal education related to child care but most did express an intention to pursue it in the future. Most participants had a positive attitude toward using the computer and learning new computer uses, although they varied widely in their computer experience.

### Group Knowledge Building

As my colleague and I attempted to code the group discussions for knowledge building, it became clear to us that the model I had chosen, my slight modification of the Interaction Analysis Model (Gunawardena, Lowe, & Anderson, 1997), was inadequate in describing the process by which group members progressively worked toward coherent and cohesive explanations of behavior problems and solutions. Specifically, we found it difficult to code the many proposals that reflected cognitive processing of new knowledge, but did not explicitly draw distinctions between the new knowledge and their own present thinking. In other words, there was cognitive action taking place, but it did not necessarily involve expression of cognitive dissonance or negotiation of meaning, two major phases of the Interaction Analysis Model. We discovered that, even though the model included the word *interaction* in the title, it did not focus on the interaction between the participants, an aspect of variability that was evident and possibly important in the discussions in our study. Therefore, we turned our focus from using the Interaction Analysis Model to draw conclusions about our data to developing a more useful analysis model. In this section, I will describe the process that brought us to the creation of the Degrees of Synthesis Model of group knowledge building. I will then

report on the implementation of that model in the analysis of the transcript data and my interpretation of the results of our analysis.

### *Development of the Degrees of Synthesis Model of*

#### *Group Knowledge Construction*

Creating a new analysis model required a return to the raw data within the discussion transcripts to identify the salient factors involved in group problem-solving, as seen through the theoretical lens of social constructivism as expounded by Wells (1999). According to Wells, knowledge-building occurs when “the individual is engaged in meaning making with others in an attempt to *extend and transform* [italics added] their collective understanding with respect to . . . a jointly undertaken activity” (p. 84). Given this theoretical construct and our own observations while attempting to code the transcripts with the Interaction Analysis Model, we agreed that the aspect of the discussions that was important to an analysis model was the *relationship* between individuals’ messages, with respect to proposed causes and solutions, and the degree to which those individual contributions resulted in extension or transformation of another individual’s understanding of the problem or, more accurately, the understanding that she chose to make public via her response.

Our primary task was to develop an analysis model that would discriminate between thinking that had been “extended and transformed” by others’ contributions to a discussion (Wells, 1999, p. 84) and thinking that had not been changed, based solely upon the empirical evidence found in the transcripts of messages that participants sent to the group. The key to the analysis model was the identification of thinking that had *changed as a result of* other participants’ thinking. Both the element

of change and the element of connection to other's thinking were considered necessary in order to conclude that an utterance was an example of *socially constructed knowledge*. The challenge was to determine whether these elements of group knowledge building were ones that could be identified empirically from the transcripts. As with any analysis model, the goal was to develop a model that could identify variability of the construct within our data set, that would be a reasonably reliable analysis tool, and that could be used with other similar data sets.

Determining the unit of analysis again became a concern. Because the discussions were centered on problem-solving, a process that consists of proposing causes and solutions, I decided that the most relevant unit of analysis was each separate proposal of cause or solution within the messages. This unit of analysis seemed much more reasonable than sentences because it was clearly evident that a one writer would offer a one sentence comment on a proposal and another would use a dozen or more sentences to build an argument or describe an example addressing the same proposal. Using the individual proposal as the unit of analysis also seemed more reasonable than using the individual message because one writer might address only one proposal in her message and another might address several, each of which had the potential to vary in the degree to which the author related her thinking to that of other's thoughts on the same proposal. Therefore, I made the decision to regard each proposal of problem cause and of problem solution as a unique unit to be coded.

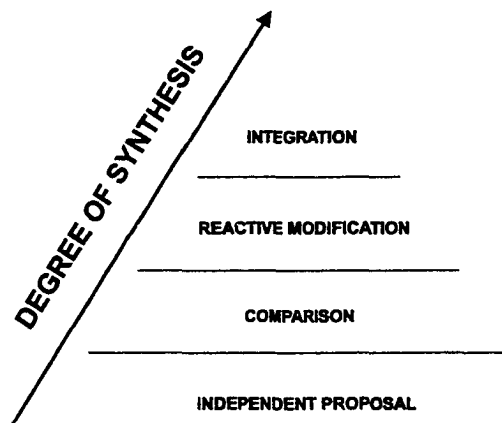
Based on this decision regarding unit of analysis, the first step was to identify each unique hypothesis of causality (e.g., a physical disorder) and proposal for a



solution (e.g., affection or praise) using the transcript from one of the discussions. The second step was to identify instances in which a previously identified proposal was again introduced into the conversation. In these instances, the author was identified for both the initial occurrence and the subsequent occurrence. If the authors were not the same participant, then we attempted to identify evidence reflecting a relationship between the two occurrences, for example, a quote, a reference to other participants by name or as a group, or a use of a specific phrase that had been used in the first message. Finally, we identified qualitative differences in relationships between messages that would indicate variation with regard to extension or transformation of one's thinking due to another's thinking. Through much discussion and careful examination of one of the transcripts, we identified four levels of relationships progressing toward a synthesis or transformation of independent individual thoughts into a cohesive understanding. These four categories were further refined and defined as we, through a reiterative process of independent coding, comparison and discussion, coded three of the remaining discussion transcripts. Figure 1 is a graphic representation of the result: the Degrees of Synthesis Model of group knowledge building.

The first level of the model represents those messages that did not empirically appear to be connected in any way to the messages of other Forum participants and, so, were considered *independent proposals*. All of the participants' initial messages for each case were coded at this level if they were identical to the private messages that they had sent to the researcher before the discussion began (this was very often the case with participants' first group postings). Proposals of

cause or solution that were offered later in the discussion were coded as independent if no acknowledgement of or reference to the previous instance by the second message author was evident, even if the proposal had been mentioned previously by another participant. This level also included messages in which the author reacted to additional information supplied by the provider who owned the problem but that did not include any references to proposals of other participants.



*Figure 1.* The Degrees of Synthesis Model: Socially constructed knowledge represented in group problem-solving.

The second level of synthesis in the problem-solving process represented messages that were a *comparison* of a previous proposal submitted by another participant with the participant's own thinking. These messages were characterized by a referral to another's proposal and a statement of the writer's position on that proposal, without any further integration with her own previous proposals or the

proposals of others. An example of a proposal coded at this level is message number seven in Forum 1's discussion of the first case. Diana, the author, began the message with a quote from a previous message about a solution that involved giving the child special opportunities to help the provider and by giving her extra praise when she displayed appropriate behavior. Diana followed the quote with her own statement, "This is good....I've tried this with a child and it worked quite well" (sentence 7.2, Forum 1, Case 1). There was no further mention of this proposal in her message. In this case the author didn't share much of her thinking with the group, but it was enough to make clear that she had read and made a mental connection between her own thoughts and the original author's proposal. However, there was no evidence of further synthesis with other proposals from Diana or from other participants.

Another example of a proposal coded at this level was one in which the author disagreed with a previous proposal. In a later message of the same discussion, Gretchen addressed the same proposal as Diana. Although she did not use a direct quote or refer to a participant by name, it was quite evident that she was addressing the same issue because she had not previously mentioned this proposal, but the message immediately preceding hers had, as had Diana's message and that of the original author. In addition, the language of the message is close enough to the language of the other messages discussing this proposal that there was little doubt that Gretchen was responding with her own stance on this solution:

"Rewarding a child who misbehaves regularly by giving them special treatment when they do behave may open a bag of worms unless the other children are all getting

the special treatments also....What I am trying to say is if Kim is singled out for special treatments when she does act appropriately, you may have other children misbehave just so that they can get special treatment when they are behaving (their normal behavior)" (sentences 10.1 – 10.3, Forum 1, Case 1). These two examples illustrate that the defining characteristic of this level of synthesis is acknowledgement of another's proposal and the expression of one's own position regarding it. Relative to the theoretical goal of collaborative knowledge-building, developing an understanding of the problem with increasing "systematicity, coherence and consistency" (Wells, 1999, p. 84), the second level represented the comparisons and negotiation of meanings that must take place before such a collaborative understanding can be developed.

The third level of synthesis represented those messages that showed evidence of a change in thinking in the author's message as a response to another's thoughts, that is, those that were a *reactive modification*. This third level differs from the second in that the messages show evidence of transformation in the author's thinking, in response to another's message, that goes beyond simple agreement or disagreement. Examples of this level of transformation that were found in the Forum discussions were: an author's elaboration on her earlier proposal in response to someone else's comments; a combining of an author's own proposal(s) and someone else's proposal into something new; and a modification in original thinking due to the adoption of someone else's proposal. The first example is fairly straightforward and often took the form of an additional example from the author's own experience in which she expounded on her original proposal in an apparent

effort to build her argument for the superiority of her proposal. The second example of reactive modification can be represented by comments made later in Diana's message, from the first case, in which she said, "I agree with the attention-getting [mentioned in message #6] and I feel that the consistency issue could be a factor also [a previous proposal of her own]. Maybe good consistent discipline with a lot of positive reinforcement [mentioned in message #6] is the answer...now the consistent and the positive parts can be the hard part if the child isn't getting these at home..." (sentences 7.3-7.4, Forum 1, Case 1) and then Diana goes on to tie in a new proposal, conferring with the parents. A message from Faye in the discussion of the third case provides a simple example of the third type of reactive modification: "I forgot about allergies..." followed with an example of a child with allergies from her own experience, and concluding with, "just makes you wonder if this is what is happening to this girl..." (sentences 8.3 and 8.11, Forum 1, Case 3).

The final level of synthesis represents those messages that showed evidence of an attempt at *integration* of the ideas of several group members' thoughts into a cohesive understanding of the problem cause or solution. Though this rarely occurred, there were enough instances in which an author seemed to be synthesizing several ideas from both her own and other's previous messages in order to express a more comprehensive, integrated understanding, to allow us to examine them as a separate category of synthesis. Certainly from the theoretical perspective, this level should be included in an analysis model. The most frequent type of comment that was coded as integrative was a fairly simple statement summarizing the author's perception of the group's thoughts, as exemplified by

Jenine's statement about the cause of the child's behavior in Case 3: "I agree with many of the other providers in thinking that it is a physical problem" (sentence 14.1, Forum 2, Case 3). Although Jenine doesn't specifically address the other proposals of cause, she reflects that she has not only read and analyzed others' proposal of cause, but has synthesized them into a summative statement that reflects accurately the fact that the majority of the postings mentioning causation did indeed propose a physical problem. An example of integration that more specifically integrates several proposals was supplied in an earlier message, also by Jenine, with reference to solutions: "I don't know what else I can think of besides contacting my local R&R [Resource and Referral] consultant as Rhonda suggested for advice and information, talking with the parents [suggested earlier by Jenine and two other participants] and relaying any of the info collected [a modification of the proposal not mentioned before], insisting on a doctor's written evaluation [suggested by Jenine and one other participant], and/or recommending the parents contact the AEA [Area Education Agency] about a consultant and observation in my home [one of Jenine's earlier suggestions *not mentioned by anyone else*]" (sentence 10.2, Forum 2, Case 3).

Inter-rater reliability was established using two coders, myself and a graduate student in early childhood education with experience in child care who was not involved in any other aspect of the research study. I provided a brief training in the use of the analysis model using the transcript from Group 1, Case 1. Inter-rater reliability was then calculated using both raters' coding of the transcript from Group 2, Case 3, which contained 11% of the total number of proposals (both cause and

solution) within all of the discussion messages. These two cases were chosen for reliability training and testing because, based on the first author's coding, they each contained at least one instance of each level of the analysis model. We each independently coded all of the proposals of cause and solution that had occurred in Group 1's discussion of Case 3. Dividing the number of proposals on which we agreed on the coding level by the total number of proposals, I calculated the interrater reliability at 89%.

### *Implementation of the Degrees of Synthesis Model*

The first step in the analysis of all of the group discussion data was to identify unique proposals of cause and solution for each of the six discussion transcripts. Table 7 summarizes this analysis and also displays general statistics about each case discussion.

The second step in the analysis of group knowledge building was to code the transcripts from each of the six discussions using the Degrees of Synthesis Model. Table 8 displays the total number of proposals for each discussion and the number of proposals at each level of synthesis, represented as a raw number and as a percentage of the total.

### *Summary of Group Knowledge Building Analysis*

Use of the analysis model on the Forum transcripts seemed to indicate that the model discriminated among the four levels of synthesis and was sensitive to variance between the six discussions. The coding results also revealed the somewhat pyramidal pattern to the four levels of synthesis that was alluded to in the

Table 7

*Number and Percentages of Causal and Solution Proposals in Group Discussions*

	Group 1/ Case 1		Group 2/ Case 1		Group 1/ Case 2		Group 2/ Case 2		Group 1/ Case 3		Group 2/ Case 3	
Number of Participants	8		8		7		7		6		7	
Number of messages	25		25		15		26		22		21	
Total Proposals	92		110		44		111		57		51	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Number of Unique Causal Proposals	6	6.5	10	9.1	7	15.9	8	7.2	7	12.3	5	9.8
Total Number of Causal Proposals	33	35.9	39	35.5	22	50.0	34	30.6	26	45.6	16	31.4
Number of Unique Solution Proposals	11	12.0	22	20.0	11	25.0	23	20.7	8	14.0	9	17.6
Total Number of Solution Proposals	59	64.1	71	64.5	22	50.0	77	69.4	31	54.4	35	68.6

Table 8

*Number and Percentages of Proposals Coded for Each Level of Synthesis*

		Group 1/ Case 1		Group 2/ Case 1		Group 1/ Case 2		Group 2/ Case 2		Group 1/ Case 3		Group 2/ Case 3	
Number of Participants		8		8		7		7		6		7	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
LEVEL OF SYNTHESIS	Integration	9	9.8	1	0.9	0	0.0	0	0.0	0	0.0	4	8.0
	Reactive Modification	6	6.5	6	5.5	2	4.6	3	2.7	10	17.5	3	6.0
	Comparison	17	18.5	11	10.0	4	9.1	5	4.5	6	10.5	1	2.0
	Independent	60	65.2	92	83.6	38	86.3	103	92.8	41	71.9	42	84.0
Total Proposals		92		110		44		111		57		50	



graphic representation of the model. With regard to the research question about the achievement of higher levels of knowledge building, I observed that all of the discussions achieved at least the third level of synthesis, that of modifying thinking as a result of another's comments. Three out of the six discussions included at least one instance of a participant synthesizing several of the proposals that had been offered to the group.

Interestingly, the discussion of the second case resulted in no integrative proposals for either Group 1 or Group 2, despite the extreme differences in the overall volume of messages and proposals for the two groups. An examination of the matrices that displayed the coded data revealed an interesting pattern that appeared to be unique to this problem case. For both groups, when the proposals suggested in each participant's initial messages are removed, the number of proposals overall is drastically reduced, much more so than for the other discussions. For Group 1, 55% of the total proposals were initial suggestions; for Group 2, 50% were found within participants' first message to the group. The same calculation for the other four discussions produced the following results: G1C1 – 26%; G2C1 – 35%; G1C3 – 47%; G2C3 – 30%. The fact that half or more of all the proposals in the discussion occurred in the participants' first messages suggests that once the initial suggestions were made, participants didn't think there was much more to say. Those who did say more either stayed with their original proposals of cause or solution or added new proposals that had not been mentioned previously. This phenomenon seemed to be unrelated to group size, number of messages, or number of total proposals.

Perhaps the variable that did influence the level of synthesis for both groups' discussions of this case was the behavior situation that was being discussed. This case involved a child, Julia, who exhibited persistent crying, whining, clinging and fear of being out of sight of the provider. Case 1, in comparison, involved a child, Kim, who exhibited persistent aggressive and non-compliant behavior. Case 3 involved a child, Rachel, who frequently and persistently vomited while in the provider's care. Perhaps Julia's behavior seemed an easier problem to solve, whether because it seemed familiar to them or because it seemed fairly easy to understand, and, therefore, elicited fewer comparisons and modifications between proposals of causes and solutions and less of a need to synthesize varying viewpoints.

#### *Individual Knowledge Appropriation*

In order to answer the question of whether individual participants appropriated the knowledge that was socially constructed by the group, I examined change in each participant's understanding of guidance and discipline. This change was examined by collecting information from three data sources, individual pre-and post-discussion summaries for each case, a self-report rating at the conclusion of the Forum, and a response to an open-ended question asked via phone interview two to three weeks after the Forum concluded. I looked for instances in which consistency was found among the three data sources regarding the degree of change in thinking for an individual.

### *Summary of Analysis for All Participants*

Of the 17 participants, eight supplied pre-and post-discussion summaries for all three problem cases. Of the nine who did not, three were the participants who had submitted their behavior problem for discussion. Of the remaining six, three had indicated during the Forum that situations in their personal lives had temporarily inhibited their ability to participate in the Forum to the degree that they wished.

Table 9 displays the summary of all of the data related to individual knowledge appropriation as measured by the three data gathering methods. The first column represents the overall level of change for all of the pre- and post-discussion summaries that the participants submitted. As described in the methodology section, I assigned an initial level of change to each pair of pre- and post-discussion private summaries, based on criteria delineated in Appendix E-2. The three levels of change were: *slight/no change*, *moderate change*, and *considerable change*. In order to aggregate the results from each of the three cases for each participant, I assigned numerical values to each of the categories of degree of change: 1 (*slight or no change*); 2 (*moderate change*); and 3 (*considerable change*). These numerical values were then averaged to arrive at an overall degree of change for all of the cases for which participants submitted summaries. It is noted in parentheses in Table 9 the number of cases for which each participant had submitted summary information.

The second column in Table 9 represents the participant's response to the post-Forum questionnaire item asking the participant to rate the degree to which their skill in understanding the guidance and discipline of young children had

changed over the course of the Forum. Participants had four levels of change from which to choose: *didn't change*, *improved slightly*, *improved quite a bit*, and *improved a lot*.

Table 9

*Summary of Individual Change in Knowledge about Challenging Behavior*

	Overall summary score (number of cases)	Post-Forum questionnaire rating	Phone survey
Group 1			
Anne	3.0 (1)	improved slightly	Moderate change
Beth	2.5 (1)	didn't change	Moderate change
Cara	2.5 (2)	improved quite a bit	Moderate change
Diana	2.3 (3)	improved slightly	Moderate change
Ellen	2.6 (3)	improved slightly	No/slight change
Faye	2.2 (3)	improved a lot	No/slight change
Gretchen	2.0 (1)	improved a lot	Moderate change
Heidi	2.0 (2)	improved quite a bit	-
Group 2			
Isabel	2.0 (2)	didn't change	No/slight change
Jenine	1.8 (3)	didn't change	No/slight change
Kris	2.6 (3)	improved quite a bit	No/slight change
Laura	2.5 (2)	improved quite a bit	Moderate change
Melissa	2.3 (2)	improved a lot	Considerable change
Nancy	2.8 (2)	improved slightly	Moderate change
Patty	2.2 (3)	improved quite a bit	No/slight change
Rhonda	2.7 (3)	improved slightly	Moderate change
Terri	2.3 (3)	improved quite a bit	Considerable change

The third column in Table 9 represents participants' responses to the open-ended phone survey question asking about any change in approach to handling challenging behavior since having participated in the Forum. These statements were examined for evidence of change in thinking. These responses were judged to range in degree from *slight or no change* (i.e., statements that reflected very little, if any, change in behavior, such as, "Most stuff that was discussed, I do, so nothing really changed;" this category also included statements that reflected reassurance or social support but no change, such as "it assured me that I was doing the right thing") to *moderate change* (i.e., statements that reflected engagement in mental processes but not necessarily a change in behavior or statements that reflected an ambivalence or uncertainty; for example, "It got my mind going in different ways....I really enjoyed the resources, too" or "I'm probably more aware of different agencies or places that you can go for help") to *considerable change* (i.e., statements that indicate a change in thinking that has or is expected to lead to changed behavior; for example, "...it had a lot of good ideas that I'll definitely be trying.").

As can be seen in Table 9, all but one of the participants showed an overall score for case summaries reflecting at least a moderate level of change in thinking. Fourteen of seventeen participants rated themselves as having changed to some degree in their thinking about guidance and discipline as a result of having participated immediately after the Forum and ten of the seventeen indicated in the phone survey a few weeks later that they had "changed their approach to difficult behavior situations."

### *Indepth Analysis of Extreme Cases*

Of the eight participants who had submitted pre- and post-discussion summaries for all three cases, two were identified for further study: one for whom all three data sources indicated a relatively small degree of cognitive change as a result of the discussions and one for whom there was a relatively large degree of change. Although the other participants reported varying degrees of change in thinking, these two cases were at either end of the range. In addition, the three data sources were quite consistent in reflecting the degree of change for these two participants. For these two reasons, I concluded that a closer look at these two participants, as opposed to other participants, would be most likely to reveal differences that may have influenced the affect of the discussion on their thinking about guidance and discipline. The following section will present case studies of each of these two participants. In order to honor my guarantee to all participants of anonymity, details that might identify these two participants have been described in more general terms.

#### *A Case of Little Cognitive Change: Jenine*

Jenine was a woman in her 50's from a relatively large metropolitan area who had spent over 20 years as a family child care provider. Jenine had a very high degree of professional development – one of the highest among all of the participants. She had her Child Development Associate (CDA) credential and expressed an interest in pursuing both a two- and a four-year degree in early childhood education. Jenine's program was registered with the state licensing agency and participated in the Child and Adult Care Food Program. Jenine's

program had recently become accredited by a national professional organization (the only participant to have achieved this goal). Jenine reported belonging to a both a local and national professional organization for over 15 years. She also reported having held office in her local association. Jenine indicated that she communicated with other providers frequently, once or twice a week by phone and in person.

Before the Forum, Jenine indicated that her interest in participating was to “discuss and receive information from others in child care on child care issues, problems, activities, etc.” She also indicated that she was uncomfortable using the Internet and was anxious about the computer skills needed for the Forum, but was hoping to improve her computer skills through participating.

Jenine was an active participant throughout the Forum discussions. She contributed the following number of messages (relative to the total) for each case discussion: Case 1 – 3/25 (12%), Case 2 – 5/26 (19%), and Case 3 – 5/21 (24%). At the end of the Forum, she posted this final message to the group, “I’m very glad I got involved with this forum. I also saved all of your emails full of information to keep in my files for later use. I hope you don’t mind if I send emails occasionally with a problem or question. Please do the same with me.”

Comparisons of Jenine’s pre- and post-discussion summaries reflected very little change in thinking. For both causal factors and solution strategies, Jenine tended to maintain her original thinking with few, if any, additions or modifications. In each case, Jenine tended to view the child’s misbehavior as a reaction to some influence that was outside of the child’s control. This view was reflected in both

comments about causes of and solutions for misbehavior. Jenine's solutions without exception included communication with parents.

In the final questionnaire, Jenine stated that she liked "hearing from and getting ideas/opinions from others." When asked what she disliked about the Forum, she stated, "It seemed to drag a bit after the initial questions. We answered and then were asked to answer again. I felt like I repeated myself several times." This may refer to being asked to send a private summary both before and after the discussion indicating thoughts about causation and solution, as well as posting those thoughts to the group. When asked to rate her changes in attitude, she selected "no change" for each of the four attitude areas: online training, computer-mediated communication, social learning, and professional community. In a later question, she stated that she selected "no change" because "my expectations were high and they were met." She indicated a slight change in skill level for both computer skills and online communication skills but no change in guidance and discipline skills. When asked which aspects of the Forum were most influential to her thinking about the problems, she rated them all as somewhat influential. She was pleased with her own level of participation in the Forum and indicated that she would participate again if another Forum were offered. Her comments suggested that it was the convenience of asynchronous communication that was most appealing to her as well as other FCC providers to whom she would recommend the Forum. Her advice to future participants was to be honest, "Don't write what you think the facilitator wants you to, write what you really think." Her final comment was, "I'm looking forward to participating in another Forum soon."



Jenine's comments in the phone interview a few weeks later seemed to be quite consistent with the information she provided in the final questionnaire with regard to the influence of the discussions on her approach to challenging behavior. She didn't mention any immediate benefits or changes as a result of the discussions, but did talk about archiving the discussion e-mails and maintaining contact with Forum participants for future behavior situations that might arise. In regard to connections with other providers, Jenine talked briefly about how well-connected she was with providers in her own geographic area and then commented that, during the Forum, it was interesting "to see how different areas, different parts of the state, still deal with the same problems." Jenine seemed very enthusiastic about the change in the way she used the Internet after the Forum, "I never looked anything up, didn't do anything. Well, since I was able to figure out how to look up the pages...then, golly, I started using it for all kinds of stuff. I do feel that's helped a great deal." She ended the interview by indicating that she would be very interested in other training that was offered using the same format.

*A Case of Considerable Cognitive Change: Terri*

Terri was a woman in her early 40's from a relatively small rural town who had operated a family child care business for slightly over 10 years. Terri had not pursued many avenues toward professional development. She indicated that she was in the process of acquiring her CDA credential, but didn't indicate any interest in pursuing further formal education in early childhood education. Though Terri reported talking daily to other providers by phone, according to her responses to survey questions, she never attended professional meetings and was a member of

neither a local nor national professional association. Terri indicated a reluctance to attend training workshops because they usually conflicted with “family times.” The opportunity to learn at one’s own convenience via the Forum was appealing to her. When asked why she was interested in participating in the Forum, Terri responded, “I think it would be very helpful to find out how other providers handle difficult situations. Sometimes it is hard to get advice from people who do not actually work directly with a group of children.”

During the Forum discussions, Terri participated very little, contributing two messages in the first case, none in the second, and one in the third. Yet her pre-and post-discussion summaries indicated a change in her understanding of the challenging behavior in question. For all three cases, when indicating her perception of the causes of the behaviors, Terri went from relatively certain suggestions to a much greater degree of uncertainty. In both the first and last cases, by the end of the discussions, Terri admitted to being “baffled” about the cause of the behaviors and had no suggestions other than termination of the child care contract.

At the end of the Forum, when asked in the final questionnaire to rate the degree of change in her skills in guidance and discipline, Terri selected “improved quite a bit.” She indicated that several aspects of the Forum influenced her thinking a lot: *reading about others’ experiences, writing her own responses, reading the additional readings and resources, hearing others’ advice, and trying to come to a consensus.* Later, when asked during the phone interview how her approach to challenge behavior situations had changed as a result of having participated in the Forum, Terri gave the following response:

I think with this, I kind of realized ...it's something that you can't get a definite answer [to]...you can't call somebody up and say, "What do I do? I want an answer right now!" It's something you have to work through, figure out, kind of plan through....it's made me think, if you get a calendar and get this figured out, there's probably some trigger why this is happening instead of sitting in the middle of it saying, "Somebody tell me what to do!" It made me think it's more of a process to think about and work through.... You could tell [on the Forum] the people who had really done that and you'd go, "Wow!"

In the post-Forum questionnaire, Terri reported that she was not satisfied with her own level of participation. When asked to elaborate, she mentioned a lack of time to reflect on the cases. "These situations took a lot of deep thought, I probably have not given past situations as much thought and brainstorming as I possible [sic] needed to. I will use the Internet more now to help get ideas to help with problems."

Terri also indicated other benefits of having participated in the Forum. She rated her attitude as better for all of the areas listed on the questionnaire: attitude toward online training, attitude toward communicating with others via computer, attitude toward discussion as a way of learning, and attitude toward self as a member of a professional community. She reported a slight improvement in computer skills and communicating with others by e-mail. During the phone interview, Terri expressed surprise at the child care information that was available on the Internet. "I like the part that it can be at nap time when it's real quiet. You can be in your pajamas! It can be midnight! And you can still get information without having to go to the library and look it up or find a workshop on that subject."

In both the questionnaire and the phone interview, Terri expressed an appreciation of being able to discuss child care challenges and workable solutions with other caregivers who have experienced the same types of situations that she has experienced. Terri indicated that she would recommend a training such as the Forum to other providers and would participate again herself if given the opportunity, "Yes, I feel that I got some good information from it and learned some strategies that I never thought of before." She had no advice for improving the Forum and suggested that any child care topic would be appropriate for such a training format. In her final comments, Terri said, " I hope this becomes a way for experienced providers to help new providers with their day care and also not to feel isolated with a bunch of toddlers! A friend is just a click away."

#### *Summary of Analysis of Individual Knowledge Appropriation*

The results of the data analysis for individual appropriation of knowledge built through group discussion indicate that the majority of the participants experienced some degree of change in thinking about dealing with challenging behavior as a result of having worked with others to solve behavior problems. And for many participants, that change was moderate to considerable. A high degree of agreement between the three measurement methods was not achieved for many of the participants, nor was it expected, given that they were intended to examine the rather broad construct of knowledge appropriation in quite different ways.

For some of the participants, however, there was consistency across the three measures. An indepth examination of the two participants for whom the results were quite consistent and at opposite ends of the spectrum of degree of change

revealed some interesting comparisons. Two variables on which these two participants differed were particularly evident: the degree to which they were connected to the larger community of early care and education practice and the degree to which they participated in the discussion. The possible significance of these differences and their implications are discussed in the following section.

## CHAPTER 5: DISCUSSION

Before discussing the conclusions that I have drawn, limitations that I observed, and implications for research and practice, two general comments should be made regarding our summarizing comments. The first refers to the two research questions and my decision to examine them as separate phenomenon, even though they clearly were not separate in the context of activity. The second comment has to do with a somewhat unanticipated shift in balance in our study from discovering a small bit about methodology and a great deal about socially constructed knowledge building in a specific setting to discovering more about methodology and less about the phenomenon in which I was initially interested.

First, from the outset of the study, I recognized that the understanding that an individual would choose to share with the group might very well differ from what she might share privately with the facilitator. Although examining both types of representations of participants' understanding within the same study invited questions about comparisons and relationships between publicly shared and privately shared knowledge for individuals, I also realized that I needed to maintain an exploratory perspective because so many aspects of this study had not been the focus of previous research. Therefore, for this initial examination of socially constructed knowledge among family child care providers in an online learning environment using problem-based learning, I chose to examine the two research questions of group knowledge building processes and individual appropriation of new knowledge separately with the intention that, only after I had gained a degree of

understanding of each type of knowledge could I begin to examine relationships and patterns between the two.

Secondly, as I stated in the introduction to this study, my intent was "to establish and/or refine analysis methodologies that would be helpful in testing, expanding and refining Wells' (1999) theory and, in the process, make discoveries about the knowledge building experience encountered by the participants in the study that would further inform both the research and the development of professional knowledge and learning of FCC providers" (p. 8). This goal turned out to be considerably more difficult than I initially expected, particularly with regard to the analysis of group knowledge building. This experience has led me to agree with Miles' and Huberman's (1994) conclusion that 'methodological quagmires, mazes, and dead ends are not necessarily a product of researcher incapacity, but of qualitative data themselves. Like the phenomena they mirror, they are usually complex, ambiguous, and sometimes downright contradictory" (p. 309).

However, I believe my decision to use a qualitative approach remained a sound one, based on my agreement with Miles and Huberman's (1994) assertion that qualitative methodology is an effective strategy for exploring a new area of study with the intention of developing hypotheses for future research as well as for testing hypotheses that have been formulated in other research contexts. In fact, the methodological issues that I wrestled with throughout the study became, perhaps, the most fruitful aspect of this research and were a necessary step on the way to exploring the research questions in which I was originally interested. It is my intention in this final section to follow Miles' and Huberman's (1994) admonition to

share my observations about methodology as well as any conclusions and implications that I have drawn from the analyses in answer to my research questions.

### Conclusions and Implications Regarding Analysis of Group Knowledge Building

As my colleague and I worked through the process of implementing a data analysis model, rejecting it, and developing an improved model, I made several observations that were important lessons to be learned about the development and use of coding frameworks. The first conclusion that I will expound on relates to my realization that the structure of the learning activity in which knowledge building is being studied has a profound effect on the knowledge building process and how it is manifested. I will discuss the implications of this factor on the usefulness of a model and the generalizability of the findings when the model is used. The second conclusion relates to some assumptions that were made by the developers of the first model that we used (Gunawardena, Lowe, & Anderson, 1997) and the impact of those assumptions on the analysis and resulting findings. Both of these conclusions support my beginning assertion that researchers in the field of online learning must work toward greater consistency between the theoretical framework, the learning context, and the analysis model.

#### *The Impact of the Learning Activity on Knowledge Building*

As discussed earlier, a considerable amount of research has studied online learning and other social interactions. However, little of this research has focused on understanding cognitive processes that take place during computer-mediated group



learning. A notable exception was the work of Gunawardena and colleagues (Gunawardena, Lowe & Anderson, 1997; Kanuka & Anderson, 1998). As I read their published work, I concluded that the socio-constructivist theoretical perspective of the researchers and the research questions that they addressed were very similar to my own. I was disappointed to discover, however, that the model did not seem to describe the cognitive processes reflected in the Forum participants' discussions nearly as well as it had described the processes that occurred in the Gunawardena et al. (1997) study. I believe that this was not necessarily a reflection of a difference in the level of knowledge building between the two groups of participants, but rather a reflection of the differences between the structure of the two learning activities. Gunawardena et al. used the transcripts from an online debate between distance education professionals to develop their model, the Interaction Analysis Model, using grounded theory principles. The authors conceded, "the debate format...imposed an organizational structure which influenced the interactions" (p. 403).

I would suggest that the debate format used by Gunawardena et al. was indeed too structured to yield a model that could be useful in a variety of learning contexts, particularly those that employ a more naturally occurring discussion of a problem in professional practice. In particular, the model proposed that, in order to move beyond the first step of simple information sharing, the group must discover and explore dissonance or inconsistency among ideas, then engage in case-building. In a debate format, these disagreement and case-building phases are inherent; one would expect them to occur because they are the essence of the activity. In more naturally occurring discussions about ideas, concepts or problems,

however, it may very well be that these phases that are so evident in debate are less frequent, less explicit or possibly missing altogether. After all, social conventions inhibit blatant disagreement, questioning and debate of another's ideas in more naturally occurring conversations. Certainly in this study, participants very rarely disagreed with or questioned in an explicit way someone else's notion.

Similar conclusions were drawn by the investigators in the only other published study that has implemented the Interaction Analysis Model. One of the originators of the Interaction Analysis Model, Terry Anderson, along with colleague Heather Kanuka (Kanuka & Anderson, 1998), used the model to study a three-week professional online forum that was quite unstructured in nature. Sixteen managers of workplace learning centers actively contributed to an online discussion of their work issues. In this very unstructured activity, the overwhelming majority of messages, 93%, were coded at the first level of the model, sharing/comparing of information. In this context where very little scaffolding occurred for the development of new knowledge, very little knowledge building occurred, *as it was defined by the model* (an important point that will be discussed shortly). This finding was not particularly surprising since the activity was designed as an informal opportunity for sharing knowledge with professional peers.

These two applications of the Interaction Analysis Model are examples of two ends of a continuum of activity structure that affords the opportunity for knowledge building. The Kanuka and Anderson study (1998) represents an activity in which no scaffolding for negotiation of knowledge is apparent, either as a function of the environment or of a facilitator. At the other extreme, the Gunawardena et al. (1997)

study used an instructional design that nearly guaranteed that negotiation would occur.

A more frequent occurrence in the development of learning contexts in which gaining new knowledge is an objective of the activity is the implementation of an instructional strategy somewhere in the middle of the structure continuum. Because the Interaction Model of Analysis was developed using data from one extreme of the continuum, its usefulness in describing and explaining the knowledge building processes that may occur in activities across the range of structuredness is questionable. Although Kanuka and Anderson concluded that the model was validated by the additional data gathered from self-report questions about the benefits to participants of the online activity, my examination of the questionnaire results leads us to a different conclusion. According to the participants' questionnaire responses and the responses to the phone survey reported in the published research article, participants did gain new knowledge. However, that knowledge was gained without the need to negotiate any inconsistency with existing thinking because no inconsistency existed, a conclusion that leads me to the next issue: assumptions of an analysis model.

#### *The Role of Theoretical Assumptions in Analysis Model Development*

By the end of my study, I realized that two major assumptions upon which the Interaction Analysis Model were built lay at the root of much of my discontent with the model as a tool to describe and explain knowledge building. The first is the assumption alluded to in the preceding discussion: to result in knowledge, cognitive activity must include dissonance or inconsistency with current thinking. This

assumption is the basic tenet of the theory that Kanuka and Anderson discussed as *critical constructivism*. In summarizing critical constructivist theories of learning, the authors stated that these theories are “concerned with changes that occur as a result of new knowledge that is internally contradictory” (p. 60). Interestingly, in the published article in which Gunawardena et al. reported on the development of the Interaction Analysis Model, they did not discuss this aspect of constructivist theory at all, focusing their discussion instead on the social aspect of constructivism. They did distinguish, however, between two types of learning, based on the debate discussion that they were studying: learning in which additional examples of concepts are added to what is already understood, resulting in elaboration, and learning in which conflicting concepts or thinking result in an adjustment of existing thinking. Kanuka and Anderson (1998) also acknowledged two types of learning, although they did not refer to them in those terms. In their discussion of the results of their study, the authors concluded, “there was little evidence of negotiation of meaning resulting in new knowledge construction. Rather, most of the online interaction was an acquisition of information that was compatible with existing knowledge, thereby increasing the participants’ overall knowledge base” (p. 66).

In the Forum transcript data, it was clear that there were cognitive processes and changes taking place for some of the participants over the course of the discussions, despite the rarity of identification and negotiation of conflicting or inconsistent views. Gunawardena et al. (1997) chose to focus the model development only on the knowledge that was gained through disagreement and negotiation, in large part, in my opinion, because the debate format magnified the

importance of those aspects of knowledge building. Kanuka and Anderson (1998) chose to make a semantic distinction between *new knowledge* and *acquired information*. In the Forum data, however, the lack of explicit disagreement or direct debate of differing views found in the discussions did not, in my opinion, necessarily indicate that the discussants were not expressing cognitive change as a result of one another's messages, nor was I willing to concede that such cognitive change was not knowledge building.

A return to the theoretical framework guiding this study confirmed my understanding that knowledge building is not limited to situations in which one encounters new knowledge that is in opposition to one's current understanding. Wells (1999) states, "Whether [others' knowledge] has an effect on one's thinking depends upon the extent to which it can be infused with the receiver's experiential meaning and deliberately integrated into his or her model of the world" (p. 84). This understanding of socially constructed knowledge seems to have more to do with the willingness of the receiver to cognitively engage with the knowledge expressed by another than with the degree to which the two understandings are similar.

Theoretically, then, one could build new understanding (i.e., learn) by integrating knowledge shared by another person, whether it required an abandonment of previous thinking or it expanded what was already understood. In more concrete terms, "Oh, I don't know why I didn't think of that before, that really makes a lot of sense" and "Hmm, now I see what you mean, yes that does make more sense" both fit Wells' definition of knowledge building as "sharing, questioning,

and revising of opinions [that] leads to a new understanding that...is superior to...previous understanding" (p.112).

This conclusion introduces examination of a second assumption of the Interaction Analysis Model with which I disagreed, leading me to develop a more suitable model. Both theory and data discussed in previous paragraphs seemed to indicate that the focus of the analysis of group knowledge building needed to change from cognitive discord to cognitive interaction and responsivity. Interestingly, Gunawardena and her colleagues discussed at length the concept of interaction as an integral aspect of group knowledge building. The analysis model, however, did not specifically address interactivity as a variable construct. Interactivity was assumed to be inherent in the online nature of the communication: "*interaction* is the entire gestalt formed by the online communications among participants.... [The participants] are not merely acting, nor reacting, but interacting, even if the links among individual messages may not be readily apparent" (p. 407). This perception of the process of knowledge building is another example of strong influence of the debate structure of the learning activity: "Practically all messages could be linked to other messages and to the theme of the debate. Indeed, the debate format necessitated the linking of messages..." (p. 407).

In my examination of child care providers' discussions using problem-based discussions, however, the messages were not explicitly connected to such a great degree. And when messages were in response to earlier messages, I detected a distinction between *social* interactivity and *cognitive* interactivity. It appeared that participants could express a social connection to others in the group, yet not be

cognitively responsive to the reasoning reflected in others' messages. Participants could also express no connection of any kind to other messages, a phenomenon that, in this learning activity occurred quite often.

Of course, I readily concede that, as Hatano and Inagaki (1991) point out, "utterances in a group are almost always preceded by editing and, thus, cannot be taken as concurrent indexes of mental events" (p. 339). Other research methods, such as personal interviews and think aloud protocols, might shed light on responses participants chose not to share with the group. This inquiry would certainly be an interesting direction in which to take the study of group knowledge building. However, this concession does not discount the possibility that cognitive interaction may be variable among group participants' shared knowledge, precipitating a need to discriminate between messages to the group that reflect cognitive interaction with other participants' ideas and messages that reflect cognitive processing of one's own independent thoughts.

A desire to analyze cognition in this way was the impetus for radically modifying the Interaction Analysis Model into the Degrees of Synthesis Model. In proposing this model, I intended to provide an analysis tool that might be useful in studying cognitive change via interactivity. It was also my goal to propose a tool that could be applied in a wider variety of group learning settings, particularly those that more closely resemble discussions among the members of a community of practice that would occur naturally. Problem-solving among professionals frequently occurs informally and is certainly an activity that educators can take advantage of when designing learning opportunities. By using such a format for this study, I was able to

build on the groundbreaking work begun by Gunawardena, Anderson, and their colleagues and refine the model to be applicable for a broader range of online discussions formats.

*Limitations of the Degrees of Synthesis Model of Analysis*

The new model is also a semiotic artifact that will continue to be improved as I and others use it to better understand collaborative knowledge building in online environments. Some suggestions for improvement occurred to me as my colleague and I wrestled with the difficult task of refining and implementing the analysis model. In a paper dealing with problems in transcript analysis, Fahy (2001) discussed the challenge of developing transcript analysis frameworks with adequate discriminant capability and reliability. Fahy suggested that one cause of inadequate discriminant capability is the complexity of the instrument. Gunawardena's framework consisted of over twenty separate codes divided among the five larger categories. It should be pointed out that the authors explicitly stated that the subcategories are "operations include[d]" within each stage, and therefore, it is assumed, to be regarded as exemplars of statements that would be coded as a belonging in a particular phase.

However, to also assign codes to each of the exemplars needlessly complicated the analysis process, in our evaluation. Assigning codes to the phases of knowledge building and using exemplars to clarify the meaning of each phase seems a more useful approach. Although the new model did indeed simplify the coding scheme, as mentioned in my earlier discussion of results, the number of proposals occurring at subsequently higher levels of knowledge building were increasingly infrequent. Collecting further data from problem-solving discussions



would increase the pool of data from which to identify exemplars that would further delineate and explain the quality of each category that make it unique.

A second aspect of the Degrees of Synthesis Model that needs improvement is related to the second cause of reliability problems mentioned by Fahy (2001): an inappropriate unit of analysis. Although I maintain that using the unique proposal of cause or solution as the unit of analysis still makes sense conceptually for problem-solving discussions, in looking through instances in which coders disagreed, certain types of messages were a problem to code because they contained multiple proposals at apparently different levels of knowledge building.

One type of message that was inconsistently coded was one in which the participant linked several proposals, usually solutions, together into a summary. Although this was exactly the type of message that would warrant a code of *integration* according to my definition, the confusion arose when the coder noted that the first proposal in the list indicated agreement with another participant, the second proposal in the list was a new independent proposal, and the third proposal was a modification of one someone else had mentioned earlier. Coders were not clear as to whether all three of the proposals should be coded as integration or whether each should be coded according to their own separate characteristics, in this case “comparison,” “independent,” and “reactive modification,” respectively. So, although each proposal was intended to be coded separately, in context they were related. That relationship, although it was the very aspect of the discussion that we were analyzing, made coding confusing. Further thought needs to go into making the

coding rules clear and consistent. Again, additional data would provide further opportunity to refine the coding rules.

#### Directions for Future Research

##### *The Study of Group Knowledge Building*

By repeatedly being immersed in the rich data of discussion transcripts, by struggling through the analysis of the discussions, and by examining the various data displays, I was able to identify several possible avenues for future inquiry. The future research task with the highest priority should be the collection of additional data from very similar settings for the purpose of further refinement of the Degrees of Synthesis Model of analysis. As the model gains reliability as an analysis tool, comparison studies would be helpful for identifying variables that are related to the degree to which groups build knowledge socially.

For example, in our study we had participants that varied considerably in their level of experience as well as in their level of involvement in the professional community of practice. Lave and Wenger (1991) have written about the role that old-timers play in apprenticing newcomers into communities of practice. A study that investigated whether providers in both roles are necessary for higher levels of knowledge building within group problem-solving discussions would be helpful in understanding more about the relationship between veteran child care providers and newcomers in general and, more specifically, would provide guidance for decisions about group composition that would be most likely to lead to optimal learning during collaborative problem-solving. The size of the discussion group is another dimension of group composition warranting further study.

Several aspects of the learning activity and their impact on knowledge building warrant further study. An aspect of the learning environment that may have contributed to some of my findings was the specific case that was being discussed. A great deal more is left to learn about characteristics of problem cases that generate a greater degree of knowledge building during a problem-solving discussion. In a related vein, the general topic for which cases are chosen may also greatly affect the characteristics of the ensuing discussion. For this study, I chose challenging behavior primarily because it is one of the most complex areas of caregiving practice. Although several of the participants indicated in the final questionnaire that any child care topic would be well-suited for online group problem-solving, empirical evidence addressing this aspect of the learning activity would help guide the development of online continuing education for providers. And finally, the length of both the individual case discussions and the length of the entire Forum may have contributed to the degree of synthesis of knowledge that was observed. This line of inquiry might be of particular interest to those who plan to design online credit courses for practicing providers as part of a degree program.

A significant aspect of an online learning activity is the role and influence of the facilitator. Because I did not intend to explore this aspect of the Forum empirically, I have not included it in the discussion of our study other than to describe the activity of the facilitator. However, it is an area of online learning that is in great need of systematic study, as challenging as that study might prove to be.

A final aspect of the discussions that I discovered and am very interested in studying further, though it was beyond the scope of this study, was the strategies

that participants used to validate their proposals. I could easily identify several strategies used by participants, such as describing a personal experience, citing an authority, or appealing to the group. Further exploration in this area might include study of the patterns of usage of various strategies and the effectiveness of each.

*The Study of Individual Appropriation of Shared Knowledge*

My in-depth examination of two participants who were at opposite ends of the spectrum of individual appropriation of the knowledge shared during the group discussions was quite helpful, as I had hoped, in bringing to light areas for further study. In the cases of Jenine and Terri, I identified two variables of interest. Although the two participants shared many similarities in their personal characteristics, one area in which there was a marked difference was in their level of connection to the larger early care and education professional community. As one can readily observe in the descriptions, Jenine had pursued several avenues of professional development as a child care provider and had intentions of continuing that pursuit.

Consistent and committed involvement in the larger professional community, however, was not part of Terri's experience. Drawing from the data analysis, Terri appeared to have changed much more in her thinking about guidance and discipline as a result of having participated in the discussion than did Jenine. One possible explanation for this difference is that Jenine's long-standing connection with early care and education community had provided her with many opportunities to understand the complexity of children's challenging behavior and develop her skills in solving difficult behavior problems. Because her level of understanding was

already high, relative to the other participants, there was little knowledge that was shared in the group that was new to her.

Terri, on the other hand had little opportunity to gain understanding from members of the larger professional community and was basing her practice on personal theories about child behavior that she had built from her own limited experiences. Terri's comments during the phone interview support the notion that she had learned a great deal from those in the Forum who were more experienced in dealing with the complexities of difficult behavior. This opportunity to observe a more experienced peer seemed to have been a novel experience for her and one that she appreciated. As might be expected, Terri rated the Forum experience highly and expressed interest in participating in another learning activity of this type.

More surprisingly, Jenine also rated the Forum experience highly and indicated an interest in participating again. Evidently some other aspect of the experience besides learning more about guidance and discipline was enjoyable and of value to her. She stated that she had liked "hearing from and getting ideas/opinions from others," even though they didn't seem to have a high educational value for her. Identifying more specifically what it was about the Forum that gave it value to Jenine would be not only interesting as a basic research question but, from an applied perspective, might also help in the design of online learning activities that would attract these more knowledgeable members of the professional child care community who could apprentice less knowledgeable members into the accepted skills and valued knowledge of that community (Lave & Wenger, 1991).

In general, the concept of professional development and connection to the larger professional community has not, to my knowledge, been addressed in any way in the early care and education research literature. There is much to be discovered about the professional identity of child care providers and their involvement in professional development activities, both individual, such as credential and degrees, and group, such as professional association meetings, workshops and conferences. Following the lead provided in this study, researchers could pursue the study of relationships between professional identity/affiliation and learning constructed within a group of child care professionals.

An examination of the cases of Jenine and Terri provided another surprising finding about participation in online learning activities. Several researchers have measured level of participation in online learning activities, nearly all of which have been college courses (e.g., Barrett & Lally, 1999; Ross, 1996; Ruberg, Moore & Taylor, 1996; Weedman, 1999). In general, the assumption seems to be that more participation is better. Of these studies, only Weedman (1999) actually tested that assumption in her comparison of “posters” and “lurkers,” finding significant differences in participants’ ratings of social variables, but no difference in their rating of “intellectual stimulation.” The cases of Jenine and Terri, however, imply that the interaction between frequency of posting and the level of knowledge gained from the group discussion is more complicated than a simple positive correlation. In fact, for these two participants, it appears to have indicated just the opposite relationship.

Filling in more details about the context of the discussions may help to illuminate possible influences behind the level of participation and the level of

learning acquired from others in the group. Jenine and Terri happened to be in the same discussion group, Forum 2. Also in the group of nine participants, were two who, like Jenine, tended to post long, reflective messages in which they expressed, sometimes in great detail, their own problem-solving process. Laura had been a FCC provider for over 20 years and, like Jenine, had been a member of a professional association for substantial number of those years. She also expressed a desire to pursue a 4-year degree in early childhood in the future. Rhonda, on the other hand, was a relative newcomer to family child care, but was the only one of the participants to hold a bachelor's degree in early childhood education. She brought an unusually diverse employment history to the discussion as well: several years as an early childhood special education consultant, five years as a child care center director, and experience providing child care training through a child care resource and referral agency.

These three women provided numerous examples throughout the case discussions of theoretical thinking by explicitly proposing and evaluation hypotheses, tying case-specific details to relevant personal experience, and drawing conclusions that revealed an understanding of the complexity of the problems. Perhaps the virtual presence of these women who were well along in their own professional development and in their understanding of guidance and discipline principles contributed to an environment that, on the one hand, encouraged Jenine's own cognitively rich reflections and, on the other, inhibited Terri from joining in. Jenine provided little if any information in any of the data sources that would indicate her attitude toward her own knowledge level or that of the other group members, so

such a conclusion would be purely speculative. However, information about Terri lends some support to such a hypothesis.

Although there is no data that would indicate that Terri had anything but a positive attitude toward the other providers, Terri did provide a few clues to her confidence in her own understanding of the problems being discussed. Terri wrote in one brief note to the group: "I have read the other e-mails and agree with the group...I don't have any different suggestions or ideas that have not already been discussed" (message 21, case 1, group 2). In the private summaries, she was much less confident in the final summary than in the pre-discussion summary, stating in two of the three cases that she was baffled by the problem. When asked in the final survey whether she had been satisfied with her own level of participation, she stated, "No...not as much time to sit down and think situations thru [sic] as much as [I] thought. These situations took a lot of deep thought, I probably have not given past situations as much thought and brainstorming as I possible [sic] need to." As possible contradictory data, Terri also mentioned in the final survey that the Forum had occurred at an "extra busy time" for her.

But, overall, Terri's case seemed to suggest that the presence in the group of more knowledgeable and confident peers, while inhibiting less knowledgeable participants from being actively involved in the ongoing problem-solving discussion, nevertheless had a positive impact on the degree of knowledge that they appropriated from reading the discussion and on their evaluation of the experience as a whole. In Terri's words, "It just made me think things through a little more....You could tell the people who had really done that and you'd go, 'Wow!'" (phone survey).



The exploration of the individual change in knowledge experienced by the two extreme cases Jenine and Terri yielded interesting suggestions for further inquiry. In short, this study suggested possible relationships between three factors: the degree to which participants are integrated into the larger community of practice, the level of content knowledge that participants bring to the problem-solving discussion and their confidence in that knowledge, and the degree to which they appropriate the knowledge built during the discussion.

#### Implications for Practice:

##### The Family Child Care Forum as a Training Model

Although a majority of my effort went toward better understanding the process of knowledge building as it occurred among child care providers as they discussed challenging behavior problems in an online environment, a second, and equally important, intended outcome of this study was to evaluate the usefulness of this format of training for family child care providers. It was the need for high quality, effective, meaningful and accessible training for family child care providers that led me to propose this study in the first place, and it is to this aspect of the study that I return as I summarize our findings.

Three aspects of the Forum contributed to its uniqueness as a training model: a solid foundation of socio-constructivist learning theory, problem-based learning as an instructional strategy, and computer-mediated communication as the delivery mode. Aspects of the data gathered by three methods contributed to our conclusions about the appropriateness of each of these facets of the Forum.

### *Socio-constructivist Pedagogy*

Learning from within a socio-constructivist pedagogy was extremely appealing to the women in this study. All seventeen participants, when asked in the final survey what they liked about the training, cited the social interaction with others providers:

The thing I liked best was the way we worked off of other people's suggestions and experiences. I have been doing child care for six years and fortunately haven't had many problems with the children I care for. [I liked] working with providers that have been doing this for 28 years [who] have experienced a lot and have a lot of good suggestions. (Melissa)

I liked feeling more connected to other providers. Hearing their stories and views made me feel like I'm not the only one! (Patty)

I really enjoyed the interaction with the other providers from other parts of the state. Even though I wasn't able to fully participate, I feel I learned so much. (Gretchen)

Clearly, the participants thought the discussion-based format, in which they could draw from one another's experiences and knowledge, was a training format that they evaluated highly. Some seemed to benefit most from the sense of validation that they received when they discovered that their professional experiences, beliefs or values were shared by others. Other participants seemed to appreciate the mental stimulation provided by others' opinions and experiences, including the outside readings. In the final survey, participants were asked what

advice they would give to future participants. Several comments had to do with participating fully and engaging in the discussion:

Make sure you read others' messages and the resources – you are bound to learn something. Probably another point I would make is to participate more. Often times I would be thinking something but not willing to send it to the group because I felt I didn't know enough about [the] subject, then someone else would write a message similar to what I was thinking! Have confidence that your opinion will matter (I'm writing to myself here).

(Patty)

I think that all should feel free to give their point of view, to feel free to voice their disagreements as long as they are respectful of those they oppose. (Diana)

Some people came across to me as too perfect I guess. Not sure how to explain it though. Just be yourself is the best advice I would give anyone.

(Faye)

### *Problem-based Instructional Strategy*

The use of a problem-based instructional strategy proved very engaging for these child care providers, particularly because they were aware that the cases being discussed were real situations. The discussions seemed to toggle back and forth from theoretical thinking about the case as fitting a type of problem and very situated thinking about the case, expressing empathy for the provider and the child and sharing concern that the situation had a conclusion that would put their minds to rest. In fact, this latter concern was prevalent to such a degree, particularly in the

last case, that I asked the participants who had submitted the cases for discussion to send a message at the conclusion of the Forum letting everyone know how the situations had finally been resolved.

Although using real cases was very engaging for the participants, there were aspects of it that seemed to have negative consequences for some of the participants. For example, in the final case of Rachel, the provider had terminated the contract with the family, so the child was no longer in the provider's care. One participant wrote, "The only problem I had was when we got stumped on a case like 'Rachel,' I felt like I couldn't offer support or advice in the matter since the provider no longer provided care. When everyone ran out of suggestions then we were at a stalemate." For this participant, and possibly others, the knowledge that this was a real case seemed to inhibit them from thinking more theoretically about it. Once the participants were told that the problem had, in essence, already been solved by the provider through termination, the discussion tended to revolve around support for the provider's decision to terminate care rather than further evaluation of other solutions or theories about the behavior causes.

A second drawback of using real cases was reflected by a couple of participants who expressed frustration that they didn't have all the information they wanted about the situation. The one participant in the study who reported that she would not wish to participate again in a Forum expressed the greatest discomfort with not having enough information to solve the problem. In private communications with the facilitator and in the final questionnaire, Ellen expressed concern over the problem situations and mentioned how consuming her worry about the problems

became. Ironically, her advice to future participants was, "Don't lose sleep over this!!"

A third concern about using real problems related to the fact that the problem owner was, for at least one group, a fellow participant. Rhonda gave this advice to designers of future Forums, "It may be good to have real cases from providers outside the forum group that is corresponding with each other. This would allow the facilitator to edit any messages that may be too harsh for the provider with the concern." From Rhonda's comment, one might conclude that participants would be more willing to express thoughts and opinions that disagreed with or criticized the problem-owner if she were not a member of the group.

However, for half the participants with each case, the problem-owner was not a member of the group. The problem owner was in Group 1 for Case 2 and in Group 2 for both Case 1 and 3. No discernable difference was evident in the frequency of opposing statements between the group with the problem-owner and the group without for any of the case discussions, even though participants were aware of the presence or absence of the problem owner in their group. Nevertheless, the effect of having the problem-owner present during the discussion needs further study. In this study, for all three case, the problem-owner did not *actively* participate in the discussion of her own case except to provide further information half-way through in response to questions that had been raised by discussants in their early messages. Other patterns of participation may yield other results.

*Computer-mediated Communication*

Participants provided feedback in the final questionnaire, the phone survey, and in private messages reflecting their evaluation of the technological aspects of the Forum. Most of this feedback was very positive and reflected participants' appreciation for being able to access a learning opportunity so conveniently.

It works great with a home child care provider's schedule. If I had a free minute, I could log on to read and answer emails. (Jenine)

I was pleased at how easy it was to access the readings and case information. (Melissa)

I liked...doing it online. I mean, I like meeting with my friends, too, but I could do it at my own time. If I didn't go to bed till 1:30 and read those things [e-mails] from 1 to 1:30, it wasn't hurting anything, you know? I could do it when it was convenient for me. (Gretchen)

Negative comments varied considerably. Several participants commented on the requirement to send private message to the facilitator as well as a public message to the group, which they seemed to find annoying. However, this was not a technological issue, but rather a research design issue. Laura was the only participant to comment on the negative aspects of communicating online: "I did not like not being able to hear the other providers' voices. I usually mentally put a face on people that I cannot see...which I did for each provider. But without the voice it made it a little more difficult to think that I was actually a part of a group of other providers. " But then in a later comment, she stated, "I enjoyed the different style of

learning and discussion. I can learn to adjust to not seeing the faces and watching the body language. “

The benefits of online anonymity were identified by three participants. Cara mentioned that the social distance was actually a positive feature when discussing the confidential situations of real children and families. Both Isabel and Ann mentioned being able to be more open and honest with people who were virtual strangers.

...a lot of people gave their point of view – more so than what they would have in person. I've found that just talking with providers, especially in a group atmosphere, they don't want to talk as openly....So that was nice to get all the variety of people. (Ann)

A lot of the day care providers [that I talk to] know a lot of the people in town, you kinda gotta watch what you say. So if I was talking to somebody else that didn't live here...and didn't know what I was talking about, then maybe they would be a little bit more receptive to...giving their honest opinion. (Isabel)

A few relatively minor suggestions were made for improving the technological aspects of the Forum, none of which were mentioned by more than one participant. Overall, the comments related to the online aspect of the Forum were overwhelmingly positive.

General comments about the Forum provided indisputable evidence that participants found it to be a valuable model for training. All of the participants indicated that they would recommend it to other FCC providers (even Ellen, who

wasn't comfortable doing it again herself) and several wanted to know when the next Forum would be offered. From the designer/facilitator perspective, several aspects of the Forum ensured that it would be feasible for one person to manage. The use of very simple and familiar computer technology – an e-mail list and webpages on an existing website – made the Forum easy for both the users and the facilitator. The electronic forms used to collect pre- and post-Forum information from participants was very efficient and, judging by the lack of feedback to the contrary, easy for participants to use. Although a typical training would not require the amount of data collected for this study, nevertheless electronic forms would simplify the collection of data that would be necessary.

Two aspects of the facilitator's role could vary considerably in the amount of time and effort needed. The most time-intensive aspect of the facilitator's work for the Forum was choosing readings to accompany each problem case. Four to five readings and resources (see Appendix B-3a and b) were chosen for each case based on the issues that I predicted might be addressed by the participants. Most of the documents that were chosen were already in electronic format, so, once they were identified, linking to them from the Forum website was an easy task. Clearly, the level of familiarity that the facilitator has with the subject matter being discussed will affect the ease with which she/he would be able to locate additional resources.

The second variable affecting time and effort invested in facilitating this type of training would be the degree to which the facilitator chose to be involved in the discussions. In the Forum, I specified in the study's design that the facilitator would not be an active member of the discussion, but would scaffold the learning activity by



providing step-by step directions for the mechanics of participating, giving clear directions for each step in the problem solving discussion, and addressing any technical issues for individual participants. Overall, I did not become involved in the discussions themselves. Twice I made an exception and entered the discussion. The first time was to address the issue of confidentiality for the families being discussed, an issue raised by the problem-owner for the first case once the discussion had begun. The second time was during the second case discussion when one of the groups seemed to have lost momentum, in part because two of their members had experienced family emergencies that temporarily removed them from active participation. In this case, I shared a comment from the other group with the first group and asked for their thoughts on the opinion expressed by the other group's member. Although I read each message for both groups, the task of facilitating the discussions as they ensued was not demanding, and, in fact, proved quite enjoyable. However, more active participation by a facilitator would certainly increase the demand on time and effort.

In summary, my impression from a design/facilitator perspective and the feedback from participants both strongly indicate that this is a training format worth pursuing, refining, and expanding. Participants provided twenty different suggestions for topics appropriate for a Forum format, including more guidance and discipline, business practices, working with parents, and multi-age care. Five participants offered the opinion that any topic would be appropriate. As an interesting footnote to the study, many of the participants suggested that I maintain the e-mail list for them to use to maintain contact. The list was kept active and the former participants have

maintained their conversations since, talking most recently about contracts, paid vacations and holidays, and saying good-bye to a child who has been in care for several years.

### Summary

This study has provided useful information regarding the knowledge building process among family child care providers in online environments and the change in thinking that individual participants experienced as a result of the shared knowledge building process. An unanticipated but fruitful result of this study has been the development of the Degrees of Synthesis Model for the analysis of knowledge building. It has also provided several promising suggestions for further research, both for purposes of the refinement of the analysis model and to gain further understanding of variables that have an impact on the knowledge building process and participants' appropriation of that knowledge in their own thinking and practice.

I have also discovered a great deal about the feasibility of problem-based online training for family child care providers. Implementation of this model with other groups of providers and comparison studies would serve to test the generalizability of my findings and expand the understanding of ways in which this training model might be best utilized.

## APPENDIX A: COMMUNICATION WITH PARTICIPANTS

## A-1: PARTICIPANT RECRUITMENT ADVERTISEMENT

### **Available in September: FCC Training on the Internet!!!**

You have the exciting opportunity to be a part of a new project, the **Family Child Care Forum**, that offers child care training on the Internet. Here are some of the features that make the FCC Forum so unique:

**\* It's a new and different learning format!** In the Forum you will join with other FCC providers to discuss solutions to difficult behavior situations that are a part of everyday caregiving. You'll draw on your own expertise and the expertise of others to work out effective solutions to real situations. No lectures from experts, no trivial assignments – just providers like you working together to find effective answers for problems with challenging behavior from children.

**\* It's convenient!** If you have Internet access from a home computer, you can participate in the Forum. The Forum will take place over seven weeks, beginning on **Sept. 10** and ending **Oct. 28**. You can access and contribute to the discussion and problem-solving during nap time, after the kids have gone home, before bed or at three in the morning – it's up to you! Whenever you can find **three hours** during **each week**, you can be involved - it's at your convenience. Also, no special software is needed, just Internet access and e-mail. No special computer skills are needed; if you've visited websites on the Internet and used e-mail, you have all the skills you need!

**\* It meets the need for FCC training!** The Forum is specifically geared for family child care providers. It will satisfy DHS training requirements in the area of guidance and discipline and you will also be able to earn 2 CEUs from Iowa State University (approval pending). And because it's a pilot program – meaning that your input about the Forum will be used to improve it for future use – the Forum will be offered at **no cost** to participants (other than the fee for CEUs).

The FCC Forum is being offered as a pilot project of the Iowa State University Extension Service.

If you are interested in finding out more about the Family Child Care Forum, visit the FCC Forum website at <http://www.nncc.org/FCCForum/home.html> or contact me, Kathy Reschke, at [kreschke@iastate.edu](mailto:kreschke@iastate.edu) or (515) 294-5702. And if you know of other FCC providers who might be interested, too, please pass along the information. I hope you'll join us!

## A-2: ONLINE GENERAL INFORMATION



## *About the Family Child Care Forum*

So you want to know more about the Forum, eh? Great! Let me tell you the basics. In a nutshell, the Forum is a training for experienced family child care providers that deals with guidance and discipline issues. It will run over a seven week period, Sept. 10 - Oct. 28, entirely online. It uses a small group discussion format, so participation will be limited to 12 people.

Still interested and ready for more details? There are really two parts to the Forum:

- The Forum as a training activity
  - The Forum as a study of online learning.
- 

### **The Forum as child care training:**

- *Meets your training needs*
- *Builds on your own experiences*
- *Convenient*
- *Focuses on real discipline situations*
- *Free and fun*
- *Connects you to other providers*

#### The FCC Forum is designed exclusively for family child care providers

- - Between eight and twelve providers will participate in the Forum.
  - The Forum will be especially for those who have worked in family child care at least two years and are currently caring for at least one child between the ages of two and five.
  - You'll share your own experiences and expertise with one another and learn from each other. As you discuss your perspectives and those of other FCC providers as well as other ECE professionals, you'll gain a better understanding of challenging behaviors and how to deal with them.

#### The FCC Forum will take place entirely online.

- - No face-to-face meetings are required so you can complete the training entirely at home.
  - You will need access to the Internet, but no other special software programs will be needed.
  - All of the materials you will need will be entirely online so you won't need to purchase any books or other materials.

- You can expect to spend a minimum of three hours a week participating in reading others' comments, posting your own thoughts, and reading other related material online. The Forum will last seven weeks, so that's a total of 21 hours of involvement over about two months.
- To get the most out of the discussions, it will work best if you log on to the Forum at least three times over the course of each week for a short amount of time each visit, rather than only once or twice for a longer time.
- Because the training is based entirely on our discussions about challenging behaviors, it is necessary for you to participate in those discussions in order to receive training credits.
- You can log on to the Forum any time, day or night, whenever it is convenient for you. The messages will remain posted for the length of the Forum so you can read and reread the conversation.

● The FCC Forum will focus on tough behavior problems that FCC providers have encountered

- Before the Forum begins, you will be asked to send in a description of a challenging behavior situation that you have faced from a preschool-aged child. Three of these will be chosen for our discussions.
- Every two weeks a new challenging situation will be introduced for us to talk about. By talking through all of the different sides of the situation, finding more information, suggesting answers, and evaluating those answers together, we will arrive at the best approach to dealing with similar problems in the future.
- The challenging situations and the final suggestions for dealing with them will be posted on the National Network for Child Care website ([www.nncc.org](http://www.nncc.org)) in a special feature called "Advice from the Front".

● The Forum will help you meet your training needs.

- This training will satisfy 21 hours of training necessary to meet Iowa DHS requirements.
- The Forum also satisfies 21 hours of CDA training in the areas of guidance and professionalism.
- This training will also earn 2 Continuing Education Credits (CEUs) from Iowa State University. If you choose to receive CEU's, you will need to include a \$10 fee with your request to ISU Extended and Continuing Education after the training is finished.

● The FCC Forum is based on a learning strategy called "problem-based" learning

- *Real -life situations:* Problem-based learning is a teaching strategy where a group of learners is given a problem from real life and guided through the steps necessary to arrive at a workable solution. It's a way of learning that has been used in many professional fields, including medicine, law and business.
- *How it works:* The Forum will start with a short "get acquainted" phase, followed by the introduction of a description of a challenging behavior situation. Over a two-week period, the participants will read and send messages on the Forum as they identify possible causes and discuss different solutions, finally arriving at the best strategy for dealing with the behavior. Then another situation will be introduced and the cycle will begin

again. A third, and final, situation will be introduced, followed by a wrap-up time. The Forum will last a total of **seven weeks**.

- *Your perspective*: Besides sending messages to the group as part of the problem-solving discussion, you will also be asked to send private messages to me, the facilitator, giving me your personal perspective of the problem at various times.
- *Others' ideas*: Part of figuring out how to deal with the challenging behavior situations will also involve reading the opinions of others in the early childhood field as they relate to the specific problems we are discussing. These readings will be posted on the Forum website for easy access.

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## The Forum as a study of online learning

As a Family Child Care provider, you know how difficult it is to find good training that is convenient for you to attend. Using the Internet to deliver training seems to be a good idea just waiting to be tried! But just throwing anything up on a website is not the same as really **good** training - training that is connected to your work, training that taps into all the things you already know and helps you build on it, training that connects you to other providers and allows you to learn from each other rather than from a "talking head."

That's the kind of training we plan to offer in the FCC Forum. But because it's a new idea, we need to study what happens during the discussions to understand how this type of learning occurs online.

We also need to find out from you what the experience was like:

- What worked well?
- What could have been improved?
- Is it something you would like to see more of?
- Who would benefit most from training like this?
- Was learning on line a good experience?
- Was learning by discussing problems with others a good experience?

The purpose of studying the Forum is to find out more about what happens when people learn through discussion, especially when that discussion happens on computers, and what learners think and feel about learning that way. With that information, those who design and offer training for childcare providers can decide whether online learning of this type should be tried on a bigger scale. And they can learn from your comments how to make it better.

So what does that mean for you as a participant?

- You'll be asked more questions than you would at a regular training.
  - I'll ask you specific questions in the registration survey about things like your FCC business, your training experiences, your involvement with other providers, and some personal characteristics. After the Forum, your name will be removed from all the information that you give me so that the information will be confidential. The answers to all the questions from each of the participants will be combined and used to describe the group of people that participate. That way, if another trainer would like to try this training in their part of the world, they can see how similar our group might be to the providers that they want to reach. But the specific information you give me won't be shared with the other participants (if you would like to tell them about yourself during the Forum, that will be up to you) or with any one else.
  - I'll also ask you some questions at the end of the Forum about what the experience was like for you. Your answers will help me and others know how to improve the training if we choose to offer it again. [It will be a lot like the evaluations you are often asked to fill out at the end of training workshops.]
  - I will also arrange for a phone interview three weeks after the Forum is finished. I'll have a few final questions to ask about the training and the learning that you may have gained.
  - When the study is written and made public, all of the personal information that the participants gave will be talked about in terms of the whole group - no one will be described individually in a way in which someone could identify you. When I talk in the study's report about certain participants, I will use substitute names instead of real names to ensure confidentiality.

● Your feedback and participation in each part of the Forum is **much** more important than in a typical training! As a participant in the Forum, you'll have the unique privilege of being a key player in shaping a new kind of child care training - pretty awesome!

● Because this is part of a study and is a "trial run" of a new type of training, the Forum will be offered to you free of charge\*. Not only will it be free, but you will also receive some free resource materials when you've finished the last interview. It's another way of expressing how valuable the participation of each person is to the Forum and to the study and how much we appreciate it.

\*If you choose to apply for CEU's, you will be responsible for sending a \$10 fee to ISU Extended and Continuing Education at the end of the training.

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I'm sure, even with all that information, there are still some questions I haven't answered. Please check out the [FAQ](#) (Frequently Asked Questions) section for more answers. If you still have questions, PLEASE feel free to e-mail or call me. I'll be glad to help.

After you've read all you need to know about the Forum, it'll be time to decide whether you'd like to be a part of this adventure. If you decide **yes**, [CLICK HERE](#) to find out how to register.

I'm looking forward to hearing from you soon!

Kathy

E-mail: [kreschke@iastate.edu](mailto:kreschke@iastate.edu)

Phone: 515-294-5702

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## A-3: ONLINE INFORMATION: FREQUENTLY ASKED QUESTIONS



## *Frequently Asked Questions*

- When will the Forum take place?
- Who can participate?
- Who is behind the Forum?
- Is there a teacher?
- Will I get training credit for participating?
- How much of a time commitment is the Forum?
- Will there be other Forums?
- What if I have technical problems? Will there be assistance available?
- Will there be tests or quizzes?
- What if I don't finish the Forum?

### • **When will the Forum take place?**

The actual Forum will start on Sept. 10 and go through October 28. A few days before we meet online on the 10th, you will be able visit the Forum website and get acquainted with all the features and parts of it and ask any questions about the site.

I'll be in contact with you before the Forum starts, taking care of some registration business. I'll also ask you to fill out an online questionnaire before the Forum starts. Then a couple weeks after the Forum is finished, I'll contact you by phone and ask you a few final questions. Then I'll send you your certificate of training, the form for receiving CEUs, and a thank you gift for

participating.

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### • **Who is behind the Forum?**

The FCC Forum is a project that is designed by me and offered through Iowa State University Extension. I'm Kathy Reschke and I work with ISU Extension and am also a graduate student. I worked with preschool-age children and their families in center-based programs for many years before coming back to school. The need for high quality training experiences for FCC home providers and center staff is what brought me back to school and what I would like to spend the rest of my professional life working on. I have a masters degree in early childhood education and am currently working towards my doctorate at Iowa State University, also in ECE.

In my work with Extension, I manage the website of the National Network for Child Care ([www.nncc.org](http://www.nncc.org)) and manage a listserv discussion group called Kidcare for those who would like to talk with others in the field about early childhood issues (visit [this page](#) to find out more about Kidcare). I also create curriculum materials for providers and facilitate training and conference workshops (in fact, you may have met me at one!).

The Forum will be the basis for the study that will help me to earn my doctorate. All of the plans and designs for the Forum have had to pass through a committee of ISU faculty for approval. So you can rest assured that the Forum has the stamp of approval of ISU and ISU Extension.

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### • **Is there a teacher?**

The short answer is no, there is no teacher - at least not in the way we usually think of teachers. The Forum is based on the belief that the best learning happens when learners tackle a real-life problem, build on what they already know, explore the other sources of information, and work together with other learners to find out what they need to know to come up with the best solution. A facilitator helps guide the learners through the process, but it's the learners who are responsible for finding out new information and applying it to the problem. It's a much different concept of learning than the idea that an expert/teacher has the knowledge and the learners passively receive it.

It's an active learning model that we've believed to be true for young children

for a long time. Many in adult education are now coming to understand that those same principles of hands-on, social, learner-driven, discovery learning are true for adults, too.

But that doesn't mean there won't be any structure! I'll be acting as the facilitator for the training and will have a role very similar to your role with the children that you in your program. I will provide the environment, tools and support that you need in order to pursue your own learning.

My responsibilities include:

- being available to answer any of your questions, before, during and after the Forum, publicly or privately;
- helping everyone to feel comfortable in the online environment;
- providing the structure for the discussions and giving suggested questions to address as a group;
- letting you know what your responsibilities are as a participant;
- addressing any problems that come up before, during, or after the Forum;
- providing you with all the information that you need to enjoy and learn as a participant;
- creating and maintaining the actual Forum website where the discussions will take place, the problem cases will be posted, the miscellaneous information about the Forum will be, etc.

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#### • **Will I get training credit for participating?**

Yes. At the end of the Forum, when you've completed the final phone interview, I will mail you a certificate that indicates that you have earned 21 hours of training in guidance and professionalism. This will meet the Department of Human Services requirements for training in these areas. This training can also be applied toward a Child Development Associate (CDA) credential.

If you choose to, you may also earn two Continuing Education Units from Iowa State University. If you are interested in receiving CEUs, I will provide you with the form that you will need to send in to ISU Continuing Education. You will also be responsible for including the \$10 fee for CEUs.

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## • How much of a time commitment is the Forum?

The Forum itself will require a minimum of three hours per week during the discussion time, which runs seven weeks. It will be best if you plan to spread that time out throughout the week rather than try to play catch-up once a week. For the discussion to work well, all the participants will need to be actively involved on a fairly frequent basis. (Actually, once you get involved, I don't think you'll be able to stay away from the conversation for more than a day or two at a time!!)

One nice part of this computer discussion will be that all the participants won't have to be on the computer at the same time. You can log on after the kids have gone to bed and read what others have written and add your comments. Or, if it works better for you, you can log on during nap time, or before kids arrive in the morning, or after dinner - whatever's most convenient for you!

Besides the actual discussions on the Forum, you'll also be asked to complete a questionnaire before hand, which will take about 20 to 30 minutes, and a final questionnaire at the end, which may take 20 to 30 minutes. Then, about three weeks after the Forum is finished, I'll make arrangements to talk with you by phone to get more feedback on the Forum as a training experience. That interview should take about 20 minutes (depending on how much you have to say!).

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## • Will there be other Forums?

What if the forum already has enough participants? Or what if you are interested, but aren't available for these dates?

This is a pilot program - a sort of "test run" of a new training format. One of the goals of the Forum is to see how well this type of training works (that's why your input on the evaluations at the end is SO important!). If the Forum goes well or only needs a few adjustments, there may be more Forums in the future (I hope so!!). But at this point, it's too early to say.

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## • Who can participate?

The Forum will be made up of a group of 8-12 people. In order to be a participant, you need to:

- have been a family child care provider for at least two years;
- have a computer with Internet access in your home;
- have at least one child age two to five currently in your program;
- consent to having your participation used as a part of a study of online learning;
- be willing to complete all of the tasks that are part of the Forum.

[By the way, if you know any other FCC providers who you think might be interested in being part of the Forum, show them this website and have them contact me (kreschke@iastate.edu or 515-294-5702).]

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#### **What if I have technical problems? Will there be assistance available?**

Hopefully, you won't, but computers have a knack for starting trouble when you least want or need it! Contact me with any problems. You will have both my e-mail address and office phone number. During the Forum, I will be in the office 8-4 during the day and will also check e-mail and phone messages in the evenings. I will also check both e-mail and phone messages on Saturdays and Sundays (oh well, I didn't have much of a life to start with!!).

I will be able to help with relatively simple technical problems and with all questions having to do with non-technical stuff (assignments, etc.). I also have computer technical support available to me on campus for the trickier problems, but the help may not be available immediately. I will certainly do everything I can to help smooth out any bumps, however.

A few days before the Forum starts, you can visit the Forum website and take some time to get familiar with it. That will be a good time to let me know if there are things that are confusing, difficult, or not working correctly.

There will also be an area on the website where participants can post messages about technical and site navigation problems and how they dealt with them - a computer-learning support group, if you will!

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### Will there be tests or quizzes?

There are no tests, quizzes or other forms of traditional assessment. With guidance and discipline, there are no easy, multiple-choice type answers - that's why it's such a challenging part of caregiving! What I hope we discover in our discussions are some guiding principles that will help us in making decisions about challenging behavior in the future. But that's not the kind of knowledge that can be easily measured by quizzes and tests. The messages you post, the comments you share with me at the end of the Forum, and your answers to questions in the follow-up phone interview (like "What did you gain from the Forum") will tell me whether or not it was a valuable learning experience for you --- much more so than tests or quizzes.

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### What if I don't finish the Forum?

I hope you'll continue through the entire Forum. If a situation arises that causes you to consider dropping out, **please** contact me so that we can try to find a solution that would allow you to remain with the group.

But if, for some reason, you still choose to drop out of the Forum, three things will happen:

- 1) You'll be missed!
- 2) I'll contact you and ask you a few [friendly] questions about why you're not continuing, in case it involves something that I need to do to improve the Forum.
- 3) Unfortunately, you won't receive the training credits. In order to receive training credits (and CEUs, if you choose), you must complete the entire Forum activity, including the closing interview.

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Hope that answered all your questions. If not, jot me an e-mail or give me a call and I'll be glad to talk with you.

If you've decided that you'd like to participate in the FCC Forum (and I **hope** you have!), [CLICK HERE](#) to find out how to register.

#### A-4: LETTER OF CONSENT

Hi!

I'm so glad you're interested in being a part of the Family Child Care Forum project! I think it will be an interesting and fun time for all of us as we get to know each other and learn together. If you haven't already done so, be sure and look through all the information on the Forum website, <http://www.nncc.org/FCCForum/home.html>.

As mentioned on the website, not only is the Forum a training opportunity for you, it's also a study of online learning. As a part of this study, I'll need your permission to use information that you share during the Forum. In particular, the study will look at the discussions that take place online, individual assignments, the answers that participants give to the online questionnaires, and the answers that people give to the final phone interviews. All of these sources of information will help me to find out what this online learning experience is like for the people who participate. The things that I learn from you will help me and others who want to develop good online training in the future.

Here are a few important things to remember about your participation in this study:

- At the end of the Forum, I will take your name off of all the information that you have provided and will replace it with an alias.
- When the study is written and made public, all of this information will be combined to describe the whole group - no one will be described individually in a way in which someone could identify you.
- When I talk in the report of the study about individual participants' comments or participation, I will use the alias names instead of real names to ensure confidentiality.
- During the Forum, you can expect to spend around three hours per week for each of seven weeks participating in the discussion and other learning activities. This will total a minimum of 21 hours over seven weeks' time.
- In addition, I'll ask you for individual information and feedback at three separate times: a registration questionnaire completed before the Forum begins, taking 10-25 minutes to complete; a final questionnaire at the end of the Forum, taking 5-15 minutes to complete; and a phone interview approximately three weeks later, taking 5-15 minutes to complete.
- If you wish to receive Continuing Education Units, you will be sent a registration card. You will be responsible for mailing the card and the \$10 fee to the office of



### Extended and Continuing Education.

- With the exception of the optional CEU fee, the training that you receive will be free. Completion of this training satisfies both DHS and CDA training requirements. A certificate of completion will be mailed to you at the end of the Forum for your own records. Upon completion of the final phone interview, as an expression of my appreciation for your participation, you will be mailed complimentary child care curriculum materials developed by ISU Extension, with a value not exceeding \$10.

If you agree to be a participant in the Forum study, please add your signature to the statement below and return this **whole page** in the stamped, addressed envelope that came with it. I have also enclosed a copy for you to keep for your own records. Of course, if you have any questions, please feel free to call or e-mail me.

I look forward to hearing from you!

Kathy Reschke  
Graduate Teaching Assistant  
Family Child Care Forum project director  
Ph: 515-294-5702  
E-mail: kreschke@iastate.edu

Susan M. Hegland, PhD  
Associate Professor,  
Human Development & Family  
Studies  
Ph: 515-294-4616  
E-mail: shegland@iastate.edu

I have read and understand the information about the study of the Family Child Care Forum, both in this letter and on the Forum website, and agree to have the information I provide included in the study.

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(your signature)

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(date)

## A-5: MAILED INFORMATION



## *General Information*

Here is some information that I thought might be helpful for you to have in print form. It includes:

- the address for the Forum website
- information on how to get help if you run into a problem
- the calendar for the Forum
- a brief list of your responsibilities (i.e. "assignments") during the Forum discussion
- directions for using the FCC Forum e-mail listserv
- directions for downloading Adobe Acrobat - the **free** software that will allow you to open and print the readings and resources for the discussion
- a reminder about "netiquette" - etiquette for online communication

### **The Family Child Care Forum Website**

You can find the FCC Forum website at <http://www.nncc.org/FCCForum/home2.html>

On the Forum website, you will find four areas:

- ◆ **The Case:** This is where the challenging behavior situation will be posted. It will remain available throughout the discussion so that you can refer back to it when necessary;
- ◆ **What's New:** This is where I will keep a running list of the current questions up for discussion and the most recent assignment. I will initially send these questions and assignments out through the Forum mailing list, but the information will also be available on the webpage for quick reference.
- ◆ **Readings and Resources:** This is where materials will be posted that will provide additional information that may be helpful in suggesting a solution for the behavior problem. These materials will not be available until several days **after** we have made some beginning assessments of the situation. These resources will be posted in PDF format so that you can easily print them out to read and/or to keep for your own files, if you wish. You will need the Adobe Acrobat Reader software to open PDF files. Instructions for downloading this free software are given below.
- ◆ **Help!** This is where you can find my e-mail address and phone numbers in case you are having problems and need to contact me. Also, if there are technical problems or misunderstandings about assignments that I think others may also have, I will post them and my responses in this area - a sort of FAQ section for participating in the Forum!

### **Help**

Obviously, the "Help" area of the website won't be much help if you can't get on the Internet for some reason! So here's the info you need to contact me:

**E-mail:** [kreschke@iastate.edu](mailto:kreschke@iastate.edu)

**Work phone:** 1-515-294-5702 (9:30 a.m. - 4:00 p.m.; leave a message after hours)

**Home phone:** (In case of emergency) 1-515-292-5813

### The Forum Calendar and Your Responsibilities

This is the proposed calendar for our Forum discussions. **Please don't let it intimidate you!** During the Forum, on or around each of the dates listed below, I will send an e-mail note to the Forum that will let everyone know the direction we're going (i.e. the activity and task listed below). So, for those of you who are more spontaneous and will be perfectly happy to wait for those e-mail notes, just stick this in a drawer and ignore it. But for those of you who like more structure and like to know ahead of time what will be happening, keep it for reference. Just be aware that, if we find during the discussion that we need to modify it, we certainly will.

DATE	ACTIVITY	YOUR TASK
Sept. 9, 10, or 11	Orientation and Introductions	Your first post to the Forum list will be a short introduction of yourself. You may tell us whatever you like. If you would like to reply to others' messages, too, that's perfectly okay. This is the icebreaker, getting-to-know-you part that helps us to get an idea of who we'll be talking to and learning with over the next several weeks. It's also a good way of getting familiar with using the e-mail listserv.
Sept. 12 (Tuesday)	Posting of the first case of challenging behavior	Please send me a <b>private</b> e-mail in which you reflect on your understanding of the situation and what advice you would give the provider in handling it.
Sept. 12-14	Initial assessment	During this period, post to the Forum your initial thoughts about what is going on in this situation.
Sept. 14-15	More information	If it hasn't come up already, add to the discussion your thoughts about what other information needs to be gathered in order to come up with a good strategy for handling this problem.
Sept. 15	Posting of resources and readings	Access the readings and resources from the website and read them (you'll probably want to print them).
Sept. 15-17	Evaluation and application of readings	Add to the discussion your thoughts about how the information in the readings and resources might be helpful to the provider or helpful to the group in suggesting solutions
Sept. 17-20	Brainstorm solutions and evaluate them.	Add your suggestions to the group as we brainstorm specific ideas for the provider to try. At this stage, we are throwing out suggestions and discussing the pros and cons of each. It would be good if you could post at least twice during these four days.
Sept. 20-23	Consensus about solution.	During this part of the discussion, the goal is to arrive at agreement about the advice that you would give to the provider.
Sept. 24-25	Summary	Send me another <b>private</b> e-mail in which you again tell me your assessment of the situation and the advice that you would give the provider.
Sept. 26	Posting of the second case	We'll start again with a <b>private</b> e-mail, as in the first case.
Sept. 26-27	Initial assessment	During this period, post to the other members

		your initial thoughts about what is going on in this situation.
<b>Sept. 27-28</b>	More information	Add to the discussion your thoughts about what other information needs to be gathered.
<b>Sept. 28</b>	Posting of resources and readings	Access the readings and resources and read them.
<b>Sept. 28-30</b>	Evaluation and application of readings	Add to the discussion your thoughts about the usefulness of the information in the readings and resources.
<b>Sept. 30-Oct. 3</b>	Brainstorm solutions and evaluate them	Add your suggestions to the group as we brainstorm specific ideas for the provider to try.
<b>Oct. 3-7</b>	Consensus about solution.	During this part of the discussion, the goal is to arrive at agreement about the advice that you would give to the provider.
<b>Oct. 8-9</b>	Summary	Send me another <b>private</b> e-mail in which you again tell me your assessment of the situation and the advice that you would give the provider.
<b>Oct. 10</b>	Posting of the third case	Please send me a <b>private</b> e-mail in which you reflect on your understanding of the situation and what advice you would give the provider in handling it.
<b>Oct. 10-11</b>	Initial assessment	During this period, post to the other members your initial thoughts about what is going on in this situation.
<b>Oct. 11-12</b>	More information	Add to the discussion your thoughts about what other information needs to be gathered.
<b>Oct. 12</b>	Posting of resources and readings	Access the readings and resources and read them.
<b>Oct. 12-14</b>	Evaluation and application of readings	Add to the discussion your thoughts about the usefulness of the information in the readings and resources.
<b>Oct. 14-17</b>	Brainstorm solutions and evaluate them	Add your suggestions to the group as we brainstorm specific ideas for the provider to try.
<b>Oct. 17-21</b>	Consensus about solution.	During this part of the discussion, the goal is to arrive at agreement about the advice that you would give to the provider.
<b>Oct. 22-23</b>	Summary	Send me another <b>private</b> e-mail in which you again tell me your assessment of the situation and the advice that you would give the provider.
<b>Oct. 24-26</b>	Wrap-up	Post any final comments, farewells, etc. to the group.
<b>Oct. 26-29</b>	Post-Forum questionnaire	I will post an online questionnaire on the website that will give you an opportunity to evaluate the Forum as a learning experience.
<b>Nov. 19-Dec. 3</b>	Final phone interview	I'll arrange to talk with you by phone sometime during these two weeks about any impact that you think the Forum has had for you professionally.

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### **Sending e-mail to the FCC Forum:**

For the FCC Forum discussions, we will be using an e-mail listserv. If you are not familiar with listservs, they are a special type of e-mail communication. Here are some of the distinctive features:

- A member of the group can post an e-mail message that automatically goes to all the other members.
- When you reply to a message that comes to you through the listserv, it automatically goes to all the list members. If you want a message to go **only** to the person who sent it (called a "private" message or "posting off-list"), you will need to change the "recipient" field (the place where you type "To: ") from the list address to the private e-mail address of the person you're sending it to.

I have already created the FCC Forum mailing list, and have included your e-mail address.

**Important: If your e-mail address changes at any time during the Forum, send me your new address IMMEDIATELY so that you can continue receiving and sending messages.**

To post a message to the Forum, send it to the Forum list at [fccforum2@iastate.edu](mailto:fccforum2@iastate.edu). You'll notice on the schedule, there are some assignments that I want you to send to **me** rather than the list. For these assignments, please send your messages to [kreschke@iastate.edu](mailto:kreschke@iastate.edu).

To make keeping track of the Forum messages a bit easier, you may want to consider creating a separate mailbox in your e-mail program where you can store all of the messages together. Most e-mail programs also allow you to "filter" your mail automatically into a designated mailbox. In this case, you could set it so that any time a message came addressed to "[fccforum2@iastate.edu](mailto:fccforum2@iastate.edu)", it would automatically save it to the mailbox you have created just for Forum mail. But you may not want to mess with that. It will also work just fine if you treat Forum mail like every other piece of e-mail - whatever will work best for you!!

Some suggestions for making it easier to manage the Forum messages and follow the discussions:

- When you want to send a message in response to a question I've posed or the assignment I've given, in the subject line, write a few words that describe your message.
  - If you are replying to someone else's message and are keeping to the same topic, hit the reply button on your e-mail program and don't change the subject line.
  - However, if you ARE changing topics, please change the subject line to reflect what your message is about.
  - If you have a message that you think is important to send to the whole group, but is not about the discussion topic, please write "Off-topic" and then a descriptive word or phrase in the subject line.
  - If you have a technical problem, especially at the beginning of the Forum, feel free to post it to the rest of the group through the list. Others may have had similar problems and have suggestions or want to know the answer that you get from me. If you do post a message that is asking for technical help or that is addressing a technical problem, please put "Tech Problem" in the subject line so we can distinguish these messages from the case discussion messages.
  - There are a few words that the listserv administration software program is sensitive to. These words are recognized by the program and result in the message being sent only to me rather than to the whole list. The most problematic word for us will be "help" - DON'T use "help" in the subject line or the system will assume you are having technical problems and will bounce the message to me.
-

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### Downloading Adobe Acrobat Reader:

If you don't yet have the Adobe Acrobat Reader software on your computer, you will need to download it in order to be able to read and print off the readings and resources for each case. Fortunately, Adobe provides the software for free, it doesn't take much memory, and it's fairly easy to download.

For directions on downloading and installing Acrobat Reader, go to this page:  
<http://www.exnet.iastate.edu/Software/Acrobat/PDFFiles.html>

Once you've downloaded the software, you'll want to try opening a PDF file. Open up your web browser (Netscape or Explorer) and type in the following address as a test run:  
<http://www.exnet.iastate.edu/Publications/PM1529F.pdf>. A window may open asking you what application you want to open the file with. Select "Adobe Acrobat Reader" - hopefully it's one of the choices!. A second window may then open up to ask you where you want to save the file. Put it wherever you can easily find it (I have a special folder that I've created called FCC Forum resources). You should then be able to open it. If the document opens automatically, without asking you where to save it, then when you close it, you'll want to find where the document is located on your computer (I have a Mac and mine automatically places it on the desktop). You may want to move it to a special folder that you've created just for FCC Forum files.

I would suggest that you download Acrobat as soon as you can so that we can work out any problems you might have and so that you can try it out.

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### Some miscellaneous thoughts....

- Because the Forum will take place over a period of several weeks, there may very well be an occasion when you won't be available to participate as you normally would. It may be that you have a few days where you are planning to be away or you may have an unexpected situation come up that keeps you from participating for several days. Whatever the case, if for some reason you will be unavailable to participate in the Forum for more than two or three days, please let me know in a private e-mail or phone call. We'll talk about how best to accommodate you.
- If at any time you don't receive e-mail from the Forum for more than a day, let me know immediately - there may be a technical problem.
- If at any time you feel as though your expectations are not being met or that a situation has developed within the Forum that you are feeling uncomfortable with, please let me know early enough that we can try to work out a solution together. I'm open to discussing problems, suggestions, comments, criticisms and differing viewpoints with you. But I need to know about them first!
- One more reminder about sending e-mail. For messages that you intend to go to the whole group, use the Forum address: [fccforum2@iastate.edu](mailto:fccforum2@iastate.edu). For messages that you intend to come only to me, use my address: [kreschke@iastate.edu](mailto:kreschke@iastate.edu).

## A-6: INITIAL MESSAGE TO GROUPS REGARDING FIRST ASSIGNMENT

*September 8, 2000*

Hi all!

We're finally ready to get the ball rolling with the Family Child Care Forum - woohoo! I'm really looking forward to it - I hope you are, too. I trust you received the information that I sent you in the mail (if you haven't gotten it by tomorrow, please let me know and I'll send it to you electronically). I know of at least one person who has been playing around with Adobe Acrobat, trying to open a PDF file. If you have problems, please let me know and I'll see what I can do. I won't be posting the readings and resources for the first case until later in the week, so we have some time to work out the kinks.

On to your first task:

Let's all get to know each other by posting an introduction to the Forum. You have the next three days to compose a short bio about yourself and your child care program - whatever you'd like to share. Please also feel free to respond to others' posts as you read their introductions. Think of it as the initial introduction conversations at a workshop, an informal get-together or a party. We'll be an online community for the next seven weeks, so let's relax and chat for a bit before we get down to serious discussion.

I'll start. I live in Ames and, although I'm not currently caring for children, I've worked with kids for the better part of 13 years, most of that in center-based care and most of that in the Chicago area. Three and four-year-olds are the ones I enjoy working with the most - I love the way they think (and the hugs are nice, too!).

A desire to support early care and education professionals as they work on improving their own practice and attaining professional goals is what led me back to school. So here I am at ISU, working toward a graduate degree in early childhood education.

I stumbled on computer technology quite by accident, but have become very interested in how it can be used to help ECE folks (like you!) in their professional development. It can be a very useful tool and I'd like to find ways of using it to raise the quality of child care. But because the field of computers and online learning is relatively new to me, it's been very challenging and a little scary - it's an exciting road to be traveling down and I'm anxious to see where it will take me. But I do have to say, I MISS being with the kids!! Maybe when this Forum is over, I'll find that I need to gather more information from you that I can only get by spending a day with you and your kids = :-D

Let's see, maybe some other personal stats? I'm 42, divorced, no kids (but some awesome nieces and nephews - like the cutie-pie whose picture is on the homepage of the Forum website!!). Things I like: sci-fi/fantasy reading (like Lord of the Rings), trying new recipes, the outdoors, writing (except letters - yuck!), most kinds of music, interesting ethnic restaurants (I REALLY miss Chicago's restaurant selection - but not the traffic!), live theater (just went to Minneapolis last weekend to the Chanhassen dinner theater and saw "Oklahoma" - what a great time!!), traveling, reading good children's books to kids, chocolate.

Well that's probably enough for now. Your turn...

Kathy



## A-7: MESSAGES TO GROUPS DURING CASE 1

*Message 1: September 12, 2000*

Hi everyone,

Thanks for posting the comments about yourself. It's been fun reading about all of you - I hope you've enjoyed it, too. There's an awful lot of experience and dedication to children represented here - should make for some GREAT exchanges of ideas!

Now that we're "warmed up" a bit, we're ready to tackle our first case of challenging behavior.

"The Case of Kim" has been posted on the FCC Forum website. If you'll go to the homepage at <http://www.nncc.org/FCCForum/home2.html> and click on "What's New," you'll find the information that you need.

If you have any questions, let me know.

Kathy

*Message 2: September 13, 2000*

At 10:12 PM -0500 9/12/00, XXXX wrote:

"There are so many questions Kathy, that I would like to ask yet before I really draw a good understanding of this situation. Are we able to ask more questions concerning this case, or do we just make a [sic] evaluation from what you gave us? "

I'll respond to the group because this is a question you may all have.

**In your initial message to me**, write whatever gives me the best picture of your initial thought processes. That **may** include comments about what you do know as well as thoughts about what you don't know. If you think there is information that would be important to find out and that would affect the way you would deal with the situation, and that is an important part of your thought processes when solving this problem, then include them. If you have a pretty good idea of what's going on based on the information in the description, then that's what I'd like you to send me.

Once you've started to read other people's comments, they may raise questions you hadn't thought of. Don't think of that as a negative thing because you didn't think of it first - think of it as one of the benefits of sharing ideas with others! This isn't a competition - it's a collaboration :-)

**In your discussion with others**, raise all the questions you like. XXXXX, the provider who submitted this situation is in the other Forum group (I did mention that

there were enough participants that I had to divide the Forum into two groups, didn't I?). I'll be glad to forward questions to her (within reason - she's a busy provider, just like each of you!!) and forward her answers on to all of you. I don't want to overwhelm her, so some things you may just have to speculate about or discuss what difference the answer would make on your actions if you **did** know.

So decide what things are most important to know more about (BTW - can you do this as a group? now **there's** a challenge for electronic communication!!!) and we'll send them on to XXXXX. Then the whole group can have the benefit of "drawing a good understanding of this situation" collaboratively! \*o/\* go team! \*o/\* (those are cheerleaders - aren't they cute?!)

Kathy

BTW - for those of you who haven't already picked up e-mail "slang" BTW stands for By The Way. Isn't your life enriched now? ;-)

*Message 3: September 15, 2000*

Hi everyone!

Hope you're enjoying this cooler weather - great for sleeping, isn't it?!

I've posted the readings and resources on the cleverly named "Readings and Resources" page of the website. [For those of you who haven't bookmarked it yet, the address is <http://www.nncc.org/FCCForum/home2.html> ] Just follow the directions on the page - it should explain everything you need to know.

I'll be in Des Moines at a meeting all day today (I don't suppose I could talk them into an outdoor playtime somewhere in the middle....) so, if you have problems or questions, e-mail me and I'll try to get back to you either this evening sometime or tomorrow morning. Or, you can also ask the group, if you think it's something someone else can help with - as you've probably figured out by now, I'm big on learning from one another :-)

Have a great day!  
Kathy

*Message 4: September 19, 2000*

XXXXX, Kim's caregiver, sent me another message with information about strategies that she either has tried or is currently trying. Now that we're into the part of the discussion where we are evaluating solutions and trying to identify the best course of

action to take, I thought it would be helpful if you could read and respond to the things she's tried/trying.

Here's her message:

[Provider's message]

*Message 5: September 21, 2000*

Just a reminder: we have about four days left to discuss the case of Kim. During these four days, here's what we'd like to do:

1) If you haven't yet posted a message to the group giving your ideas about possible strategies for XXXX to try (either your own suggestions or comments about the suggestions others have made or both), especially in light of the additional information that XXXX sent, please do so.

2) Our final goal is to narrow down the suggestions so that we can give XXXX a "do-able" plan from the group. Let's try to finish this up by Sunday night, if we can.

Thanks!  
Kathy

*Message 6: September 24, 2000*

Hi all!

The time has come for us to wrap up our discussion of Kim. The messages that have been posted certainly represent a lot of time spent thinking through this tough situation! I think it makes very clear the reason that the topic of guidance and discipline is always at the top of the list of most requested training topics - understanding and changing children's behavior can be incredibly complex and demanding! [By the way, I will be sending all of your responses to the provider, XXXX, so she will have the benefit of all of your thoughts and suggestions.]

The final task I have for you is to send a private message to me in which you put into words your final thoughts about Kim's situation, much the same way you did when you first read the case. Write down what you now believe to be probable causes of Kim's behavior, what you think you would do at this point if you were the provider, and why you think this would be the best course of action. (Some of you have already shared these final thoughts with the group, but it's also important to write this final *\*private\** reflection about the case.) Please send this final reflection to me at <kreschke@iastate.edu> (don't just hit "reply"!!!).

If at all possible, please send your message to me by Tuesday morning. I'll be posting the next case then and I don't want anyone to fall behind or be confused about which situation we're talking about (especially me :-D )

By the way, I wonder if some of you aren't a bit frustrated with a lack of closure as we finish up our discussion - I know I am; I like happy endings!! It's a consequence of using a real situation that I hadn't thought of. I'd like for XXXX to be able to say, "I tried this suggestion and it worked great - everything's running much smoother now!" But you all know it rarely works that neatly, certainly not with situations this challenging. Maybe by the end of the Forum (end of October) XXXX can give us at least some kind of an update on the situation. One of the benefits of using a real case is that we CARE so much more about what happens! I'll talk with her and see if she would do that for us. I certainly do appreciate her willingness to let us use this situation for our discussion so far!

I look for your message in my mailbox. Thanks!  
Kathy

## A-8: FINAL E-MAIL MESSAGES TO GROUPS

*October 25, 2000*

Wow, hard to believe we've reached the end of the Forum, isn't it? I've really enjoyed it - hope it was a good experience for you, too. In fact, I'm SO interested in what you thought of the Forum that I've put together a questionnaire for you to complete as your final "assignment." It should take about 15 minutes or so, depending on how much thought you put into it.

I hope you will put a LOT of thought into it - your feedback is crucial to the design of any future trainings like this. So set aside a time of day when you can really spend some time expressing your thoughts and ideas about the experience (in fact, you might want to take a look at the questions, give yourself some time to mull them over, then come back and fill the questionnaire out later). If you could do that by the weekend, that would be great!

And please be honest if there were things that you didn't like or suggestions for improvements - don't tell me what you think I want to hear, tell me what I NEED to hear to make it a better experience for future participants. Or, if the whole online thing didn't work well for you, tell me that, too. Online learning isn't for everyone and knowing more about who it works for and who it doesn't work for is VERY important information, too.

If you have any questions about the questionnaire itself (questions you can't figure out what I mean, something doesn't work right, etc.), please let me know.

You can find the questionnaire at <http://www.nncc.org/FCCForum/finalsurvey.html>.

A couple more important things:

1) Once I've gotten your questionnaire back, I'll send your certificate of training in the mail along with the card for CEU credits.

2) In about three weeks or so, I will be calling you for a short phone interview (I **told** you your opinion was important to me!!). I'm willing to schedule that call for any time that is most convenient for you. It should take about 20 minutes or so. About a week before, I'll send you an e-mail asking for the best time and date for the phone interview. Just so ya know you haven't had the last of my e-mails yet ;-)

Thanks a bunch!!  
Kathy

*October 30, 2000*

Well, gang, I'll be taking the Forum e-mail lists out of existence tomorrow morning, so if there's anything you'd like to say to your fellow Forumites (??), now's the time. (Of course, you will still be able to reach me at my e-mail address.)

If you haven't filled out the online questionnaire, please do so. I have your certificates in the envelopes and ready to mail - as soon as I have your questionnaire, I'll pop your certificate in the mail.

Thanks again for being a part of this! I can't tell you how much I enjoyed working with you and learning from you. I am encouraged to know that there are such caring and competent providers in Iowa - keep up the terrific work! I certainly hope we'll meet again in another FCC Forum!

I wish you all the best as you continue caring for children and families - you're an awesome bunch!

Kathy

# Certificate of Training

Iowa State University Extension's  
**FAMILY CHILD CARE FORUM**

This document certifies that

## **PARTICIPANT**

has received **21** hours of child care training

This course meets the following training requirements for family child care homes:

**15 hours – Guidance and Discipline**

**3 hours – Business Practices**

**3 hours – Child Development**

A-9: CERTIFICATE OF TRAINING

155

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Date

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Instructor

**IOWA STATE UNIVERSITY**  
Cooperative Extension

## APPENDIX B: THE FAMILY CHILD CARE FORUM WEBSITE



B-1: FAMILY CHILD CARE FORUM HOMEPAGE

# Family Child Care Forum

An online professional development opportunity  
for Family Child Care Providers



What's  
New

Case #3:  
Rachel

Readings &  
Resources

Help!

## B-2a: CASE WEBPAGE (CASE 3)



## *The Case of Rachel*

Here is the caregiver's story:

I had a child in my care that I never was able to help - maybe others in the Forum can figure out what might have worked.

Her name was Rachel and she was four years old when she was with me. Very frequently - at least once a day - Rachel would vomit. She would just be sitting there at the table like all the other kids and, out of nowhere, she would make this big sound and throw up. It was usually when food was being served but it also happened when was playing.

Sometimes it was just before the meal was served, sometimes during the meal. Sometimes it would happen at breakfast or snack time, but usually it was at lunch. It didn't seem to matter what was on the menu. She would even do it if we went out to McDonald's or on a picnic - wherever food was.

When I talked to the mom about it, I found out that it happened at home and also in the day care homes she was in before she came to me. But the mother seemed to be in denial that there was a problem. I insisted that she take her to the doctor, as I thought this was very unusual behavior. I told the mother that if she didn't seek medical help for Rachel, I would, because I felt it could turn into a lifelong problem for her. I was told that the doctor said there was nothing physically wrong with her.

Rachel's the youngest of three girls in her family. The father seemed even-tempered, polite and friendly whenever he was here - but I got the feeling he didn't see enough of the behavior to get an understanding of the problem. The mother was very high strung - a real perfectionist. There wasn't much cooperation from Rachel's parents in dealing with this - they just didn't seem to think it was much of a problem. The mom is angry at me to this day for terminating care.

It was so sad. The other children didn't understand what was happening - it was very upsetting to them. It was very upsetting to me. Rachel had been in many other day care homes before mine. After a short time, the providers would refuse to deal with it any more. I was really hoping to be the one who could help her, but after seven months, I had tried everything I could think of with no change.

**What's  
New**

**Help!**

**Readings &  
Resources**

**B-2b: CASES 1 AND 2***Case 1: The Case of Kim*

I have a four-year-old girl, we shall call Kim, that has caused me to return to “the books” to refresh and learn new ideas as how to handle her display of behavior.

Sometimes during group time she has great difficulty keeping her hands to herself. Also, at times that she thought that I was not watching closely, she would pull on a toddler’s foot or arm while that toddler was walking by or snatch a toy away from them. During group time I would ask her to sit a distance away from the other children but close enough to still be involved with what I was doing with the rest of the children. After I approached her about her behavior with the toddler she denied it all and blamed it on the toddler or whoever was nearby.

Her response to any of my attempts to discipline her in these situations has been one or all of the following: running around the daycare area screaming that she is telling the truth, saying she hates whoever seems to be near her as she’s running around, hitting me, and throwing toys.

I have set up a “mad corner” for her that I have asked her to put herself in until she has regained control of her emotions. Any reasoning I try to do with her during this behavior seems to escalate her screaming, running, etc....I have spoken to her mother regarding her seeing this behavior at home and if so what solution works for them. She did not give me much positive feedback except that they also experience this behavior at home.

I would really like to help her to learn self-control for her safety and the rest of my daycare children. Her screaming and yelling naturally upsets the rest of the children and causes them to cry and/or gather around me.

*Case 2: The Case of Julia*

I have had a child at my daycare that could warrant discussion. Julia is a 3-year-old that has been here for a year. Before she came to me she was in another daycare for a short period of time and before that she was home with mom. She is an only child.

This child deals with everything by crying. She is always crying. She also tattles and whines a lot. In other words a majority of the time she is making some type of unpleasant sound.

There are long periods of time where she clings to me. If I leave the room she can go into a panic. I have gone outside before and she will run from window to window

watching me. During these periods I have to tell her where I'm going and that I will be right back.

Julia will ask for toys and I get them out, but it never lasts for more than ten minutes. It seems like it's just the asking that she wants. It seems as though she is only really happy when she has an adult's undivided attention.

On the days that she plays well she is the sweetest little girl but there are times when those days are few and far between. Also she has played at other children's homes and the parents say the same thing – she is always crying, so it's not behavior just for me.

Julia is extremely bright in many ways: she has known the words to many songs and verses since she has started here, numbers, etc. It's her emotional maturity level that seems so low.

I know her parents love and care for her and show it. But I have noticed that her mother speaks to her in an immature way (e.g., her milky: calls her baby). Also, I do not think that the marriage is on real stable ground. And, since I have had her, she has gone to grandma's in another state for two weeks at a time at least four times.

I have her usually 50+ hrs a wk. and I know I am one of her main constants.

## B-3a: READINGS AND RESOURCES WEBPAGE (CASE 3)

*Readings & Resources*

As you might imagine, I wasn't able to find one resource that dealt with a child with this specific problem - no surprise there! Nothing about this case is easy, including finding information that will help us understand what's happening and what to do about it!

But there are a few issues that come up in this situation:

- determining whether a behavior (vomiting in this case) is a symptom of a physiological problem or an emotional/psychological one;
- communicating with parents about concerns with the health or development of their child;
- moral, ethical, and even legal issues of responsibility, confidentiality, the needs of one child weighed against the needs of the other children in care, etc.;
- when and where to go for outside help: what help is available to the provider and what help is available to parents

I've tried to find at least one resource for each of these areas. Between these resources and readings and the resources that you each share with one another, hopefully, you'll have not only good information to help us in talking about this case, but also good information to refer to the next time you have a child in your care that you are especially concerned about.

**#.#. Physiological vs. psychological causes**

In Rachel's case, it's not at all clear (at least to me!) whether the physical symptoms are the result of a physiological condition or the result of some type of emotional stress. Assuming either one is possible, the caregiver would probably want to investigate both possibilities. Obviously, getting the opinions of health experts would be the approach to discovering possible physical causes.

But, in the meantime, the caregiver would also want to investigate the child's emotional and psychological state. Early childhood programming offers some interesting ways of doing that. The following articles discuss two such approaches: using books to identify children's emotional stresses and to help the child work through them; and observing children's play patterns to identify serious psychological concerns. There are also other approaches, some of which have already been mentioned in our discussions of Kim and Julia: using art and using puppets or Little People characters to bring out children's upsetting thoughts and feelings.

**"Book Therapy Can Help"** by Arlene Fulton & Mona Lane

**"Personality Difficulties in Preschool Children Revealed Through Play Themes and Styles"** by Nancy E. Curry & Sara H. Amaud

**##. Communicating with parents about concerns  
Ethical issues**

[Note: These articles are written with center-based care in mind. In addition, their main focus is on developmental delays or permanent disabling conditions rather than emotional or physical conditions that may be temporary. But I hope you are able to adapt many of the principles to Family Child Care and to our case.]

**"Conferring with Parents When You're Concerned that Their Child Needs Special Services"** by Carole F. Abbott & Susan Gold

**##. Community Resources**

## B-3b: READINGS AND RESOURCES, CASES 1 AND 2

## CASE 1

## Readings:

Helping Young Children Deal with Anger by Marian Marion,  
<http://ericeece.org/pubs/digests/1997/marion97.html>

Understanding Young Children's Behavior by Judy Reinsburg, *Young Children*, July 1999.

The Challenge of Working with Challenging Children by Maureen Mulroy,  
<http://www.canr.uconn.edu/ces/child/newsarticles/FCS53111.html>.

## Resources:

Misbehavior: Finding Causes and Looking for Solutions, adapted by Kathy Reschke from Iowa Family Child Care Handbook (1999), L. Oesterreich, B. G. Holt, and S. Karas.

## CASE 2

## Readings:

Understanding Tears and Tantrums by Aletha Solter, *Young Children*, 1992.

What to Do with a Whiner by Barbara Albers-Hill,  
<http://family.go.com/raisingkids/child/skills/feature/ccpt68whine/ccpt68whine.html>

Parent-Child Attachment from the Minnesota Coalition for Family Policy,  
<http://www.cyfc.umn.edu/mcfp/Attachment-FS.html>.

The Roots of Misbehavior by Kathy Reschke

## Resources:

Identifying the Roots of Misbehavior by Kathy Reschke

Emotion Words, adapted by Kathy Reschke from Steve Hein's Feeling Words Sample, <http://eqi.org/fw.htm>

Human Emotional Needs by Steve Hein,  
<http://eqi.org/emotions.htm#Human Emotional Needs>

## B-4: WHAT'S NEW WEBPAGE

**the FCC  
Forum**

## *What's New?*

Here's what's on the agenda currently:

<b>Tue. 10/17- Sun. 10/29</b>	<p>Time to wrap up the discussion on Rachel and then wrap up the last of the details as we conclude the Forum. Your tasks:</p> <ul style="list-style-type: none"> <li>#. Send me your final summary of your thoughts about Rachel's situation: what you think the cause of the behavior is, what you would have done as her provider, and why. Remember to send this to me at <b>kreschke@iastate.edu</b>.</li> <li>#. If you have any final comments or farewells for the group, now's the time to send them.</li> <li>#. Please fill out the online questionnaire that serves as your final assignment for the Forum. Remember, your feedback is <b>essential</b> for the development of future Forums, so give me your honest and thorough opinion of your experience as a participant.</li> </ul> <p>Thanks!!</p>
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Here's what happened previously:

<b>Fri. 10/13 - Tues. 10/17</b>	<p>The readings and resources have been posted. Click on the button on the bottom of this page to find them.</p> <p>I think you all know the procedure by now, so go to it!!</p>
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<b>Case #3: Rachel</b>	<b>Help!</b>	<b>Readings &amp; Resources</b>
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## B-5: HELP WEBPAGE

***Help!***

If you have a technical problem, please e-mail or call me as soon as possible. If you have a problem that you think others might be able to help with, e-mail the whole Forum, but be sure and write "Tech problem" in the subject line.

If a non-technical problem comes up that you need to discuss with me, feel free to e-mail me or call me. Possible situations might be:

- A situation unexpectedly comes up that will keep you from participating for more than two or three days;
- A situation has come up within the discussion that is making you feel uncomfortable or that you are unsure of how to deal with;
- You're unsure of an assignment or of the expectations for your participation;
- You have a suggestion for me that will help improve the discussion, the website, or any other aspect of the Forum;

In other words, I'm available and very willing to talk with you about any aspect of your experience with this training. It's a new adventure for all of us and, with everyone's input, I hope that we can make it a valuable one for each person.

**E-mail:** [kreschke@iastate.edu](mailto:kreschke@iastate.edu)

**Work phone:** 515-294-5702 - 9:30 a.m -4:00 p.m. (you may leave a message if it's not urgent)

If you can't reach me and you have a technical problem, you can e-mail our technical consultant, Karl at [khehr@iastate.edu](mailto:khehr@iastate.edu). He has promised to reply to any requests for help within 24 hrs.

Case #3: Rachel	What's New	Readings & Resources
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## APPENDIX C: DATA COLLECTION INSTRUMENTS

## C-1: PRE-FORUM QUESTIONNAIRE

Hi! Welcome to the Family Child Care Forum! I'm excited that you've chosen to join with other family child care providers in this learning adventure. I hope you're looking forward to it, too!

This questionnaire will serve two purposes:

- It will complete the registration process for you;
- It will provide information that I will need to report about the Forum as a study of online learning (for more information on this aspect of the Forum, [click here](#))

Just a reminder about how the information from this questionnaire will be used:

- At the end of the Forum, I will take your name off of all the information that you have provided and will replace it with an alias.
- When the study is written and made public, all of this information will be combined to describe the whole group - no one will be described individually in a way in which someone could identify you.
- When I talk in the study report about individual participants' comments or participation, I will use the alias names instead of real names to ensure confidentiality.

If you have any other questions about this questionnaire, please feel free to contact me.

Kathy Reschke  
[kreschke@iastate.edu](mailto:kreschke@iastate.edu)  
 515-294-5702

**Your name:**

1. Please tell me briefly why you are interested in being a part of the Forum:  
*[text box]*

**Please tell me about yourself as a child care professional:**

2. Roughly how long have you worked as a family child care provider? *[text box]*
3. a. Have you worked in other child care settings (child care center, preschool, after-school program, etc.)? *[yes and no check boxes]*  
 b. If yes, for how long? *[text box]*

4. Rank from 1 to 5 the following reasons that you first became a family child care provider, with 1 being the most important reason, 2 being the next important, and so on, with 5 being the least important:  
*[text boxes before each choice]*
  - ☐ I wanted to stay home with my own children.
  - ☐ It was the best job available that I was qualified for.
  - ☐ I wanted my own business.
  - ☐ I wanted to help families.
  - ☐ I wanted to work with children.
  
5. If there were any other reasons for becoming a FCC provider, please list them: *[text box]*
  
6. Choose the best description for how you see your work as a child care provider : *[pull-down menu; choices:]*
  - It's temporary employment until I can find a better job.
  - It's a stepping stone to other work with children.
  - It's my chosen profession.
  - It's good while my children are young.
  
7. On average, how often do you talk with other child care professionals using each of the following ways of communicating: *[pull-down menu; choices: never or rarely; once or twice a month; once or twice a week; daily]*
  - a. In person
  - b. By phone
  - c. By e-mail
  
8. How often do you attend an organized meeting of child care providers (not including trainings)? *[pull-down menu; choices:]*
  - never or very rarely
  - once or twice a year
  - monthly
  - weekly
  
9. a. Are you a member of a local provider association? *[yes and no check boxes]*
  - b. If so, about how long have you been a member? *[text box]*
  - c. Have you ever held an office? *[yes and no check boxes]*

10. a. Are you a member of a state or national provider association? *[yes and no check boxes]*
- b. If so, about how long have you been a member? *[text box]*
- c. Have you ever held an office? *[yes and no check boxes]*
11. Please indicate the appropriate choice for each of the following types of specialization: *[check boxes; choices were: I don't want this; I would like to have this someday; I'm in the process of getting this; I have this]*
- a. National Assoc. of Family Child Care (NAFCC) accreditation
  - b. a Child Development Associate (CDA) credential
  - c. an Associates degree in child development or Early Childhood Education (ECE)
  - d. a Bachelor's degree in child development or ECE
  - e. a specialized certification (for example, Montessori)
12. How important to you are the following reasons for getting training in child care? *[pull-down menu; choices were: not very important; somewhat important; quite important; very important]*
- a. to meet state training requirements
  - b. to connect with other providers
  - c. to become more professional as a child care provider
  - d. to get new ideas to use with children
  - e. to learn better business practices
13. How could child care training be improved to better meet your needs as a family child care provider? *[text box]*
14. If you have anything else you'd like to say about yourself as a child care professional, please write your comments here: *[text box]*

---

**Tell me a few things about your family child care program\*:**

(\*And remember, this information will not have any identifying information - your name, etc. - connected to it once you submit it to me.)

15. Please give the following information for each child currently enrolled in your program (be sure and give the information for all three columns for each child): *[text boxes were provided to enter age of child and average hours per week of care; yes and no checkboxes were provided to indicate special needs; the table allowed for information for up to 12 children, the*

*maximum number of children allowed in family child care group home]*

16. What are your current hours of operations? *[text box]*
17. Is your program registered with the Department of Human Services? *[yes and no check boxes]*
18. Do you participate in the Child and Adult Care Food Program? *[yes and no check boxes]*
19. Is your program accredited by the National Association for Family Child Care? *[yes and no check boxes]*
20. Do you pay anyone to assist you on a regular basis in your child care business? *[yes and no check boxes]*
21. If you have anything else you'd like to add about your program, please write your comments here: *[text box]*

**Tell me a bit about your use of the computer:**

22. How much do you agree with the following statements: *[pull-down menus; choices: strongly disagree; disagree somewhat; agree somewhat; strongly agree]*
  - a. I am comfortable using the computer.
  - b. The computer is useful to me in my business.
  - c. I'm intimidated by the computer.
  - d. I enjoy learning new computer skills.
  - e. The computer is useful to my family.
  - f. I would like to improve my computer skills.
  - g. I'm anxious about the computer skills I'll need to participate in the Forum.
23. Briefly describe the tasks, if any, that you personally use the computer for on a regular basis (for example, e-mailing friends, keeping records, etc.): *[text box]*
24. Estimate how many hours a week that you normally spend on the computer. *[text box]*
25. If you have any other comments about computer use, please add them here: *[text box]*

---

**Please tell me a few things about yourself:**

- 26. How old are you? *[text box]*
- 27. a. Do you have children? *[yes and no check box]*  
b. If yes, how many of your children are presently included in your child care program? *[text box]*
- 28. Roughly what percentage of your family's total income is contributed by the income from your FCC business? *[text box]*
- 29. What is your highest level of formal education? *[pull-down menu; choices: less than a high school diploma; high school diploma; CDA; associate's degree (AA); bachelor's degree; graduate degree]*
- 30. If you have been or are currently enrolled in a college program, what was/is your major? *[text box]*
- 31. If there is anything else you would like to say about yourself, please add your comments here: *[text box]*

That's it!! All you have to do is press the submit button below and the information will be sent to me automatically!

Thank you so much for taking the time to answer these questions. Knowing more about those of you who are a part of the Forum group will help me to tailor the Forum so it best suits you. Also, it will help others who read about the Forum in the research report to know some of the characteristics of the group that participated.

Once you've submitted this questionnaire, I'll get in touch with you by e-mail to let you know what comes next. In the meantime, please contact me if you have any questions or comments.

Thanks again!

Kathy

[kreschke@iastate.edu](mailto:kreschke@iastate.edu)  
515-294-5702

## C-2: POST-FORUM QUESTIONNAIRE

Thanks so much for being a member of the Family Child Care Forum! I'd like to know what you thought of the experience, so I've put together some questions that I'd like you to answer as a final "assignment."

Those of us who design and study child care training will use your responses to find out what worked, what didn't work, and how to improve training experiences like the Forum to better meet the needs of Family Child Care professionals like you.

And, of course:

- Your name will not be connected to any of your responses;
- The responses of all the Forum participants will be put together and reported as a group;

Thanks so much for your input – I appreciate it!

Kathy

1. Briefly tell what you liked about your experience with the Forum: *[text box]*
2. Briefly tell what you disliked about the experience: *[text box]*
3. The next few questions ask about changes in attitude that might have come about as a result of having participated in the Forum.

**From the beginning of the Forum to the end...**

*[pull down menus; choices: changed for the worse; didn't change; changed for the better]*

- a. my attitude toward online child care training...
  - b. my attitude toward communicating with other providers using the computer....
  - c. my attitude toward discussion as a way of learning...
  - d. my attitude toward myself as a part of a community of professionals...
4. The next few questions ask about changes in your skills or thinking as a result of participating in the Forum.

**From the beginning of the Forum to the end...**

*[pull down menus; choices: changed for the worse; didn't change; changed for the better]*

- a. my computer skills



- b. my ability to communicate effectively through e-mail...
  - c. my understanding of the guidance and discipline of young children...
5. The next series of questions ask about the aspects of the Forum that influenced your thinking about the behavior situations that we discussed. Please choose the answer that best describes your experience: *[pull-down menus; choices: didn't influence my thinking at all; influenced my thinking somewhat; influenced my thinking a lot]*
- a. Reading about others' own experiences....
  - b. Writing my thoughts down in order to share them with others....
  - c. Reading the facilitator's comments and questions...
  - d. Reading the readings and resources...
  - e. Reading the advice given by others...
  - f. Discussing differences of opinion...
  - g. Working together to agree on a solution...
6. The next few questions have to do with the amount of time that you committed to the Forum activities.
- a. How much time each week, on average, did you spend reading Forum e-mail messages? *[text box]* hours/week
  - b. How much time each week, on average, did you spend writing messages? *[text box]* hours/week
  - c. How much time each week, on average, did you spend reading the readings and resources posted on the website? *[text box]* hours/week
  - d. Did you participate in the discussions as much as you had hoped to? *[yes or no radio button]*
  - e. If not, what kept you from participating? *[text box]*

The final questions ask about your overall satisfaction with the Forum.

- 7. Would you participate in something like this again? *[text box]*
- 8. Would you recommend the Forum to other family child care providers? *[text box]*
- 9. If we decided to offer another Family Child Care Forum in the future...
  - a. ...what advice would you give to the Forum designers? *[text box]*

- b. ...what advice would you give to the facilitator? *[text box]*
- c. ...what advice would you give to the providers who choose to participate?  
*[text box]*
- d. ...what topics would be good for this type of training? *[text box]*

10. Is there anything else you'd like to add about your experiences in the Forum?  
*[text box]*

**Thank you!** I appreciate the time and effort you've taken to give me your feedback. It will be a valuable part of both the study of online learning and of the design of future online training.

*[submit button]*

## C-3: TELEPHONE INTERVIEW

**NAME:****DATE:****PHONE:**

Hi \_\_\_\_\_! Thanks for being willing to talk to me one more time about the Forum.

As I mentioned in my e-mail, I have a couple of final questions that I'd like to ask you. These questions have to do with any *impact* that the Forum experience might have had on you in the long term. Please answer honestly. You won't hurt my feelings, no matter how you answer the questions. I truly don't have any answers that I'm expecting from you, so your perspective will be helpful, no matter what.

Okay, **first question:** Obviously, the Forum was focused on challenging behavior problems with young children. Since being a part of the Forum, do you think you've changed anything about your own approach to difficult behavior situations?

**Next question:** A big part of the Forum was sharing ideas and experiences and learning from other providers. Since being a part of the Forum, do you think there is any difference in the way that you relate to other providers that you know?

**Okay, next question:** Having the entire Forum on the Internet was a new experience for all of us. Since being part of it, has anything changed about your use of the Internet or your opinion about the usefulness of the Internet for your own professional development as a family child care provider?

And the **last question:** Has the Forum had any other impact on you in the long term that we haven't covered?

That's it! We're done! Thanks so much for your input \_\_\_\_\_. As a way of saying thanks, I'm going to send you some activity cards that I put together. There are three sets of cards, one with ideas for dramatic play, one with art ideas, and one with fingerplays. So I'll get those in the mail to you.

Thanks again, \_\_\_\_\_. Best wishes to you in your child care business. I hope we'll have a chance to meet again.

Bye.

## APPENDIX D: GROUP KNOWLEDGE BUILDING ANALYSIS

## D-1: SAMPLE TRANSCRIPT OF DISCUSSION

*Group 1, Case 1 Discussion, Numbered by Message and Sentence*

[Faye]

- 3.1 I think this little girl is doing it for attention.
- 3.2 I've had daycare kids in the past and still do who hit and pick on smaller kids mostly.
- 3.3 Not sure why they do it but I've found out that they do it at home too usually.
- 3.4 It is hard being a little kid these days, they often go from daycare to babysitters at home.
- 3.5 Everyone is busy and I feel that the kids suffer and usually act out to get the attention they need.
- 3.6 I know how busy we get at night but luckily I get to spend time with my kids all the time.
- 3.7 I feel it is normal that they say someone else did it. Is hard for them to admit they did wrong.
- 3.8 My other email I think I talked more about a solution.
- 3.9 That is what I get for trying to type and think of all the things I need to do.
- 3.10 This moving is more involved than I thought it would be.

[Sue]

- 4.1 As I wrote to Kathy, my first thought about this little girl was, she just needed a tougher approach.
- 4.2 But, then I thought about this all afternoon and I do not feel that that is the approach to take.
- 4.3 I think the provider is frustrated and I feel for the provider because she asked for help from the parent and it seemed to me that the parent did not feel that it was a problem.
- 4.4 I immediately thought that that is a problem in and of itself because the provider is not receiving support from the parent.
- 4.5 I also think that what is going on is a 4 year old spreading their wings and no one is noticing except to discipline—maybe this kid needs some positive feedback—obviously the parent does not provide that so as a provider help the child to feel more important.
- 4.6 This is my initial reaction.

[Gretchen]

- 5.1 I think that children that behave in this fashion may be looking for attention... and jealous of the attention that is generally given to the younger children.
- 5.2 What has worked for me when I have had a child act in this manner is to
- 5.3 Immediately let the child know that I was aware of what the child was doing;
- 5.4 Remove the child from the vicinity of the other child(ren);
- 5.5 Let the child know that behavior of this type is unacceptable and won't be allowed at my house.
- 5.6 The next time the child acted in this behavior I will make them sit in a chair for several minutes where I can see him/her but he/she is unable to see what the other children are doing.
- 5.7 If it still continues, then the child starts losing 'privileges', such as computer time, riding the battery-operated outdoor toys, Playstation, etc.
- 5.8 It usually only takes one or two times of losing 'privileges' before they realize that it is much more fun to be able to play with ALL the toys.
- 5.9 I did have one child who acted in a very similar manner but also went one step further by attempting to also bite me and the other kids.
- 5.10 He also did this at home on a regular basis.
- 5.11 In fact, his mother would have bruises on her arms where he had bit her.
- 5.12 She rarely disciplined him for this because it made him "mad" at her if she disciplined him.

- 5.13 I could keep him under control with the other kids if I would separate him as soon as he started the unacceptable behavior but this also meant that he wasn't allowed to play on some of the special toys, i.e. computer, Playstation, ride-on toys, etc.
- 5.14 I would always explain to the mother if he had acted in this way during the day and what steps I had taken to control it.
- 5.15 As soon as she would get in the door, he would be complaining to her that I hadn't let him do this or that during the day, that I made him sit in the chair, etc.
- 5.16 She felt that I was being unfair to him sometimes and that maybe the other 5 children who were in my care were actually the problem but he was getting the blame.
- 5.17 By mutual agreement, she stopped bringing him to my house after about 4 months.
- 5.18 In the 2 months that followed, she went through 5 day care providers before she moved to another town.
- 5.19 According to those providers, she also thought it was the other children at their houses that caused the problems but he just got the blame.

[Beth]

- 6.1 I think Kim is really wanting attention, and negative attention is better than no attention at all.
- 6.2 It's so easy for us to focus on the "bad" behavior instead of the good, especially when caring for others that are behaving.
- 6.3 Maybe the provider could point out when Kim IS behaving "Kim – you're doing a great job of listening" or set aside five minutes during the day to have "Kim time" and just talk to her about her day or ways Kim could "help" the provider during the day.
- 6.4 Maybe by being treated like a big girl and being a helper, she would feel special.
- 6.5 Maybe by receiving praise for her good behavior, it may not be as much fun to be bad.

[Diana]

- 7.1 << Maybe by being treated like a big girl and being a helper, she would feel special. Maybe by receiving praise for her good behavior, it may not be as much fun to be bad. >>
- 7.2 This is good....I've tried this with a child and it worked quite well.
- 7.3 I agree with the attention getting and I feel that the consistency issue could be a factor also.
- 7.4 Maybe good consistent discipline with a lot of positive reinforcement is the answer...now the consistent and the positive parts can be the hard part if the child isn't getting these at home....the provider may have to sit down and discuss this with the dcp's.
- 7.5 Not that they have to be exactly alike on these issues because kids need to learn that what is okay at home may not necessarily be okay in daycare, or school, or work, etc., but if everyone's on the same wavelength as far as providing consistency and positive reinforcement, this could be the answer to the child's problems.
- 7.6 JMHO

[Ellen]

- 8.1 My response to the 1st Case concerning 4 yr. old Kim is of wanting and getting attention or maybe of boredom at that particular group time.
- 8.2 Little Kim is definitely getting her point across with her behavior.
- 8.3 My first thought was; ok this little girl is 4 years old.
- 8.4 She should be able to follow simple rules and guidelines.
- 8.5 So, therefore, if rules and guidelines are set up, she'll have choices to make or consequences to take.
- 8.6 That's harder to do when a provider is the only adult in the home.
- 8.7 But then again, it also shows the other children what will and won't be tolerated at the providers home.
- 8.8 For instance; if it's story time and a child is picking on some one and the provider sees this, then she could say (to the whole group without saying a name ): "Let's remember to keep our hands to ourselves."

- 8.9 If it happens the second time, the provider could say, " \_\_\_\_\_, I've asked you to keep your hands to yourself. If it happens again, you will go and sit at the kitchen table for the rest of the story."
- 8.10 If the behavior continues, then I would ask the child to leave story time or take her/him to the table.
- 8.11 It's like 3 strikes and your out.
- 8.12 This is also teaching the other children the rules of story time or miss out on the end of the story.
- 8.13 But for Kim, I wonder if this would even work. It sounds like she really disrupts the whole group time.
- 8.14 I would like to ask the provider what Kim does when put in a time-out or "mad corner"?
- 8.15 Is the provider giving her enough time to cool down?
- 8.16 Will Kim stay in the time-out or what goes on?
- 8.17 It seems that she runs through the house screaming, so that makes me believe that she won't stay in time-out.
- 8.18 Does the provider have a behavioral chart that she does for Kim to maybe help reward the positive or good things that Kim does at the providers home?
- 8.19 It seems there may be a problem at home also with behavior.
- 8.20 The provider made a comment that there was not much feedback from the parents.
- 8.21 I'd like to learn more about Kim's home behavior and how the parents handle or not handle the behaviors.
- 8.22 I would also like to learn more about how disruptive little Kim is to the whole daycare at that particular time of the incident.
- 8.23 For instance; is the daycare provider able to continue on with group time, or is it so disrupted that group time stops?
- 8.24 What do they do at group time? Is it story time, craft time or play time?
- 8.25 Are they doing age appropriate things at group time to keep Kim interested or is she really bored?
- 8.26 I feel that the provider wants to show or teach good self control to Kim, but may not be getting the same help at home.
- 8.27 There are so many questions Kathy, that I would like to ask yet before I really draw a good understanding of this situation.
- 8.28 Are we able to ask more questions concerning this case, or do we just make a evaluation from what you gave us?
- 8.29 This forum case is very interesting, but it really makes you put alot of thought into the case.
- 8.30 I found that I kept going over what I had wrote and then would put myself into the providers shoes and then little Kim's.

[Heidi]

- 9.1 It seems to me that Kim is wanting some attention.
- 9.2 I think she might be jealous of the younger children because they require more of the caregivers attention than a 4yr old does.
- 9.3 When she acts the way she does during circle time, she's the center of attention.
- 9.4 When she hurts the toddlers & takes the toys from them behind her back, I think it's because she's mad at them for getting more attention.
- 9.5 A few questions I have:
- 9.6 Are there any other kids her age in the daycare or are they all younger?
- 9.7 If so, does she treat them the same way?
- 9.8 Does she have any siblings at home?

- 9.10 And if so, do her parents give her security that she is just as important & as special as her siblings are?
- 9.11 She could feel like she isn't special when the younger kids are around.
- 9.12 I would try having her be your helper.
- 9.13 Have her help prepare meals, set the table, change diapers, etc.
- 9.14 This way she'll feel like she's important, because she's big enough to do those things.

[Gretchen]

- 10.1 Rewarding a child who misbehaves regularly by giving them special treatment when they do behave *may open a bag of worms unless the other children are all getting the special treatments also.*
- 10.2 And if they are getting the special treatments regularly for good behavior, the child that is misbehaving should see that and realize there are rewards for good behavior already.
- 10.3 What I am trying to say is if Kim is singled out for special treatments when she does act appropriately, you may have other children misbehave just so that they can get special treatment when they are behaving (their normal behavior).
- 10.4 It doesn't take long for kids to figure out what is going on.
- 10.5 I have found it is much more effective to take those privileges or special treatments away for misbehavior.
- 10.6 That way you are giving the child a choice.... the child can behave and have all the special privileges that go with it, or they can misbehave and lose those privileges.



## D-2: SAMPLE OF PROPOSALS IN DISCUSSION PROGRESSION

**Group 1, Case 1** [Note: C denotes proposal of cause; S denotes proposal of solution]

MSG #	Faye/Green	Diana/Blue	Sue/Black	Gretchen/Red	Beth/Turquoise	Ellen/Pink	Heidi/Gray	Cara/Maroon
(Private Message)	<b>C1</b> – typical behavior (due to age) <b>S1</b> – isolation <i>[in second message]</i> <b>C2</b> – fear/In-Security/attention-getting due to home life <b>C1</b> – typical behavior (due to age)	<b>C2</b> – fear/in-security/attention-getting due to home life <b>C3</b> – in-consistency/lack of cooperation between home & child care	<i>[no private message sent]</i>	<b>C4</b> – jealous of attention given younger children <b>S1</b> – isolation <b>S3</b> – state rule & consequence <b>S4</b> – punishment (loss of privileges/rewards)	<b>C2/4</b> – attention-getting (unspecified) <b>S2</b> – affection/praise/attention <b>S5</b> – give tasks, responsibilities	<b>C2/4</b> – attention-getting (unspecified) <b>C5</b> – boredom <b>S3</b> – state rule & consequence <b>S1</b> – isolation <b>S7</b> – material rewards <b>C3</b> – in-consistency/lack of cooperation between home & child care	<b>C4</b> – jealous of attention given younger children <b>S5</b> – give tasks, responsibilities	<b>C2/4</b> – attention-getting (unspecified) <b>S1</b> – isolation
1	<i>[duplicate of private message]</i> <b>C1</b> – typical behavior (due to age) <b>S1</b> – isolation							
2		<i>[duplicate of private message]</i> <b>C2</b> – fear/in-security/attention-getting due to home life <b>C3</b> – in-consistency/lack of cooperation between home & child care						
3	<i>[duplicate of private message]</i> <b>C2</b> – fear/In-Security/attention-getting due to home life <b>C1</b> – typical behavior (due to age)							

<b>4</b>			<b>C3</b> – in-consistency/lack of cooperation between home & child care <b>C1</b> – typical behavior (due to age) <b>S2</b> – affection/praise/attention					
<b>5</b>				<i>[duplicate of private message]</i> <b>C4</b> – jealous of attention given younger children <b>S1</b> – isolation <b>S3</b> – state rule & consequence <b>S4</b> – punishment (loss of privileges/rewards)				
<b>6</b>					<i>[duplicate of private message]</i> <b>C2/4</b> – attention-getting (unspecified) <b>S2</b> – affection/praise/attention <b>S5</b> – give tasks, responsibilities			
<b>7</b>		<b>S2</b> – affection/praise/attention <b>S5</b> – give tasks, responsibilities <b>C2/4</b> – attention-getting (unspecified) <b>C3</b> – in-consistency/lack of cooperation between home & child care <b>S6</b> – communicate with parents						

8						<i>[duplicate of private message]</i> <b>C2/4</b> – attention-getting (unspecified) <b>C5</b> – boredom <b>S3</b> – state rule & consequence <b>S1</b> – isolation <b>S7</b> – material rewards <b>C3</b> – in-consistency/lack of cooperation between home & child care		
9							<i>[duplicate of private message]</i> <b>C4</b> – jealous of attention given younger children <b>S5</b> – give tasks, responsibilities	
10				<b>S5</b> – give tasks, responsibilities <b>S4</b> – punishment (loss of privileges/rewards) <b>S3</b> – state rule & consequence				
<b>More information from provider: (information about family structure, family activities, isolation technique, changes in CC environment, use of reward system)</b>								
11							<i>[duplicate of private message]</i> <b>C2/4</b> – attention-getting (unspecified) <b>S1</b> – isolation	
12		<b>C2</b> – fear/insecurity/attention-getting due to home life <b>C3</b> – in-consistency/lack of cooperation						

<b>12</b> cont.		between home & child care <b>S3</b> – state rule & consequence (in presence of parent) <b>S6</b> – communicate with parents <b>S7</b> – material rewards [cont.] <b>S5</b> – give tasks, responsibilities						
<b>13</b>			<b>S3</b> – state rule & consequence (in presence of parent) <b>C1</b> – typical behavior (due to birth order) <b>S5</b> – give tasks, responsibilities					
<b>Readings and resources posted: anger in children, general principles for interpreting children's behavior, forms for documenting behavior</b>								
<b>14</b>						<b>C2</b> – fear/insecurity/attention-getting due to home life <b>C4</b> – jealous of attention given younger children <b>S2</b> – affection/praise/attention <b>S5/S7</b> – positive reinforcements		
<b>15</b>					<b>C2</b> – fear/insecurity/attention-getting due to home life <b>S3</b> – state rule & consequence <b>S1</b> – isolation <b>S2</b> – affection/praise/attention <b>S5</b> – give tasks, responsibilities			

<b>15</b> cont.					<b>S4 – punishment</b> (loss of privileges/rewards)			
<b>16</b>			<b>S5 – give tasks, responsibilities</b> <b>C3 – in-consistency/lack of cooperation between home &amp; child care</b> <b>S2 – affection/praise/attention</b> <b>S5/S7 – positive reinforcements</b>					
<b>More Information from provider: (use of isolation, group discussion about appropriate behavior, affection; observations of mother-child interactions, lack of consistent discipline)</b>								
<b>17</b>								<b>S1 – isolation</b> <b>S2 – affection/praise/attention</b> <b>S8 – terminate</b>
<b>18</b>	<b>S1 – isolation</b> <b>S8 – terminate</b>							
<b>19</b>						<b>S9 – document behavior</b> <b>S6 – communicate with parents</b> <b>S10 – tell parents to contact prof. help (AEA)</b> <b>S8 – terminate</b> <b>S7 – material rewards</b> <b>S4 – punishment (loss of privileges/rewards)</b> <b>S3 – state rule &amp; consequence</b>		
<b>20</b>					<b>S8 – terminate</b> <b>C2/4 – attention-getting (unspecified)</b>			
<b>21</b>	<b>S8 – terminate</b> <b>C6 – cc enviro. too structured</b>							

<b>22</b>		<b>S8</b> – terminate <b>S5</b> – give tasks, responsibilities <b>S4</b> – punishment (loss of privileges) <b>C2</b> – fear/insecurity/attention-getting due to home life <b>S11</b> – self-reg. prompts <b>S6</b> – communicate with parents						
<b>23</b>	<b>S8</b> – terminate							
<b>24</b>				<b>C2/4</b> – attention-getting (unspecified) <b>S1</b> – isolation <b>S4</b> – punishment (loss of privileges/ rewards) <b>S8</b> – terminate				
<b>25</b>		<b>S8</b> – terminate						

### D-3: SAMPLE CODE MATRIX FOR GROUP KNOWLEDGE BUILDING:

#### Group 1/Case 1

	Faye	Diana	Sue	Gretchen	Beth	Ellen	Heldi	Cara
C1	1		4					
C2	3	7		14	5	10		15
C3		7	4			1		
C4		7		8	14	5	10	1
C5						1		
C6								
S1	1	18		24		5		15
S2		7	4	5	5			15
S3			13	5	10	15		15
S4				5	10	15		15
S5		7	12	13	10		5	15
S6								
S7						5		15
S8	18	21	23	24	20			17
S9								
S10								
S11								

**Note:** Numbers in cells designate message number in discussion transcript.

#### Coding Key:



Independent  
Proposal



Comparison



Reactive  
Modification



Integration

#### Causes:

- C1 – typical behavior
- C2 – fear/insecurity/attention due to homelife
- C3 – inconsistency/lack of cooperation between parents and provider
- C4 – jealous of attention given younger children
- C5 – boredom
- C6 – child care environment too structured

#### Solutions:

- S1 – isolation
- S2 – affection/praise/attention
- S3 – state rule & consequence
- S4 – punishment (loss of privileges/rewards)
- S5 – give responsibilities
- S6 – communicate with parents
- S7 – material rewards
- S8 – terminate

- S9 – document behavior
- S10 – talk to parents about getting professional help
- S11 – self-regulation prompts

## APPENDIX E: INDIVIDUAL KNOWLEDGE APPROPRIATION ANALYSIS



## E-1: SAMPLE PRE- AND POST-DISCUSSION SUMMARIES

Diana – G1 – C1	
<p>I think what I'm seeing (IMHO) is that kim is acting out of control because perhaps she isn't feeling secure. I wonder if the discipline she receives at home is either non-existent or inconsistent and she doesn't know how to control her anger for this reason. If either of these are true, it can cause the child to feel insecure and they can get out of control.</p> <p>IMO, the reason for parental discipline is to teach the child self-control and self discipline and if it is non-existent, the child cannot learn it. Also, if there is discipline practiced but it is not consistent, it can become confusing to the child and she is not able to learn to help herself she doesn't know what to do with so many different "punishments"--there may be too many and she has no consistent base to look back on.</p> <p>Also if any of the above is true, and then she is getting good consistent discipline at the provider's home, this also can be confusing to the child because she's not getting it at home. So then the provider becomes the bad guy in all of this because he/she is disciplining the child and so the child acts on that also.</p>	<p>I still feel the same about my initial thoughts on kim's case. I feel that she is lacking consistency in her life and the lack of discipline is showing it's affects. I feel that the provider still needs to continue to discipline her and to continue with something for awhile to see if it works rather than to try something for a short time and the jump to something else if it doesn't. I guess I think that some kind of visual could help Kim in learning to manage her own behavior.</p> <p>Along with my initial thoughts I do agree that this is an attention...especially after reading that her family is so busy with her older siblings' activities. For this reason I think that giving Kim a special role (that is shared with the other children by taking turns every day or week) will help her to realize that she is equally as important and special.</p> <p>I believe that the special roles she (and the other children) is given are a privilege and that if behavior is bad that these privileges should be taken away when it is that child's turn. I think the visual "behavior schedule" (for lack of a better word) will help for Kim to see when her behavior is causing her to close to losing it. This can be a great way for her to learn how to control her behavior.</p> <p>I also feel that a discussion about the matter with the parents(without pointing the blame on anyone) could help her at home. The provider could explain what is going on in her daycare, what she has attempted, what has and hasn't worked and what is being tried now. If the provider uses her words carefully she may plant some ideas into the parents minds that they may go right home and start trying.</p>

## E-2: CODING SCHEME FOR PRE & POST SUMMARIES

**STEP 1:** Identify each unique proposal of cause and each unique proposal of solution.

**STEP 2:** Characterize with word or phrase.

**STEP 3:** Compare pre- and post-discussion causes and solutions. Note changes of type, changes of number, and modifications.

### TYPE

Ex.: "The behavior is typical of four-year-olds;" "I think the child behaves like that because the parents don't have time for her at home."

### NUMBER

### MODIFICATIONS

Ex: "Along with my original thoughts [that the child lacks consistent discipline at home], I do agree that this is an attention- [getting behavior]."

**STEP 4:** Code the paired summaries:

### SLIGHT/NO CHANGE:

- Maintained virtually the same type and number of causes/ solutions with no changes
- Maintained original proposals with slight variations.
  - *Positive rewards in the form of choices; positive rewards in the form of stickers*

### MODERATE CHANGE:

- Maintained some of original proposals, but added or deleted one or two.
  - *lack of consistent discipline at home; lack of consistent discipline at home & lack of attention from parents*
- Modified original proposals
  - *Attention-getting due to lack of caregiver attention; Attention-getting due to lack of parental attention*
- Increased certainty and/or elaborated on tentative proposals; decreased certainty
  - *Possible lack of attention at home or child care; definite lack of attention at home*
  - *Attention-getting, lack of discipline at home, inappropriate activities at child care, & lack of consistency between home and child care; need to observe and chart behavior in order to assess*

### CONSIDERABLE CHANGE:

- Marked change in type of cause or solution
  - *Typical behavior & attention-getting; lack of discipline*
- Added or deleted more than two proposals relative to the original
  - *Isolation; isolation & positive attention/praise & negative consequences*
- From no proposals to at least one proposal and vice versa
  - *No solutions; positive attention, rules and negative consequences, charting behavior, communication with parents, and coaching self-regulation with child*

## E-3: SAMPLE OF PRE- AND POST-DISCUSSION SUMMARY COMPARISONS

<b>G1C1</b>		<b><u>Pre-discussion</u></b>	<b><u>Post-discussion</u></b>	<b><u>Degree of Change</u></b>
Heidi	<b><u>Causes</u></b>	<ul style="list-style-type: none"> <li>wanting attention because of younger children at cc</li> </ul>	<ul style="list-style-type: none"> <li>wanting attention because of busy family life</li> </ul>	<b>moderate</b>
	<b><u>Solutions</u></b>	<ul style="list-style-type: none"> <li>positive attention – special jobs</li> </ul>	<ul style="list-style-type: none"> <li>[successive]</li> <li>"solve the problem myself"</li> <li>parent communication</li> <li>terminate contract</li> </ul>	<b>considerable</b>
Cara	<b><u>Causes</u></b>	<ul style="list-style-type: none"> <li>typical behavior (though extreme)</li> <li>wanting attention</li> </ul>	<ul style="list-style-type: none"> <li>lack of consistent discipline at home</li> </ul>	<b>considerable</b>
	<b><u>Solutions</u></b>	<ul style="list-style-type: none"> <li>seclusionary time-out</li> </ul>	<ul style="list-style-type: none"> <li>time-out</li> <li>praise for positive behavior</li> <li>rewards – punishments in form of privileges</li> <li>termination (last resort)</li> </ul>	<b>considerable</b>
Gretchen	<b><u>Causes</u></b>	<ul style="list-style-type: none"> <li>wanting attention because of younger children at cc</li> </ul>	<ul style="list-style-type: none"> <li>wanting attention</li> </ul>	<b>slight/no</b>
	<b><u>Solutions</u></b>	<ul style="list-style-type: none"> <li>[successive]</li> <li>establish awareness with child</li> <li>seclude child</li> <li>state rules</li> <li>punishment in form of loss of privileges</li> </ul>	<ul style="list-style-type: none"> <li>ignore disruptive behavior</li> <li>reward other children's positive behavior</li> </ul>	<b>considerable</b>
Beth	<b><u>Causes</u></b>	<ul style="list-style-type: none"> <li>wanting attention because of home situation</li> <li>wanting attention because of other children in cc</li> </ul>	<ul style="list-style-type: none"> <li>wanting attention because of home situation</li> </ul>	<b>moderate</b>
	<b><u>Solutions</u></b>	<ul style="list-style-type: none"> <li>praise positive behavior</li> <li>give individual attention</li> </ul>	<ul style="list-style-type: none"> <li>termination</li> </ul>	<b>considerable</b>
Ellen	<b><u>Causes</u></b>	<ul style="list-style-type: none"> <li>wanting attention</li> <li>boredom</li> <li>problem at home</li> </ul>	<ul style="list-style-type: none"> <li>[no reference to cause; implies further observation is necessary to determine cause]</li> </ul>	<b>considerable</b>
	<b><u>Solutions</u></b>	<ul style="list-style-type: none"> <li>establish rules and consequences</li> <li>behavioral reinforcement chart</li> </ul>	<ul style="list-style-type: none"> <li>observational assessment tool</li> <li>outside professional help</li> <li>termination (last resort)</li> </ul>	<b>considerable</b>
Diana	<b><u>Causes</u></b>	<ul style="list-style-type: none"> <li>insecurity because of non-existent or inconsistent discipline at home</li> </ul>	<ul style="list-style-type: none"> <li>lack of consistent discipline</li> </ul>	<b>slight/no</b>
	<b><u>Solutions</u></b>	<ul style="list-style-type: none"> <li>[no reference to solution]</li> </ul>	<ul style="list-style-type: none"> <li>consistent discipline at cc</li> <li>behavioral reinforcement chart</li> <li>rewards/punishments using privileges (special jobs)</li> <li>communication with parents</li> </ul>	<b>considerable</b>
Faye	<b><u>Causes</u></b>	<ul style="list-style-type: none"> <li>typical behavior</li> <li>wanting attention</li> </ul>	<ul style="list-style-type: none"> <li>lack of attention at home</li> </ul>	<b>moderate</b>
	<b><u>Solutions</u></b>	<ul style="list-style-type: none"> <li>exclusionary time-out, child-controlled</li> </ul>	<ul style="list-style-type: none"> <li>decrease in activities</li> <li>verbal warning, then exclusionary time-out, child controlled</li> <li>terminate (last resort)</li> </ul>	<b>moderate</b>

## E-4: SAMPLE INDIVIDUAL SUMMARY PAGE

## DIANA

## Case summaries:

## Case 1:

<i>Causes</i>	<i>Solutions</i>
<b>Slight/no change (1):</b> insecurity due to non-existent or inconsistent discipline at home <b>TO</b> lack of consistent discipline	<b>Considerable change (3):</b> from no suggestions <b>TO</b> consistent discipline + behavior reinforcement chart + rewards/punishments using privileges + communication with parents

## Case 2:

<i>Causes</i>	<i>Solutions</i>
<b>Moderate change (2):</b> learned helplessness/controlling mother + insecurity/insufficient attention from parents + fear/unstable home life <b>TO</b> stressful home environment	<b>Considerable change (3):</b> from no suggestions <b>TO</b> physical affection + active listening/talking with child

## Case 3:

<i>Causes</i>	<i>Solutions</i>
<b>Moderate change (2):</b> reaction to mothering + imitating older sibs + physical problem + wanting attention <b>TO</b> attention-getting that became learned behavior + reaction to stressful home mealtimes	<b>Considerable change (3):</b> professional consultation <b>TO</b> statement of expectations/consequences + consistency + communication with parents

## Post-forum questionnaire:

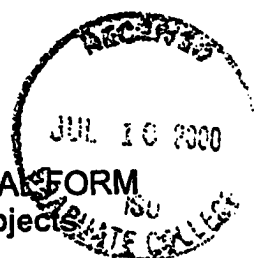
*Skills change in guidance and discipline:*

**Slight improvement (2)**

## Phone survey:

*Change in approach to handling challenging behavior:*

**Moderate change:** In certain situations, you know - a couple of those were really hard! - I think that will help if I have a similar....it won't...you'll never have one just like it... there's always that...I'll get that little click in my head, "this happened once...." So, day to day things, I don't think so, but I think on those harder situations and stuff I'll definitely remember the readings and things because it covered not only a little bit of what was happening with those situations but a little bit of something else, so... I kept all those so I can kinda remember those.



**APPENDIX F: HUMAN SUBJECTS REVIEW COMMITTEE APPROVAL FORM**  
**Information for Review of Research Involving Human Subjects**  
**Iowa State University**

(Please type and use the attached instructions for completing this form)

1. Title of Project Family Child Care Forum Study

2. I agree to provide the proper surveillance of this project to insure that the rights and welfare of the human subjects are protected. I will report any adverse reactions to the committee. Additions to or changes in research procedures after the project has been approved will be submitted to the committee for review. I agree to request renewal of approval for any project continuing more than one year.

Kathy L. Reschke  
 Typed name of principal investigator

6-10-00  
 Date

Kathy L. Reschke  
 Signature of principal investigator

Human Dev. & Family Studies  
 Department

1322 Elm Hall, Suite 1123  
 Campus address

294-5702  
 Phone number to report results

3. Signatures of other investigators

Date

Relationship to principal investigator

Susan A. Hegland

7-5-00

major professor

4. Principal investigator(s) (check all that apply)

☐ Faculty

☐ Staff

☒ Graduate student

☐ Undergraduate student

5. Project (check all that apply)

☐ Research

☒ Thesis or dissertation

☐ Class project

☐ Independent Study (490, 590, Honors project)

6. Number of subjects (complete all that apply)

# adults, non-students: 8-12 # minors under 14:            # minors 14 - 17:           

# ISU students:            other (explain):           

7. Brief description of proposed research involving human subjects: (See instructions, item 7. Use an additional page if needed.)

Description: The Family Child Care Forum Study has been designed to study the impact of a computer-mediated (i.e. online) training activity on the small group of family child care providers who will participate. The training activity, or FCC Forum, will be a problem-based learning activity that will take place over seven weeks. The participants will examine and discuss the solutions to three cases involving typical problem behavior that one might encounter as a family child care provider. It is expected that participants will need to commit approximately three hours per week to participation in the Forum discussions. I (the PI) will serve as a facilitator for the Forum, providing assistance through the problem-solving process and support in the online environment. The goals of the Forum with regard to the participants are that they experience a training activity that is relevant to their practice, meaningful and effective as a learning experience, and convenient and beneficial in its delivery format. The participants will be able to use this training to meet state requirements for child care training and can earn CEU's if they wish. (cont. on separate page)

(Please do not send research, thesis, or dissertation proposals.)

8. Informed Consent: ☒ Signed informed consent will be obtained. (Attach a copy of your form.)

☐ Modified informed consent will be obtained. (See instructions, item 8.)

☐ Not applicable to this project.

Last name of Principal Investigator Reschke**Checklist for Attachments and Time Schedule****The following are attached (please check):**

12. ☒ Letter or written statement to subjects indicating clearly:
- a) the purpose of the research
  - b) the use of any identifier codes (names, #'s), how they will be used, and when they will be removed (see item 17)
  - c) an estimate of time needed for participation in the research
  - d) if applicable, the location of the research activity
  - e) how you will ensure confidentiality
  - f) in a longitudinal study, when and how you will contact subjects later
  - g) that participation is voluntary; nonparticipation will not affect evaluations of the subject
13. ☒ Signed consent form (if applicable)
14. ☐ Letter of approval for research from cooperating organizations or institutions (if applicable)
15. ☒ Data-gathering instruments

16. Anticipated dates for contact with subjects:

**First contact****Last contact**July 1-August 15, 2000November 12-18, 2000

Month/Day/Year

Month/Day/Year

17. If applicable: anticipated date that identifiers will be removed from completed survey instruments and/or audio or visual tapes will be erased:

Dec. 1, 2000

Month/Day/Year

18. Signature of Departmental Executive Officer

Date

Department or Administrative Unit

Marnice MacQuinn7-5-00HD FS

19. Decision of the University Human Subjects Review Committee:

☒ Project approved☐ Project not approved☐ No action required

Name of Human Subjects in Research Committee Chair

Date

Signature of Committee Chair

Patricia M. Keith7-12-00PMKeith

## REFERENCES

- Ahern, T. C. & El-Hindi, A. E. (2000). Improving the instructional congruency of a computer-mediated small-group discussion: A case study in design and delivery. *Journal of Research on Computing in Education*, 32, 385-400.
- Albanese, M. A., & Mitchell, S. (1993). Problem-based learning: A review of literature on its outcomes and implementation issues. *Academic Medicine*, 68, 52-81.
- Annie E. Casey Foundation (1998). Child care you can count on: Model programs and policies [On-line]. Available: <http://www.aecf.org/publications/child/afford.htm>.
- Azer, S. L., & Bowie, P. (2000). *Training requirements in child care licensing regulations: 2000*. Boston, MA: Wheelock College Institute for Leadership and Career Initiatives.
- Azer, S. L., & Hanrahan, C. (1998). *Early care and education career development initiatives in 1998*. Boston, MA: Wheelock College Institute for Leadership and Career Initiatives.
- Barrett, E. & Lally, V. (1999). Gender differences in an on-line learning environment. *Journal of Computer Assisted Learning*, 15, 48-60.
- Barrows, H. S. (1998). The Essentials of problem-based learning. *Journal of Dental Education*, 62, 630-633.
- Bonk, C. J., Hansen, E. J., Grabner-Hagen, M. M., Lazar, S. A., Mirabelli, C. (1998). Time to "Connect": Synchronous and asynchronous case-based

- dialogue among preservice teachers. In C. J. Bonk and K. S. King (Eds.), *Electronic collaborators* (pp. 289-314). Mahwah, NJ: Erlbaum.
- Bullen, M. (1997). *A case study of participation and critical thinking in a university level course delivered by computer conferencing*. Unpublished doctoral dissertation, University of British Columbia, Vancouver, Canada [On-line.] Available: <http://courses.cstudies.ubc.ca/~bullen/Diss/thesis.doc>.
- Cappizzano, J., Adams, G., & Sonenstein, F. (2000). *Child care arrangements for children under five: Variation across states* (New Federalism: National Survey of America's Families, No. B-7) [On-line.] Available: [http://newfederalism.urban.org/pdf/anf\\_b7.pdf](http://newfederalism.urban.org/pdf/anf_b7.pdf).
- Child Care Bureau, Administration for Children and Families, & U.S. Department of Health and Human Services (2001). *Child Care and Development Fund: Report of state plans for the period 10/01/99 to 9/30/01* [On-line]. Available: <http://nccic.org/pubs/CCDFStat.pdf>.
- Child Care Resource and Referral of Central Iowa (2000). *Central Iowa Caregiver Survey Results*. Unpublished report.
- Dombro, A. L., & Modigliani, K. (1995). Family child care providers speak about training, trainers, accreditation, and professionalism. New York, NY: Families and Work Institute. (ERIC Document Reproduction Service No. ED388384)
- Duffy, T. M., & Cunningham, D. J. (1996). Constructivism: Implications for the design and delivery of instruction. In D. H. Jonassen (Ed.), *Handbook of*



*research on educational communications and technology* (pp. 170 – 198).

London: Macmillan.

Eastmond, D. (1995). *Alone but together: adult distance study through computer conferencing*. Cresskill, N.J. : Hampton Press.

Fahy, P. J. (2001). Addressing some common problems in transcript analysis. *International Review of Research in Open and Distance Learning*, 1, [Online]. Available: <http://www.irrodl.org/content/v1.2/research.html#Fahy>.

Fahy, P. J., Crawford, G., Ally, M., Cookson, P., Keller, V., & Prosser, F., (2000). The development and testing of a tool for analysis of computer mediated conferencing transcripts. *Alberta Journal of Education Research*, 46, 85-88.

Gallagher, S. (1997). Problem-based learning: Where did it come from, what does it do, and where is it going? *Journal for the Education of the Gifted*, 20, 332-362.

Garcia, A. C., & Jacobs, J. B. (1999). Understanding the turn-taking system in quasi-synchronous computer-mediated communication. *Research on Language and Social Interaction*, 32, 337-367.

Grasso, J., & Fosburg, S. (1980). Family Day Care in the United States: Family Day Care Systems. (Final report of the National Day Care Home Study, volume 5). Cambridge, MA: Abt Associates, Inc.,. (ERIC Document Reproduction Service No. ED211222.

Gunawardena, C.N., Lowe, C.A., & Anderson, T. (1997). Analysis of a global online debate and the development of an interaction analysis model for

- examining social construction of knowledge in computer conferencing. *Journal of Educational Computing Research*, 17(4), 397-431.
- Haneda, M. and Wells, G. (2000) Writing in knowledge-building communities. *Research in the Teaching of English*, 34, 430-457.
- Harrington, H. L., & Hathaway, R. S. (1994). Computer conferencing, critical reflection, and teacher development. *Teaching and Teacher Education*, 10, 543-554.
- Hatano, G., & Inagaki, K. (1991). Sharing cognition through collective comprehension activity. In L. B. Resnick, J. M. Levine, & S. D. Teasley (Eds.), *Perspectives on socially shared cognition* (pp. 331-348). Washington, DC: American Psychological Association.
- Hawkes, M. (1999). Exploring network-based communication in teacher professional development. *Educational Technology*, 39, 45-52.
- Henri, F. (1991). Computer conferencing and content analysis. In A. R. Kaye (Ed.), *Collaborative learning through computer conferencing*. Heidelberg: Springer-Verlag.
- Hillman, D. C. A. (1999). A new method for analyzing patterns of interaction. *The American Journal of Distance Education*, 13, 37-45.
- Hmelo, C. E., Gotterer, G. S., Bransford, J. D. (1997). A theory-driven approach to assessing the cognitive effects of PBL. *Instructional Science*, 25, 387-408.

- Iowa Child Care Resource and Referral (1998). *1997-98 Child care status report*.  
Des Moines, IA: Iowa Child Care and Early Education  
Network/Information Systems Committee.
- Iutovich, J., Fiene, R., Johnson, J., Koppel, R., & Langan, F. (1997). Investing in  
our children's future: The path to quality child care through the  
Pennsylvania child care/early childhood development training system.  
(ERIC Document Reproduction Service No. ED 414 093)
- Jonassen, D., Davidson, M., Collins, M., Campbell, J., & Haag, B. B. (1995).  
Constructivism and computer-mediated communication in distance  
education. *American Journal of Distance Education*, 9, 7-26.
- Kagan, S., & Cohen, N. (1996). *Reinventing early care and education: A vision  
for a quality system*. San Francisco, CA: Jossey-Bass Publishing.
- Kanuka, H., & Anderson, T. (1998). Online social interchange, discord, and  
knowledge construction. *Journal of Distance Education*, 13, 57-74.
- Kontos, S., Howes, C., & Galinsky, E. (1996). Does training make a difference to  
quality in family child care? *Early Childhood Research Quarterly*, 11, 427-  
445.
- Kontos, S., Howes, C., Shinn, M., & Galinsky, E. (1994). *Quality in family child  
care and relative care*. New York: Teachers College Press.
- Kontos, S., Howes, C., Shinn, M., & Galinsky, E. (1995). Does training make a  
difference to quality in family child care? *Early Childhood Research  
Quarterly*, 11, 427-445.

- Korthagen, F. A., Kessels, J. P. A. M., (1999). Linking theory and practice: Changing the pedagogy of teacher education. *Educational Researcher*, 4-17.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. New York: Cambridge University Press.
- McDonald, J., & Gibson, C. C. (1998). Interpersonal dynamics and group development in computer conferencing. *American Journal of Distance Education*, 12, 7-25.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis* (2<sup>nd</sup> ed.). Thousand Oaks, CA: Sage.
- Naidu, S., & Oliver, M. (1996). Computer-supported collaborative problem-based learning: An instructional design architecture for virtual learning in nursing education. *Journal of Distance Education*, 11, 1-22.
- National Association for Family Child Care (n.d.). NAFCC and accreditation. Retrieved July 28, 2001, from <http://www.nafcc.org/accred/accred.html>.
- National Institute of Child Health and Human Development (1997). Infant child care and attachment security: Results of the NICHD study of early child care. *Child Development*, 68, 860-879.
- National Institute of Child Health and Human Development (1998). Early child care and self-control, compliance, and problem behavior at twenty-four and thirty-six months. *Child Development*, 69, 1145-70.

- National Center for Education Statistics (1996). *Child care and early education program participation of infants, toddlers, and preschoolers*. Washington, DC: NCES.
- National Resource Center for Health and Safety in Child Care (n.d.). *Individual States' Child Care Licensure Regulations*. Retrieved August 4, 2001, from <http://nrc.uchsc.edu/states.html>.
- Newman, D. R., Johnson, C., Webb, B., & Cochrane, C. (1997). Evaluating the quality of learning in computer supported co-operative learning. *Journal of the American Society for Information Science*, 48, 484-495.
- Norman, G. R., Trott, A. D., Brooks, L. R., & Smith, E. K. (1994). Cognitive differences in clinical reasoning related to postgraduate training. *Teaching and Learning in Medicine*, 6, 114-120.
- Peisner-Feinberg, E. S., Burchinol, M. R. (1997). Relations between preschool children's child-care experiences and concurrent development: The cost, quality, and outcomes study. *Merrill-Palmer Quarterly*, 43, 451-477.
- Riel, M., & Harasim, L. (1994). Research perspectives on network learning. *Machine-mediated Learning*, 4, 91-113.
- Ross, J. A. (1996). The influence of computer communication skills on participation in a computer conferencing course. *Journal of Educational Computing Research*, 15, 37-52.
- Ruberg, L. F., Moore, D. M., Taylor, C. D. (1996). Student participation, interaction, and regulation in a computer-mediated communication

- environment: A qualitative study. *Journal of Educational Computing Research*, 14, 243-268.
- Schlager, M., Fusco, J., & Schank, P. (in press). Evolution of an online education community of practice. In K. A. Renninger & W. Shumar (Eds.), *Building virtual communities: Learning and change in cyberspace*. New York: Cambridge University Press.
- Schön, D. A. (1990). *Educating the reflective practitioner*. San Francisco, CA: Jossey-Bass.
- Starnes, L. D. B. (1994). The knowledge sources of Iowa family child care providers. (ERIC Document Reproduction Service No. ED373890).
- Todd, C. M. & Deery-Schmitt, D. M. (1996). Factors affecting turnover among family child care providers: A longitudinal study. *Early Childhood Research Quarterly*, 11, 351-376.
- Vartuli, S. (1989). Family day care provider training and assessment. Paper presented at the biennial meeting of the Society for Research in Child Development, Kansas City, MO.
- Vernon, D. T. A., & Blake, R. L. (1993). Does problem-based learning work? A meta-analysis of evaluative research. *Academic Medicine*, 68, 550-562.
- Voiskounsky, A. E. (1997). Telelogue conversations. *Journal of Computer Mediated Communication*, 2, [On-line]. Available: <http://www.ascusc.org/jcmc/vol2/issue4/voiskounsky1.html>
- Weedman, J. (1999). Conversation and community: The potential of electronic conferences for creating intellectual proximity in distributed learning

environments. *Journal of the American Society for Information Science*, 50, 907-928.

Wells, G. (1999). *Dialogic inquiry: Toward a sociocultural practice and theory of education*. Cambridge, UK: Cambridge University Press.

Whitebook, M., Howes, C. & Phillips, D.A. (1990). *Who cares? Child care teachers and the quality of care in America. Final report of the National Child Care Staffing Study*. Oakland, CA: Child Care Employee Project.

Winiecki, D. J. (in press). Reconstructing talk: Talk-in-interaction in the asynchronous classroom. In D. Penrod (Ed.), *WebTalk: Writing as conversation*. Hillsdale, NJ: Lawrence Erlbaum.