

AN ABSTRACT OF THE THESIS OF

Rebecca Ward Pettit for the degree of Doctor of Philosophy in Human Development and Family Studies presented on July 14, 1998. Title: Selected Factors Contributing to Preservice Teachers' Perceptions of the Social and Cognitive Competence of Preschool Children.

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As increasing numbers of poor children enter child care programs due to changes in work requirements under the Welfare Reform Act, there is a critical need to examine factors that may affect the quality of care that these children receive. One factor that has received limited attention in the literature is how preservice teachers' perceptions of young children may vary according to characteristics of the child and the context in which the child exists. The current study employed an ecological person-process-context model to examine differences in preservice teachers' perceptions of children's social and cognitive competence.

The sample for this study consisted of 68 children and 28 preservice teachers enrolled at a university-based preschool in Oregon. The preschool was the only site in the state featuring an integrated program in which Head Start children were enrolled with non-Head Start children under an Oregon Prekindergarten Program (OPP) grant.

Hierarchical regression was used to determine if the contextual factor of enrollment in OPP would be a more significant contributor to preservice teachers' perceptions of children's social and cognitive competence than the person factors of child age, sex, race/ethnicity, temperament and actual child competence. Qualitative data was also collected through focus group discussions with preservice teachers.

Sex was the most important contributor to preservice teachers' perceptions of children's social competence, followed by enrollment in OPP, actual social competence, and age. For preservice teachers' perceptions of children's cognitive competence, age

was the most significant contributor, followed by actual cognitive competence, enrollment in OPP, and sex. While enrollment in OPP was not the most significant contributor to preservice teachers' perceptions of children's social and cognitive competence, it was still a significant contributor, beyond other person variables. For both social and cognitive competence, preservice teachers rated children enrolled in OPP lower than their non-OPP peers, girls higher than boys, and older children higher than younger children, even when the unique contribution of children's actual competence was included. Qualitative data generally supported these findings. Implications for research, policy, and practice are discussed.

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**Selected Factors Contributing to Preservice Teachers' Perceptions of the
Social and Cognitive Competence of Preschool Children**

by

Rebecca Ward Pettit

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Rebecca Ward Pettit, Author

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*"And what is as important as knowledge?" asked the mind.
"Caring, and seeing with the heart," answered the soul.*

- Flavia

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SELECTED FACTORS CONTRIBUTING TO PRESERVICE TEACHERS' PERCEPTIONS OF THE SOCIAL AND COGNITIVE COMPETENCE OF PRESCHOOL CHILDREN

CHAPTER 1

INTRODUCTION

Children in poverty face multiple barriers to optimal growth and development. Studies have shown that poor children are at risk of experiencing what Schorr (1989) terms "rotten outcomes." Poor children are more likely than their nonpoor peers to be born at low birth weight, to experience school underachievement and failure, to be hungry or malnourished, to have more punitive and inconsistent parents, to have inadequate or poor quality medical care, and to die before age six. (Duncan, Brooks-Gunn & Klebanov, 1995; National Center for Children in Poverty, 1996; Robertson, Elder, Skinner, & Conger, 1991; Sidel, 1986). According to the National Center on Child Poverty (1996), young child poverty rates skyrocketed between 1979 and 1994, with a 39% increase in children under age six living in families with incomes under the poverty threshold (i.e., \$15,141 for a family of 4 in 1994).

While child poverty rates have increased, funding for programs to ameliorate the effects of poverty on children has decreased (Super, Parrott, Steinmetz, & Mann, 1996). One of the most significant examples of funding decreases is the passage of the Welfare Reform Act of 1992. It is estimated that \$55 billion will be cut from programs for low income families by 2001 (Congressional Budget Office, 1995). The majority of these cuts will be made in food stamps, Supplemental Security Income, and assistance to legal immigrants. It is predicted that disabled poor children and low income working families will be among the groups most negatively impacted by program cuts (Super, et al., 1996).

One of the most significant reforms in the legislation is the increase in work requirements for parents receiving assistance. While the Act provides for increased

funding for child care, there is some indication that the need for care will surpass the availability of funds (Super, et. al, 1996). Of even greater concern is that child care availability and quality cannot be guaranteed (Adams & Oxendine Poersch, 1997).

With the projected increase in the number of poor children entering child care programs, a more critical examination of specific quality indicators is needed. The National Academy of Early Childhood Programs (NAECP), the child care program accreditation division of the National Association for the Education of Young Children (NAEYC), lists the following categories of quality indicators:

1. Interaction among staff and children
2. Curriculum
3. Staff-parent interaction
4. Staff qualifications and development
5. Administration
6. Staffing
7. Physical environment
8. Health and safety
9. Nutrition and food service
10. Regular staff and program evaluation (1984).

It is noteworthy that the first category of quality indicators listed by NAEYC is staff-child interactions. In fact, research repeatedly has shown that the single most important determinant of quality in child care programs is the quality of interactions between caregivers and children (Elicker & Fortner-Wood, 1995; Howes, Phillips, & Whitebrook, 1992; Kontos, Howes, Shinn, & Galinsky, 1994; Whitebrook, Howes & Phillips, 1989).

While research has shown that positive teacher-child interactions are critical in ensuring quality care for children, relatively little is known about the structure of these interactions and what contributes to variations in teacher-child interactions (Kontos & Wilcox-Herzog, 1997). According to these researchers, there is some indication that child characteristics, such as personal style, sex, race/ethnicity, and socioeconomic status may impact teacher behavior and response. However, research is limited, especially on how child characteristics other than sex impact teacher-child interactions.

As child care enrollment increases for young children from low income families in response to changes in poverty programs under the Welfare Reform Act, there is a critical need to investigate variations in the quality of care that low income children receive in comparison with their higher income peers. As has been noted, the teacher-child relationship is of utmost importance in determining the quality of care that children receive. One aspect of the teacher-child relationship that has received limited scrutiny in the literature is how teachers' perceptions of children may vary according to characteristics of the child (Kontos & Wilcox-Herzog, 1997). In addition, research primarily has focused on teachers in community centers or family day care homes as opposed to preservice, or student teachers in laboratory settings (Kontos & Wilcox-Herzog, 1997). The current study will address these research gaps by applying a contextual model to the exploration of preservice teachers' perceptions of the social and cognitive competence of preschool children from different income levels.

Theoretical Framework

Researchers have called for a more thorough investigation of the developmental consequences of poverty on children, noting ". . . too little attention is given to extrafamilial, proximal factors that link economic hardship to children's psychological functioning and development . . ." (McLoyd, 1994, p. 65). Studying the context within which low income children are embedded holds promise in helping to identify factors that may contribute to negative or positive developmental outcomes (Bronfenbrenner, 1986; McKinney, Abrams, Terry, & Lerner, 1994).

The importance of studying human development in context has been emphasized by researchers for the past 20 years (Bronfenbrenner, 1977, 1986; Bronfenbrenner & Crouter, 1983; Garbarino, 1992; Lerner, 1979, 1995; McKinney, et al., 1994). Termed the "ecology of human development," by Urie Bronfenbrenner or "developmental contextualism," by Richard Lerner, this body of work embraces the idea that individuals

do not live in vacuums, but are impacted by the environments that surround them. In addition, this theoretical perspective acknowledges the reciprocity of interactions between individuals and the components of the various settings in which they are enveloped. Individuals both impact and are impacted by their surrounding environments. In other words, ". . .the bidirectional socialization that occurs between children and parents is embedded in a still more complex system of social networks and of societal, cultural, and historical influences" (Lerner, 1995, p. 27).

Bronfenbrenner (1977), conceptualized the individual as developing within the context of spatial environments, which he termed the microsystem, mesosystem, exosystem, and macrosystem. The microsystem consists of direct interactions that an individual engages in that take place over time within a setting. These interactions are based on activities, roles, and interpersonal relationships. For example, microsystems might include relationships between a child and his or her family and peers within the home or school.

The mesosystem consists of interactions between the microsystems within which the child is embedded that ultimately impact the development of the child. For example, communication between teacher and parent about a negative behavioral incident involving a child at school may affect interactions between parent and child at home and vice versa.

The exosystem provides a structure of rules and policies that do not directly involve the individual child, but do have an effect on the child's development. Examples of exosystem environments would be the workplace and social network of parents since these are domains within which children do not frequently interact. However, parental interactions within these domains may influence an individual child's development. For example, the adequacy of income that parents receive may impact their child's health status and alter developmental potential if there is not enough money to ensure a nutritious diet.

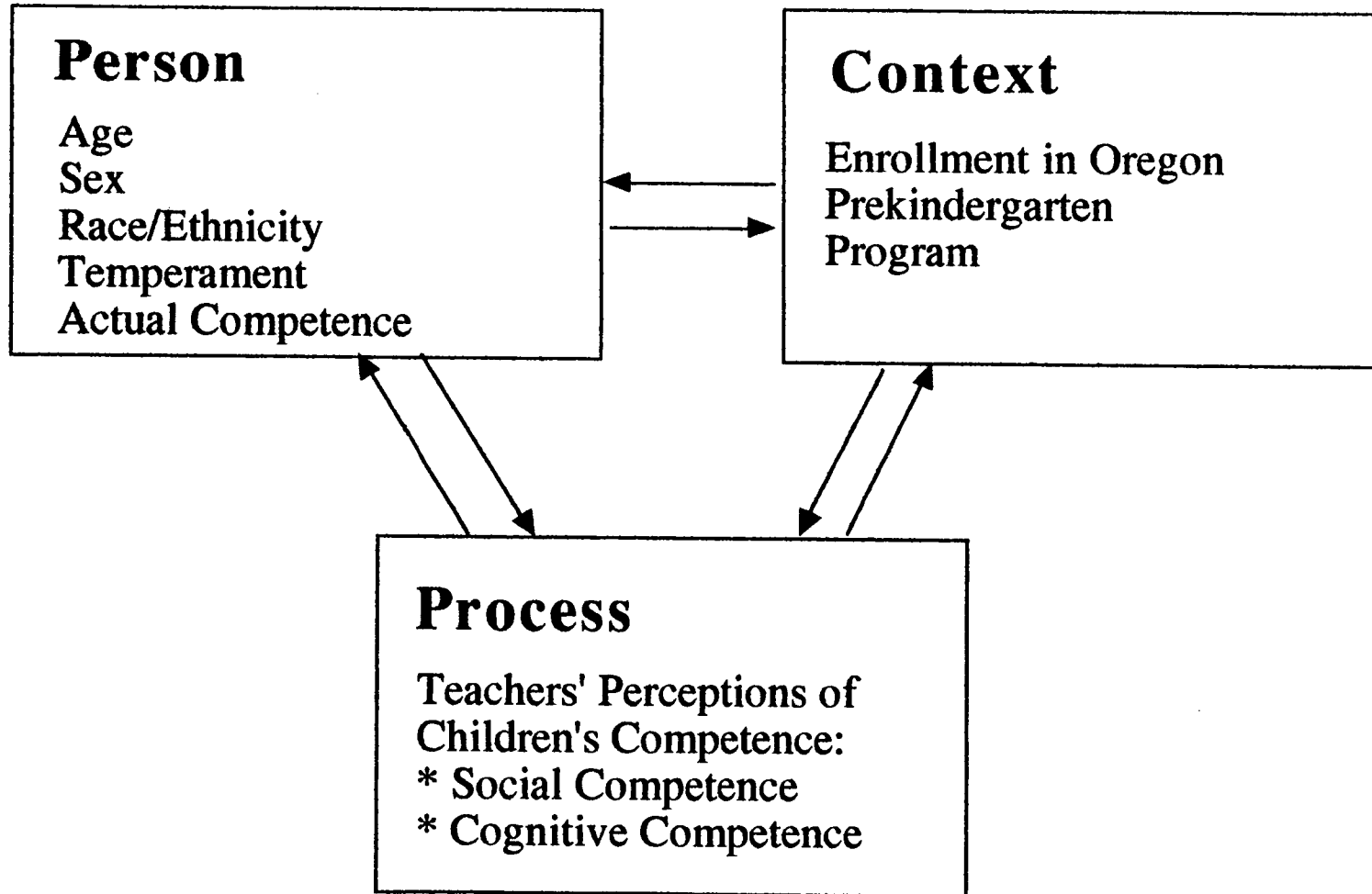
The macrosystem is the cultural milieu in which the individual is situated and consists of broad social ideals, technology, economics, and political emphasis. An illustration of how macrosystems may affect individual child development would be changes in economic policy that result in high rates of unemployment in an area. For example, legislation to reduce the amount of old growth timber harvested from national forests may result in widespread unemployment in a rural area. Parental unemployment may impact the child by prompting ecological transition, i.e., changes in physical setting, roles, and relationships with stressed parents.

Bronfenbrenner developed a model for studying human development in context, which he termed the "person-process-context model." According to this model, "developmental processes are assumed to vary as a joint function of biological and environmental factors" (Bronfenbrenner & Crouter 1983, p. 376). These researchers proposed that the person-process-context model could be applied to each of the environmental settings mentioned above (i.e., microsystem, mesosystem, exosystem, and macrosystem) to provide a basis for development-in-context research designs.

Purpose of the Study

This study assessed the contribution of both individual and contextual factors to the social and cognitive competence of preschool children. An exosystem person-process-context model was used to examine differences in the social and cognitive competence of preschool children as measured by preservice teachers' perceptions. A model of the theoretical framework may be found on page 6. It was hypothesized that contextual factors (i.e., family income) will be more significantly related to preservice teachers' perceptions of children's social and cognitive competence than person factors (i.e., child age, sex, race/ethnicity, temperament, and actual competence). The proposed hypotheses for the study follow:

Theoretical Framework



Hypothesis 1 - The contextual factor of child enrollment in the Oregon Prekindergarten Program will contribute more significantly to preservice teachers' perceptions of preschool children's social competence than will the person factors of age, sex, race/ethnicity, temperament, or actual social competence.

Hypotheses 2 - The contextual factor of child enrollment in the Oregon Prekindergarten Program will contribute more significantly to preservice teachers' perceptions of preschool children's cognitive competence than will the person factors of child age, sex, race/ethnicity, temperament, or actual social competence.

CHAPTER 2

REVIEW OF LITERATURE

The following literature review will explore individual characteristics and contextual factors that have been shown to impact the development of the social and cognitive competence of preschool children. Competence will be defined and connections between social and cognitive competence will be clarified. A final section will include identification and exploration of the impact of individual and contextual variables on teachers' perceptions of social and cognitive competence.

Competence Defined

If there is one point of agreement on the definition of competence in the existing literature it is that there is little agreement (Karoly & Steffen, 1982; Ogbu, 1981; Putallaz & Gottman, 1982; Zigler & Trickett, 1978). Researchers have defined competence in terms of individual motivations to effect change in the surrounding environment (White, 1959), instrumental skills that prepare the individual for entry into a culturally defined adult world (Ogbu, 1981), the capacity to achieve interpersonal and intellectual goals (Karoly & Steffen, 1982), and the manifestation of behaviors that prevent psychological or physical risk (Putallaz & Gottman, 1982).

Adding to the confusion over a global definition of competence is the fact that "competence" and "social competence" are not always viewed as mutually exclusive terms. While Karoly and Steffen (1982) divided competence into the two categories of interpersonal (or social) skills and intellectual (or cognitive) skills, Zigler and Trickett (1978) proposed that a more accurate picture of social competence include measurements of formal cognitive ability and achievement in addition to measures of emotional, motivational, and physical health and well-being variables.

The Zigler and Trickett view of social competence was developed in response to concerns regarding reliance on IQ and achievement tests as the primary outcome

measures for evaluating the effectiveness of preschool programs. Many have argued against assessing preschool children using uni-dimensional measures of competence, such as intelligence tests, because of the inaccuracy of such tests in predicting later academic success and adult adaptation (Anderson & Messick, 1974; O'Malley, 1977; Zigler & Trickett, 1978). Rather, studies have shown that young children's relationships with others, particularly with peers, are more accurate indicators of later functioning than cognitive measures (Parker & Asher, 1987; Pellegrini & Glickman, 1990). For example, in their review of the literature on peer relations and later adjustment, Parker and Asher (1987) found that children who experienced difficulties with peers (especially children who were rejected or aggressive) were more likely to drop out of school or to become involved in juvenile and adult criminality.

While there appears to be no cohesive global definition of competence, Waters and Sroufe (1983) synthesized many of the existing concepts by defining competence as ". . . the ability to generate and coordinate flexible, adaptive responses to demands and to generate and capitalize on opportunities in the environment" (p. 80). This definition acknowledges the individual, interactional, and contextual components of competence. Karoly and Steffen (1982) lent support to this definition by promoting a relativist stance to the study of competence. They separated the components of competence into interpersonal (or social) skills and intellectual (or cognitive) skills and stated that success in either skill area will be judged differently depending on the time frame, cultural and age norms, the level of analysis, the ease or difficulty of social or cognitive tasks, and the characteristics of the observer.

Based on this review of competence definitions and for ease of organization and measurement, competence is conceptualized as consisting of two major areas in the current study: social competence and cognitive competence. While these two major areas of competence will be discussed separately, it is important to recognize the interrelationships between the two concepts.

Social Competence

Although definitions of social competence vary, there is agreement that the primary nature of social competence lies in interactions between the developing individual and others in his or her surrounding environment (Karoly & Steffen, 1982; Ramsey, 1988; Zigler & Trickett, 1978). According to Wright (1980), social competence is ". . . initiated social interaction which is positive in quality and effective in achieving social goals" (p. 18). The focus on effectiveness has been reiterated by other researchers, who have found interactional effectiveness to be more important than the quality or frequency of interaction in determining social competence (Pellegrini & Glickman, 1990; Wine, 1981; Wright, 1980; Zigler & Trickett, 1978).

While White (1979) stressed the importance of assessing young children's interactions with both peers and adults in studying social competence, others have determined that peer interaction is the most salient factor in the social competence of young children (Garner, Jones, & Miner, 1994; Parker & Asher, 1987; Waters & Sroufe, 1983; Wright, 1980). This may be due to much greater frequency of child-child interaction than adult-child interaction in early childhood (Ellis, Rogoff, & Cromer, 1981; Wright, 1980). It is within peer relationships that young children are challenged to learn socially adaptive behaviors (Wright, 1980).

According to Pellegrini & Glickman (1990), there is an age progression in the development of competence, with peer interaction skills hailed as the "hallmark" (p. 40) of competence for young children. One example is that peer interaction skills, such as those practiced through the dramatic play of young children, may develop into later literacy competencies (Pellegrini, 1985).

Models of social competence have been proposed by various researchers. According to Katz and McClellan (1997), the components of social competence include social skills, social knowledge and understanding, emotion regulation, and dispositions. Socially competent children exhibit positive social approach behaviors (Dodge, Pettit,

McClaskey, & Brown, 1986), understand cultural norms and customs (Gottman, 1983), are able to manage such emotions as anger, frustration, and fear (Cole, Michel & Teti, 1994), and exhibit prosocial dispositional behaviors such as empathy, generosity, and cooperation (Katz & McClellan, 1997).

Other models acknowledge the interdependence between social and cognitive processes. Burton White (1979) divided social competence into social and nonsocial abilities. Social abilities include developing relationships with adults (e.g., gaining attention and using adults as resources) and with peers (e.g., leading, following, competing, and expressing affection and hostility). Nonsocial abilities include linguistic competence, intellectual competence (e.g., perspective taking, dissonance sensing, anticipating consequences, dealing with abstractions, and making associations), and executive abilities (e.g., using resources effectively, planning and implementing multistep activities, and attentional capabilities).

Dodge and colleagues (1982) applied a cognitive-based social information processing model to the study of social competence. Social information processing includes encoding (attention, sensation, and perception of cues); interpretation (providing meaning to encoded cues); response search (accessing behavioral alternatives); response evaluation (evaluating the efficacy and consequences of alternatives); and enactment (executing chosen behavior using verbal and motor skills). This model is similar to one proposed by Meichenbaum, Butler, and Grusen (1981) in which the conceptualization of social competence consists of overt behaviors, cognitive processes, and cognitive structures. In interpersonal contexts, the individual utilizes thinking and information processing skills (cognitive processes) and attaches meaning (cognitive structures) to behavior alternatives that motivates or provides direction. The ultimate result is observable (overt) verbal or nonverbal social behavior.

Cognitive Competence

While social competence primarily is concerned with interactional abilities, cognitive competence encompasses the development and manifestation of intellectual abilities (Karoly & Steffen, 1982). The most common definition for these intellectual abilities is "higher mental processes" (Flavell, Miller & Miller, 1993, p. 2), that is ". . . processes or faculties by which knowledge is acquired and manipulated" (Bjorklund, 1995, p. 3). Major domains of cognitive competence include language, perception of objects and causality, representational knowledge, and numerical abstraction (Flavell, et al., 1993).

The study of cognitive competence has been approached in a variety of ways by researchers. While these theoretical approaches differ in focus, all share the view that cognition is a developmental process. As a developmental process, cognition is influenced by bidirectional structural and functional changes in mental processes over time (Bjorklund, 1995).

Cognitive development has been viewed as a biological adaptation to a complex environment in which assimilation (application of current knowledge to new objects and events) and accommodation (adjustment of knowledge in response to new information) work in tandem (Piaget, 1970). Some researchers have proposed that cognitive development follows a stage-like progression in which a single set of homogeneous factors, or domain-general abilities, influences thinking (Piaget, 1970). Others point to the heterogeneity of cognition and suggest that domain-specific abilities, such as language, may be found in modules in the brain that are not affected by other brain processes (Case, 1992; Fodor, 1983). Still others propose that the key to understanding cognitive competence is to focus on how information is retrieved and stored in a computer-like brain (Siegler, 1991).

As was noted above, cognitive processes play an integral part in the development of social competence. Inversely, social competence has been found to

impact the development of cognitive competence. For example, in a year-long study of the effects of peer relationships on the school adjustment and performance of 125 kindergarten children, Ladd (1990) found that children who were rejected by peers early in the year performed significantly lower on academic performance measures than did their non-rejected peers. In addition, researchers analyzing studies on peer relations and later personal adjustment found that low peer acceptance and aggressiveness resulted in increased school drop out rates (Parker & Asher, 1987). Although it may be argued that dropping out of school may indicate decreased cognitive competence, Parker and Asher noted that few studies have distinguished between intellectually competent drop outs and those who are less competent. Such findings point to the importance of including measures of actual cognitive competence when studying the effects of individual and contextual factors on selected outcome variables.

Teachers' Perceptions

According to Jussim's integrated theory on self-fulfilling prophecies, "Teachers develop expectations, teachers treat students differently depending on their expectations, and students react to this differential treatment in ways that confirm the expectations" (1986, p. 429). The effects of teacher expectations on academic attainment has been well documented. Thus, analyzing individual and contextual factors that may contribute to differential perceptions of children by teachers is an important avenue for research. In addition, focusing the analysis on the perceptions of preservice teachers may provide much needed information on the formation of differential expectations. Since there is a paucity of research on preservice teachers' perceptions of children, the following discussion will highlight research on contextual and individual variables that have been shown to impact teachers' perceptions of the social and cognitive competence of preschool children.

Socioeconomic Status

Poverty has detrimental effects on the social and cognitive competence of children (Duncan, Brooks-Gunn, & Klebanov, 1994). Researchers have found low income children to exhibit more nonverbal aggressive behaviors and fewer problem-solving strategies than higher income children (Ramsey, 1988; Spivak & Shure, 1974). In addition, children living in poverty are more likely than their nonpoor peers to experience decreases in cognitive competence throughout the preschool years, as measured by performance on IQ and achievement tests (Alexander & Entwistle, 1988; Belsky & Steinberg, 1978).

Ramsey (1988) used both teacher ratings and peer sociometric measures to determine differences in the social competence of 94 preschool children from low and middle socioeconomic (SES) groups. Teachers rated children in six categories of social competence, including willingness to help, appropriate help, empathy with others, social problem solving, friendly overtures, and sharing. Teachers rated low SES children significantly lower than middle SES children in all categories except friendly overtures. On the other hand, only a few significant differences between low and middle SES children were found in peer acceptance measures of social strategies, such as physically help, seek adult, share, reassure, order, and aggress. Low SES children were more likely than middle SES children to use aggressive actions whereas middle income children were more likely than low SES children to use sharing and reassuring. Correlations between summed teacher ratings and social strategies in the two SES groups helped to explain the discrepancy between teacher ratings and peer ratings. Children in both SES groups preferred peers who reassured, while teachers preferred low SES children who sought adult help or physically assisted others. Ramsey called for additional research on teachers' ratings of preschool children's social competence in integrated settings.

Miller and Schouten (1989) measured teachers' perceptions of preschool children in five competence domains, including cognitive, physical, social, appearance, and conduct. They found that SES, as measured by maternal educational level, was significantly related to children's cognitive and conduct competence. Teacher ratings of children's cognitive and conduct competence increased as maternal educational level increased. Miller and Schouten recommended that additional methods of measuring SES be used in future studies.

The current study addressed identified gaps in the literature on teachers' perceptions of preschool children's competence by studying children in an integrated preschool program. This integrated program is unique in that children who qualify for Head Start based on family income indicators of SES are enrolled with children who do not qualify for Head Start. In addition, the program provides a laboratory for preservice or student teachers to gain practical experience working with young children. Measures of both preservice teachers' perceptions and actual child behavior were included so that the contributions of children's actual behavior to preservice teachers' perceptions could be explored.

Temperament

Temperament refers to "individual differences in the strength, timing, and regularity of arousal and emotion" (Grusec & Lytton, 1988, p. 120). While researchers have proposed a variety of temperament factors (Goldsmith & Campos, 1982; Rothbart, Ahadi, & Hershey, 1994; Thomas & Chess, 1977), there is disagreement on the heritability of specific temperament factors. In a review of research on childhood temperament, Prior (1992), found consensus in the literature for three temperament factors. These factors include emotionality, activity, and sociability.

According to Buss and Plomin (1984), emotionality, activity and sociability may be defined in terms of frequency, duration, and amplitude. Thus emotionality may be

defined by frequency of distress (e.g., crying, hiding, etc.), length of time needed to return to a calm state, and the intensity of observed emotions. Activity may be defined by rates of walking and talking, persistence in engaging in high energy acts, and the intensity of movements. Sociability may be defined by the number and length of social contacts and preferences for social interaction rather than solitary activities. According to Thomas and Chess (1977), the impact of each of these factors on the developing child is dependent on the "goodness of fit" between the child and his or her environment. These findings have implications for the current study in that the "goodness of fit" between teacher and child may affect teacher expectations and teacher-child interactions.

The impact of temperament on social and cognitive development has been well documented, particularly in relation to the activity factor (Halvorson & Waldrop, 1973, 1976; Jewsuwan, Luster, & Kostelnick, 1993; Martin, 1989). In a longitudinal study of a non-clinical sample of young children, Halvorson and Waldrop (1976) found that 2-1/2 year old children with high activity levels performed significantly less competently on cognitive measures and were more likely to engage in domination of peers at follow-up five years later. Research has also shown activity level to be correlated with behavior problem scores in preschool children (Jewsuwan, Luster, & Kostelnick, 1993). Preschool children with high activity levels are more likely than less active peers to be rated as aggressive by teachers (Buss, Block, & Block, 1980). Given the impact of child activity level on actual competence and teacher ratings of behavior and competence, the current study included activity level as a measure of children's temperament.

Age, Sex, and Race/Ethnicity

Age, sex, and race/ethnicity are three additional individual child variables that may affect teachers' perceptions of children's social and cognitive competence. Justification for their inclusion in the current study follows.

Chronological age has been used as a marker to denote maturational changes in the social and cognitive competence of young children (Gesell, 1954; Piaget, 1952). While it is important to recognize that maturational changes do not take place at exactly the same age for every child, researchers have found age-related trends in both social and cognitive development. For example, there is an age-related progression in the play of young children (Parten, 1932; Sponseller, 1982), beginning with unoccupied behavior (i.e., observing, but not interacting) in toddlerhood and moving toward cooperative play in later preschool years.

Children's play also reflects changes in cognitive abilities. According to Smilansky (1968), toddlers explore objects in functional play, then progress to constructive play (i.e., creating with objects), and dramatic play (i.e., imagining objects are something else). Finally, toward the end of the preschool years, children are capable of playing games with rules. The sample for the current study consisted of children from 3 to 5 years of age. Because the social and cognitive abilities of 3 year olds may be much different than those of 5 year olds, age was included as an independent variable.

The fact that teachers' perceptions of children's competence is affected by children's sex is well established (Ben Tsvi-Mayer, Hertz-Lazarowitz & Safir, 1987; Fagot, 1984; Ramsey, 1988). In a naturalistic observation of 9 teachers and 65 children, Ehrensaft (1977) found that, although teachers in the study stated that they treated all children in an equalitarian way, teachers were significantly more likely to initiate contact and interact with boys than with girls.

Ben Tsvi-Mayer, Hertz-Lazarowitz, and Safir (1987), in their study of 300 teachers and student teachers, also found that boys were more likely than girls to occupy the minds of their teachers after school hours and were rated as better students than their female peers. On the other hand, Maccoby and Jacklin (1974) reviewed the literature on sex differences and found that girls get better grades. However, it has been suggested

that neatness and conformity may play a part in girls' academic achievement (Brophy & Good, 1974).

There is some disagreement on the strength of sex differences on cognitive competence. For example, in the Maccoby & Jacklin (1974) review of literature on sex differences, girls scored significantly higher than boys on reading and verbal abilities. However, Hyde (1981) reanalyzed the Maccoby & Jacklin data using a meta-analysis method, in which the size of the effect was considered. While differences between girls and boys were statistically significant, the magnitude of the differences was only .24 of a standard deviation, indicating low effect size. Subsequent meta-analytic studies provided support for Hyde, adding that the effect size appears to be getting smaller (Feingold, 1988; Hyde & Linn, 1988).

Teachers are more likely to rate girls higher on social skills, such as effective helping (Ramsey, 1988) and to rate boys higher on behavior problem measures (Ben Tsvi-Mayer, et al., 1989). Teachers are also more likely to reinforce quiet play, typically characteristic of girls, in both sexes and to give boys significantly more verbal attention than girls (Fagot, 1984). Kedar-Voivodas (1983) posited that teachers favor children who exhibit passive, conforming behavior that is compatible with the female sex role over children who exhibit the more assertive and active behavior associated with the male sex role. Since children's sex has been found to affect teachers' perceptions of children's social and cognitive competence, sex was included as an independent variable in the current study.

Race/ethnicity was also included as an independent variable primarily because of its relation to SES. According to Huston, McLoyd, and Garcia Coll (1994, p. 277), "It is questionable whether 'effects' of race/ethnicity on developmental outcomes can be truly separated from the effects of SES indicators, unless variability within ethnic groups is addressed." Although the majority of children living in poverty are white, African American and Hispanic children are more likely to live in poverty than other

groups. For example, while only 29% of children under age 6 are African American or Hispanic, these children represent 55% of children under age 6 living in poverty (National Center for Children in Poverty, 1995). Thus it is important to include race/ethnicity when examining the possible contribution of family income to teachers' perceptions of children's social and cognitive competence.

Beyond its importance to SES, there is some indication that teachers' perceptions may impact the cognitive competence of children differently depending on the race of the child. In a study of cognitive achievement in the first two years of formal schooling, Alexander & Entwistle (1988) found that teachers' marks were twice as important in predicting achievement scores in math for African American children than for whites. The authors conclude, ". . . ethnic status has pervasive effects and teachers' evaluation and judgments are of increasing importance with passage of time" (p. 98). As prior discussion has shown, social and cognitive competence are interrelated. It is thus important to include ethnicity as an independent variable when studying teachers' perceptions of both the social competence and the cognitive competence of preschool children.

In summary, research has demonstrated that teachers' evaluations of children's social and cognitive competence are influenced by a variety of factors. Bronfenbrenner's person-process-context model provides a framework for the systematic examination of these factors. The review of literature has demonstrated the importance of analyzing the influence of person and context factors on teachers' perceptions of children's social and cognitive competence. Research has shown that person factors, such as children's age, sex, race/ethnicity, and temperament may be important variables in determining teachers' perceptions of children's social and cognitive competence. In addition, the influence of the contextual factor of children's socioeconomic status on teachers' perceptions of children's social competence has not been well established in the research literature.

There is also a critical need to examine the structure of the teacher-child relationship. While the importance of the teacher-child relationships to healthy child development has been well established, there is a paucity of research on early childhood preservice or student teachers. This study specifically examined the contribution of person and context factors to preservice teachers' perceptions of the social and cognitive competence of preschool children.

CHAPTER 3

METHODS AND PROCEDURES

The purpose of this study was to apply a person-process-context model to examine the contribution of person and context factors to preservice teachers' perceptions of the social and cognitive competence of preschool children. Person factors included children's temperament, age, sex, race/ethnicity, and actual competence. The major contextual factor studied was child enrollment in the Oregon Prekindergarten Program.

Sample - Preservice Teachers

The Oregon State University Child Development Center (CDC) was the site for this study. The CDC is a laboratory in which preservice teachers receive training and experience working with young children. Preservice teachers enroll in one of two sequential upper division practicum courses that are taught in the CDC. Preservice teachers must first enroll in a 3-credit practicum course that requires four hours of direct classroom experience per week. Following completion of this course, they may enroll in a 9-credit practicum course that requires 16 hours of direct classroom experience per week.

There were 28 preservice teachers enrolled in practicum courses during the term in which this study was conducted. Of these 28 preservice teachers, 54% were enrolled in the 3-credit course ($n = 15$) and 46% were enrolled in the 9-credit course ($n = 13$). All of the teachers were single women between the ages of 20 and 25 ($\bar{X} = 21$). Seventy-nine percent were white ($n = 22$), 7% were Asian ($n = 2$), 4% were Hispanic ($n = 1$), and 11% indicated their race/ethnic identity to be a combination of race/ethnic identities ($n = 3$). One preservice teacher was a psychology major. All others were early childhood education majors. Preservice teachers' prior work with young children covered a wide range of experiences from informal babysitting to formal educational

classroom employment. Prior time spent working with young children ranged from 0 to 20,198 hours. Mean hours spent working with young children was 2616. The median was 1161.

A subsample of preservice teachers was selected to participate in one of two focus groups. There were four teachers in each of the focus groups. A major contributor to the selection of focus group members was the time availability of the preservice teachers. Because preservice teachers enrolled in the 3-credit course had several other classes and were scheduled in the CDC on different days, it was very difficult to find times in which they could meet. Therefore, the majority of students who participated in the focus groups were enrolled in the 9-credit course. Three out of the four members in each group were enrolled in the 9-credit course.

Time availability also affected the race/ethnicity makeup of the two groups. There were no women of color in either of the two groups. However, the focus group members represented all four classrooms and there were no significant differences between focus group members and non-focus group members in terms of age or experience working with young children.

Sample - Children

Subjects for this study consisted of 68 children enrolled in 4 preschool classes at the OSU Child Development Center. These 68 children represented 88% of the total CDC child population ($n = 77$). Of the nine children who did not participate in the study, four did not participate due to lack of consent, three were absent during data collection, and two were not included upon recommendation of the CDC director based on confidential circumstances.

The CDC is the site for the only Head Start program in the state that enrolls children from both poverty-level and higher-level incomes in each of its four classrooms. This integrated program is made possible by an Oregon Prekindergarten

Program (OPP) grant from the Oregon Department of Education. Children enrolled in the CDC under the OPP grant lived in families whose income was less than the poverty level (currently \$16,050 for a family of 4).

Thirty-five percent of the children in the study were funded by the OPP grant to participate in CDC preschool classes ($n = 24$). OPP children received services not provided to non-OPP children, including bus transportation, lunch, home visits, and family support services. Table 1 summarizes demographic differences between OPP and non-OPP children.

The children ranged in age from 39 to 69 months ($M = 53.44$ months). The average age for children in the non-OPP group was 52.73 months. The average age for children in the OPP group was 54.75 months. There were 39 males and 29 females in the sample. Girls made up 48% of the non-OPP group ($n = 21$), while girls made up only 33% of the OPP group ($n = 8$). Boys made up 52% of the non-OPP group ($n = 16$) and 67% of the OPP group ($n = 16$).

Sixty-eight percent of the children in the total sample were White ($n = 46$), compared with 32% non-White ($n = 22$). Hispanic and Middle Eastern children each made up 9% of the sample ($n = 6$ for each group), with Asian children representing 7% of the sample ($n = 5$). Four percent of the sample were Black ($n = 3$), while the remaining 3% of the population were classified as "other" ($n = 2$).

Children in the non-OPP and OPP groups differed in race/ethnicity makeup. The race/ethnicity breakdown for children in the non-OPP group was 77% White ($n = 34$); 11% Asian ($n = 5$); 7% Middle Eastern ($n = 3$); 2% Black ($n = 1$); and 2% Hispanic ($n = 1$). The race/ethnicity breakdown for children in the OPP group was 50% White ($n = 12$); 21% Hispanic ($n = 5$); 13% Middle Eastern ($n = 3$); 8% Asian ($n = 2$) and 8% "other" ($n = 2$).

Of the 44 children in the non-OPP group, 62% lived in families with incomes over \$60,000 per year ($n = 26$) and 24% lived in families with incomes from \$30,001 to

Table 1

Demographic Characteristics of Children

Characteristics	OPP (N = 24)	Non-OPP (N = 44)	Total (N = 68)
Age in months			
Mean	54.75	52.73	53.44
<u>SD</u>	8.64	7.81	8.11
Sex			
Male	16 (67%)	23 (52%)	39 (57%)
Female	8 (33%)	21 (48%)	29 (43%)
Race			
White	12 (50%)	34 (77%)	46 (68%)
Non-white	12 (50%)	10 (23%)	22 (32%)
Family Income			
< \$20,000	21 (88%)	7 (16%)	28 (42%)
\$21,000 - \$30,000	2 (8%)	0	2 (3%)
\$31,000 - \$40,000	1 (4%)	3 (7%)	4 (6%)
\$41,000 - \$50,000	0	5 (12%)	5 (7%)
\$51,000 - \$60,000	0	2 (5%)	2 (3%)
> \$61,000	0	26 (62%)	26 (39%)
Family Structure			
Two Parent	14 (58%)	44 (100%)	58 (85%)
Single Parent	10 (42%)	0	10 (15%)

\$60,000 per year ($\underline{n} = 10$). Only 16% of the non-OPP children lived in families with incomes less than \$30,000 per year ($\underline{n} = 7$), while 96% of the children in the OPP group lived in families with incomes less than \$30,000 per year ($n = 23$). In addition, none of

the children in the non-OPP group lived in a single parent family, compared with 42% of the 24 children in the OPP group ($n = 10$).

Instruments

A variety of instruments and procedures were used to assess the contribution of individual variables (i.e., age, sex, race/ethnicity, and actual competence) and contextual variables (i.e., family income) on preservice teachers' perceptions of the social and cognitive competence of children. A description of each of the instruments used in this study follows.

Demographics

Demographic information on preservice teachers was gathered by asking them to complete a questionnaire (Appendix A). Information on the demographic questionnaire included age, sex, race/ethnicity, marital status, parents' income, parents' occupations, parents' education, academic major, grade level, grade point average, practicum course number, coursework in early childhood education, and prior experience with young children.

Demographic information on children was collected through analysis of information contained on child enrollment forms. Information available on these forms included age, sex, family income, family size, and parents' marital, educational, and occupational status. Head teachers at the Child Development Center provided information on the race/ethnicity of the children.

Preservice Teachers' Perceptions of Children's Social Competence

A preschool version of the Harter (1979) Social Competence Scale for Elementary School Children (SCSESC) was used to assess preservice teachers' perceptions of children's social competence (Appendix B). The Fabes and Eisenberg (1992) preschool version of the scale was adapted from the teacher version of the

SCSESC and consists of a 7-item scale in which teachers are asked to select one of two opposite statements, (e.g., "This child is usually well behaved" and "This child is often not well behaved"). Teachers then indicate if the chosen statement is "sort of true" or "really true" for each child. A 4-point scale is constructed, with higher scores reflecting higher levels of social competence. Three of the items assess the ability of children to make friends (e.g., "This child finds it pretty easy to make friends"). Three items assess children's socially appropriate tendencies (e.g., "This child usually gets in trouble because of the things he/she does"). One item assesses general social skills (e.g., "Compared to other children this child's age, this child has very good social skills).

Fabes and Eisenberg (1992) used the scale in a study on preschool children's anger in which a primary teacher and an aide rated each child. Cronbach's alpha was .86 for primary teachers and .84 for aides, indicating adequate internal reliability for the scale. Pearson correlation between the ratings of teachers and aides was .70 ($p < .001$).

Cronbach's alpha for the instrument with the current sample was .89, indicating excellent internal reliability. In addition, Pearson correlations between each of the seven items on the scale ranged from .32 to .77. All correlations were significant at $p < .0001$.

In order to determine test-retest reliability for the scale with the current sample, preservice were asked to complete the rating scale twice, with a three week interval between ratings. Pearson correlation between time 1 and time 2 was .83 ($p < .0001$), indicating adequate test-retest reliability,

Actual Child Social Competence

Actual child social competence was measured by a sociometric rating-scale using procedures developed specifically for use with preschool children by Asher, Singleton, Tinsley, and Hymel (1979). Each child was asked to place photographs of classmates into one of three boxes according to how much they like to play with each child. The boxes were labeled with a happy face, a neutral face, or a sad face. The rating scale is a

Likert-type scale, with 3 points scored for each happy face, 2 points for each neutral face, and 1 point for each sad face. Individual child scores were computed as the average of peer ratings.

The sociometric rating scale has been found to be a reliable and valid measure of peer acceptance. Asher et al. (1979) administered the rating scale twice to children in two different preschool classes at different times and found test-retest correlations to be .81 ($p < .05$) and .74 ($p < .01$), indicating adequate reliability for the measure. Validity of the measure has been established by researchers who have found significant correlations between observed peer interaction and rating-scale scores (Hymel, 1983). In order to decrease possible bias resulting from clothing and environmental cues, each child was photographed wearing a blue paint smock in front of the same surface.

Preservice Teachers' Perceptions of Children's Cognitive Competence

The teacher rating scale of the Harter and Pike Pictorial Scale of Perceived Competence and Social Acceptance for Young Children (PSPCSA) was used to measure preservice teachers' perceptions of children's cognitive competence (Harter & Pike, 1984). The teacher rating scale is a written, rather than pictorial, form of the PSPCSA. The rating scale consists of 24 items in 4 domain subscales: cognitive competence, physical competence, peer acceptance, and maternal acceptance. Each item consists of two statements, e.g., "This child is pretty good at counting" or "This child isn't very good at counting." The teacher responds by indicating which statement is most like the child and then determining if the statement is really true or sort of true. Scores range from 1 (least competent) to 4 (most competent). The current study used the cognitive competence subscale to test preservice teachers' perceptions of children's cognitive competence.

One item of the PSPCSA teacher rating scale was determined by three independent child development experts to lack content validity for the current sample.

The item asks teachers to respond to the following: "This child usually gets stars on his or her papers" or "This child often doesn't get stars on his or her papers." This item does not reflect the CDC's programmatic commitment to developmentally appropriate practice. Using extrinsic rewards, such as stickers or stars, may detract children from developing internal motivations to learn (National Association for the Education of Young Children, 1987). Thus, teachers at the CDC do not use stars to reward behavior. This item was revised to read "This child is pretty good at doing a lot of things" or "This child is not very good at doing a lot of things." Three independent child development experts provided face validity. Cronbach's alpha for the revised scale was .91, indicating excellent internal reliability. The revised scale may be found in Appendix C.

In a study on the role of competence in imaginary friend creation by preschoolers, Harter and Chao (1992) found the PSPCSA teacher rating scale to have adequate internal reliability ($r = .88$). No test-retest reliability information was available. Therefore, preservice teachers were asked to complete the cognitive subscale of the PSPCSA teacher rating scale for each child twice, with a three week interval between the two ratings. Test-retest reliability for the instrument with the current sample was adequate ($r = .83, p < .0001$).

Actual Child Cognitive Competence

The Battelle Developmental Inventory (BDI) (Newborg, Stock, Wnek, Guidubaldi, & Svinicki, 1984) was used to measure actual child cognitive competence. The BDI is a standardized measure that assesses the developmental skills of children from birth to eight years in five domains: personal-social; adaptive; motor; communication; and cognitive. The cognitive domain subscale was used to measure actual child cognitive competence in the current study. The cognitive domain subscale consists of 56 test items that measure children's skills and abilities in the areas of

perceptual discrimination, memory, reasoning and academic skills, and conceptual development (Appendix D).

Items in the cognitive domain were administered within a controlled setting, with the examiner providing materials or stimulus pictures to which each child responded. The examiner administered the test by following standardized procedures. Criteria for each of the test items has been established and items were scored on a 3-point scale (0 = no opportunity or no response; 1 = meets minimum criteria; 2 = meets maximum criteria). There were two items in each cognitive subdomain at most age levels. Basal level was met when the child scored two points on each of the two items at an age level. Ceiling level was met when the child scored zero points on both of the items at an age level. When there was only one item at a given age level, ceiling was met when the child scored zero points on that item. Total cognitive domain score was obtained by summing raw scores for each of the five subdomains.

Adequate reliability and criterion-related and construct validity for the BDI has been established (Newborg, et al., 1984). Test-retest reliability was determined by retesting 183 children in norming and clinical samples within four weeks of the first test. Reliability coefficients for cognitive subdomain scales ranged from .82 to .99. Reliability coefficients for the total cognitive domain scale ranged from .84 to .98.

Content validity is considered to be adequate if experts agree that the instrument measures what it is intended to measure. Test developers analyzed over 4000 items from published and unpublished instruments, clustering items measuring the same behavior within 5 domains of development. Expert opinion was then obtained for each domain.

Construct validity is established when high positive correlations exist between and within domains and subdomains, indicating that the instrument measures the theoretical constructs it is designed to measure. Test developers predicted that, for non-handicapped children, performance in one domain would be positively correlated with

performance in all domains and subdomains. Correlations ranged from .54 to .99, supporting this prediction (Newborg, et al., 1984).

Criterion-related validity is established by comparing an instrument with another instrument that has been established to measure the same theoretical constructs. Scores from the BDI were correlated with scores from the Vineland Social Maturity Scale, Stanford-Binet Intelligence Scale, Developmental Activities Screening Inventory, Wechsler Intelligence Scale for Children-Revised, and the Peabody Picture Vocabulary Test. Results showed the BDI to be strongly correlated with the Vineland Social Inventory Scale ($r = .79$ to $.94$) and the Developmental Activities Screening Inventory ($r = .78$ to $.92$). Moderate correlations were found between the BDI and the remaining instruments.

Cronbach's alpha for the cognitive subscale of the BDI for the current sample was .86, indicating adequate reliability. In addition, Pearson correlations were calculated between cognitive subdomains. Coefficients between subdomains ranged from .45 to .79. All correlations were significant at the .0001 level.

Temperament

The EAS Temperament Survey for Children was used to measure child temperament (Buss & Plomin, 1984). The EAS is a 20-item instrument that measures four dimensions of temperament: emotionality, activity, sociability, and shyness. Parents rate specific behavioral characteristics of their children on a scale of 1 ("not characteristic or typical of your child") to 5 ("very characteristic or typical of your child"). Because activity level has been shown to impact teachers' perceptions of children's social and cognitive competence, the activity subscale was used in the current study (Appendix E).

Reliability for the scale has been established on a form of the instrument that combined sociability and shyness scales (Buss & Plomin, 1984). The researchers

retested 31 children one week after an initial test. Test-retest correlations were .72 for the emotionality scale, .80 for the activity scale, and .58 for the sociability/shyness scale. In response to questions regarding the stability of the sociability/shyness scale, Buss and Plomin separated sociability items from shyness to create an experimental sociability scale.

Boer & Westenberg (1994) used the EAS, including the experimental sociability scale, in a survey of 230 mothers and 172 fathers of children aged 4 to 13. Cronbach's alpha for the instrument ranged from .74 to .81 for mothers and from .71 to .83 for fathers. Correlations between raters (mothers and fathers) indicated significant inter-rater agreement ($p < .01$ for all four scales). The researchers recommended rephrasing one item on the sociability scale ("When alone, child feels isolated") because the factor loaded on emotionality rather than sociability.

Correlation analysis on the activity subscale of the EAS Temperament Scale was conducted with the current sample. Cronbach's alpha for the scale was .77, indicating adequate reliability.

Focus Groups

Two 30-minute focus groups were conducted with preservice teachers at the OSU Child Development Center. Focus group questions were developed using categories established by Krueger (1994). These categories include opening question, introductory questions, transition questions, key questions, and ending questions. Interview questions for the focus groups may be found in Appendix F.

The focus group discussions were moderated by the researcher and recorded on audio tape. The discussions were analyzed using a systematic method to organize and interpret the data (Krueger, 1994). First, the recorded discussions were transcribed. Transcriptions were read repeatedly to identify major themes. A cut and paste technique was then used to organize the comments of preservice teachers under each major theme.

Procedures

Letters outlining the purpose of the study were sent to preservice teachers and parents of preschoolers enrolled at the Child Development Center (Appendix G). Active consent was required for participation in the study. The study was conducted during the winter term of the 1997-98 school year, after approval was obtained from the Oregon State University Human Subjects Committee. Data was collected 6 weeks following the beginning of the term in order to allow preservice teachers to become acquainted with the children.

As per the CDC policy regarding research to be conducted in the Center and to decrease bias resulting from stranger anxiety, the researcher spent 4 hours in each of the four preschool classrooms prior to data collection involving the children. Each child was photographed for the sociometric assessment during this time.

Data collection involving the children occurred between week 7 and week 10 of the term. The researcher administered the sociometric measure and the Battelle Developmental Inventory Cognitive Domain Subscale to each child in individual sessions in a room outside the preschool classroom. Administration of both of the tests required a total of approximately 15 to 20 minutes per child, completed in one session per child.

Parents were asked to complete the Buss and Plomin EAS Temperament Survey on their respective children prior to the end of the 10-week term. EAS Temperament Surveys were sent home with the children, with parents instructed to return completed surveys to a marked box in each of the classroom. Follow-up telephone calls were made to each family that did not respond to the initial request. This resulted in the return of 56 completed surveys and a return rate of 82%.

Preservice teachers completed the revised Harter Perceived Competence Cognitive Subscale and the revised Harter Social Competence Scale for Elementary

School Children on each of the children in their classroom during the sixth week of the term. In order to establish test-retest reliability for the revised Harter Perceived Competence Cognitive Subscale, preservice teachers completed the scale for each of the children in their respective classrooms again during the ninth week of the term.

Two focus group discussions were held with preservice teachers during the tenth and last week of the term. Focus groups were held prior to the beginning of classes on two different days. Each focus group was 30 minutes in length and was recorded on audio tape.

CHAPTER 4

ANALYSES AND RESULTS

Data Analysis

Both quantitative and qualitative methods were used to test the hypotheses for this study. Results of the quantitative and qualitative analyses will be discussed separately. The hypotheses for this study included:

Hypothesis 1 - The contextual factor of child enrollment in the Oregon Prekindergarten Program will contribute more significantly to preservice teachers' perceptions of preschool children's social competence than will the person factors of child age, sex, race/ethnicity, temperament, or actual social competence, controlling for classroom.

Hypotheses 2 - The contextual factor of child enrollment in the Oregon Prekindergarten Program will contribute more significantly to preservice teachers' perceptions of preschool children's cognitive competence than will the person factors of child age, sex, race/ethnicity, temperament, or actual social competence, controlling for classroom.

Results of Quantitative Analysis

Data were analyzed using SAS statistical software (SAS Institute, 1995). Descriptive statistics were obtained for all variables. Table 2 lists the means and standard deviations of all continuous variables used in quantitative analyses to test the hypotheses.

The means and standard deviations for the two dependent variables were comparable to means and standard deviations in previous studies (Fabes & Eisenberg, 1992; Harter & Pike, 1984). The mean score for teachers' perceptions of children's social competence for the current study was 2.93 (SD = .58), compared to 2.95 (SD = .58) in a study on young children's coping with anger (Fabes & Eisenberg, 1992).

Table 2

Means and Standard Deviations for Continuous Variables

Variable	<u>N</u>	<u>Mean</u>	<u>SD</u>
Perceived Social Competence	68	2.93	0.58
Perceived Cognitive Competence	68	3.26	0.56
Actual Social Competence	68	2.09	0.24
Actual Cognitive Competence	68	44.09	11.97
Age in months	68	53.44	8.11
Temperament	56	3.73	0.80

The mean score for teachers' perceptions of children's cognitive competence for the current study was 3.26 ($SD = .56$), compared to 3.4 ($SD = .45$) in the Harter and Pike study describing their Pictorial Scale of Perceived Competence and Social Acceptance for Young Children (1984).

Hierarchical multiple regression analysis was used to test the hypotheses. Since the sample for this study involved four classrooms with different teachers rating only the children within their respective classrooms, classroom was added as a control variable with classroom 1 as a reference or dummy variable. In addition, analysis of variance was conducted to determine if there were significant differences between teacher ratings of children's social and cognitive competence within each classroom.

Analysis of variance was performed on teachers' ratings of children's social and cognitive competence within each classroom. Due to missing data, there were eight fewer cases included in the analysis of variance conducted on teachers' perceptions of cognitive competence within classrooms than in the analysis of variance conducted on teachers' perceptions of social competence within classrooms.

Table 3

Results of Analyses of Variance for Differences Between Teachers Within Classrooms

Classroom	Teachers' Perceptions of Children's Social Competence		Teachers' Perceptions of Children's Cognitive Competence	
	<u>F</u>	<u>df</u>	<u>F</u>	<u>df</u>
1	1.42, ns	6,105	0.36, ns	6,105
2	0.95, ns	6,119	1.35, ns	6,114
3	2.05, ns	5,101	0.60, ns	5,99
4	1.02, ns	7,120	1.79, ns	7,119

As the results found in Table 3 indicate, there were no significant differences between teachers' ratings of children's social competence or teachers' ratings of children's cognitive competence in any of the four classrooms. Therefore, perceived social competence scores and perceived cognitive competence scores were averaged within each classroom to obtain individual child scores.

Preliminary Analysis - Continuous Variables

Zero-order Pearson correlations were performed on all continuous variables to determine the relationships between teachers' perceptions of children's social competence, teachers' perceptions of children's cognitive competence, children's actual social competence, children's actual cognitive competence, age, and temperament. Table 4 summarizes Pearson correlation coefficients for these variables.

There were several significant correlations between the continuous variables in this study. First, there was a highly significant positive correlation between the two dependent variables, i.e., between preservice teachers' perceptions of children's social competence and their perceptions of children's cognitive competence ($r = .71$, $p < .0001$). As teachers' ratings of children's social competence increased, their perception

Table 4

Correlations Between Continuous Variables Considered for the Regression Models Predicting Teachers' Perceptions of Children's Social and Cognitive Competence

	PSC	PCC	ASC	ACC	AGE	TEMP
PSC	1.00					
PCC	0.71****	1.00				
ASC	0.38**	0.26*	1.00			
ACC	0.30*	0.46***	0.14	1.00		
AGE	0.26*	0.34**	0.03	-0.27*	1.00	
TEMP	-0.13	-0.05	-0.03	0.96	-0.09	1.00

* $p < .05$. ** $p < .01$. *** $p < .001$. **** $p < .0001$.

Key: PSC = Perceived Social Competence
PCC = Perceived Cognitive Competence
ASC = Actual Social Competence
ACC = Actual Cognitive Competence
AGE = Child Age in Months
TEMP = Child Temperament

of children's cognitive competence also increased. This finding confirms the established interrelationship between social and cognitive competence found in previous studies (Parker & Asher, 1987; Zigler & Trickett, 1979).

In addition, teachers' perceptions of children's social competence were significantly and positively related to children's actual social competence ($r = .38$, $p < .01$) and actual cognitive competence ($r = .30$, $p < .05$). As teachers' perceptions of children's social competence increased, so did children's actual social and cognitive competence scores.

Age was also significantly and positively related to teacher's perceptions of children's social competence ($r = .26$, $p < .05$). Older children were perceived by teachers to be more socially competent than their younger classmates.

Furthermore, teachers' perceptions of children's cognitive competence were significantly and positively related to children's actual social competence ($r = .26, p < .05$), their actual cognitive competence ($r = .46, p < .0001$), and age ($r = .34, p < .01$). Teachers perceived older children and children who scored higher on actual social and cognitive competence measures to be significantly more cognitively competent than younger children and children who scored lower on actual social and cognitive competence measures.

Finally, age was significantly, but negatively related to children's actual cognitive competence ($r = -.27, p < .05$). Younger children scored significantly higher on the actual cognitive competence measure than did their older classmates. No significant relationships were found between temperament and the other variables included in these analyses.

Preliminary Analysis - Categorical Variables

Additional analyses were conducted to test for significant differences between categorical variables and all other variables. T-tests were performed to determine whether significant differences were present relative to teachers' perceptions of children's social and cognitive competence, children's actual social and cognitive competence, age, and temperament when the variables of sex, enrollment in OPP, and race/ethnicity were taken into account. Table 5 summarizes the means and standard deviations associated with these analyses.

Significant sex differences were found in teachers' perceptions of children's social and cognitive competence. Teachers rated girls higher in both social competence ($t = -4.49, p < .0001$) and cognitive competence ($t = -2.98, p < .01$). No other significant differences were found.

An analysis of variance was performed on teachers' perceptions of children's social and cognitive competence, age, and temperament when the variable of classroom

Table 5

Means and Standard Deviations of Categorical Variables of Sex, Enrollment in OPP, and Race/Ethnicity for Perceived and Actual Competence, Age, and Temperament

Variable	N	Perceived Social Competence		Actual Social Competence		Perceived Cognitive Competence		Actual Cognitive Competence		Age		Temperament		
		M	SD	M	SD	M	SD	M	SD	M	SD	N	M	SD
Sex														
Male	39	2.71	0.60	2.08	0.27	3.11	0.61	43.08	11.64	53.77	8.32	31	3.88	0.84
Female	29	3.24	0.39	2.10	0.20	3.47	0.41	45.45	12.48	53.00	7.94	25	3.54	0.71
Enrollment in OPP														
Yes	24	2.60	0.55	2.00	0.28	2.94	0.51	38.04	10.83	54.75	7.81	15	3.79	0.90
No	44	3.12	0.52	2.14	0.21	3.44	0.50	47.39	11.36	52.73	8.64	41	3.71	0.77
Race/Ethnicity														
White	46	3.00	0.57	2.12	0.22	3.33	0.52	46.43	11.92	53.22	8.28	41	3.76	0.80
Non-White	22	2.78	0.58	2.03	0.27	3.12	0.62	39.18	10.77	53.91	7.91	15	3.65	0.80

was taken into account. Table 6 summarizes the means and standard deviations associated with these analyses.

Significant classroom differences were found relative to children's actual social competence, $F(3,64) = 8.35, p < .0001$. Post hoc comparisons using the Scheffe test revealed significant differences between the actual social competence scores of children in classrooms 1 and 2 and the actual social competence scores of children in classrooms 3 and 4 ($p < .05$ respectively). No other significant differences were found in this analysis.

Chi-square analysis to determine the relationships between sex, enrollment in OPP, and race/ethnicity revealed only one significant relationship. Children enrolled in OPP were significantly more likely to be non-White than children who were not enrolled in OPP (value = 5.278, df = 1, $p < .05$).

An additional test for multicollinearity was conducted. Each of the independent variables was regressed on all other independent variables in the models for each hypothesis. The only regression that yielded a significant R^2 in this analysis was one in which classroom was regressed on enrollment in OPP, actual child social competence, age, sex, race/ethnicity, and temperament ($R^2 = .41, p < .0001$). Actual child social competence was the only variable that significantly explained the variation in classroom ($T = 5.14, p < .0001$). While the model correlation was statistically significant, the R^2 of .41 for the regression of classroom on all other independent variables did not approach unity and thus multicollinearity was not considered to be problematic (Lewis-Beck, 1980). Therefore, all variables were retained in the equations used to test the hypotheses.

Results of Regression Testing Hypotheses 1

Hierarchical multiple regression analysis was used to test the hypothesis that the contextual factor of child enrollment in the Oregon Prekindergarten Program is more

Table 6

Means and Standard Deviations of Classroom Variable for Perceived and Actual Competence, Age, and Temperament

Variable	N	Perceived Social Competence		Actual Social Competence		Perceived Cognitive Competence		Actual Cognitive Competence		Age		Temperament		
		M	SD	M	SD	M	SD	M	SD	M	SD	N	M	SD
Classroom 1	16	2.85	0.66	1.98	0.20	3.29	0.60	41.56	12.17	55.18	6.53	13	3.92	0.71
Classroom 2	18	3.01	0.65	1.95	0.13	3.28	0.68	45.22	13.65	55.22	8.36	15	3.72	0.86
Classroom 3	18	2.98	0.49	2.21	0.26	3.25	0.49	49.17	9.71	50.05	6.73	14	3.74	0.66
Classroom 4	16	2.88	0.56	2.22	0.22	3.24	0.50	39.63	10.66	53.5	9.99	14	3.56	0.95

significantly related to preservice teachers' perceptions of children's social competence than the person factors of actual child social competence, enrollment in OPP, age, sex, race/ethnicity, and temperament. Hierarchical multiple regression analysis was used to determine the unique contribution of each independent variable (i.e., actual child social competence, enrollment in OPP, age, sex, race/ethnicity, and temperament) to preservice teachers' perceptions of the social competence of preschool children. Classroom was entered first into the regression as a control variable. Table 7 summarizes the results of the hierarchical regression predicting preservice teachers' perceptions of the social competence of preschool children.

Regressions were performed in seven hierarchical steps. First, the variable of classroom was entered into a regression model predicting preservice teachers' perceptions of children's social competence. Classroom was not a significant predictor of preservice teachers' perceptions of children's social competence, accounting for less than 1% of the variance in the dependent variable ($R^2 = .0001$).

Second, classroom and actual child social competence were entered into the model predicting preservice teachers' perceptions of children's social competence. Actual children's competence was significant in explaining variance in preservice teachers' perception of social competence scores ($\beta = .457$, $p < .001$). No significant results were found for classroom. Actual children's competence and classroom accounted for 16.5% of the variance in teachers' perceptions of children's social competence ($R^2 = .165$, $p < .01$). There was a 16.5% change in the variance as a result of adding actual child social competence to the equation. The F -value for the change in the variance due to actual child social competence was 11.276 (1,65), which was significant at the .001 level.

Third, classroom, actual child social competence and enrollment in OPP were entered into the regression model predicting preservice teachers' perceptions of the social competence of preschool children. Both actual child competence and enrollment in

Table 7

Hierarchical Regression Predicting Preservice Teachers' Perceptions of Children's Social Competence

	Regression Entering Steps						
	1	2	3	4	5	6	7
Classroom	0.010	- 0.201	-0.146	-0.086	- 0.029	-0.011	-0.040
Actual Competence		0.457***	0.339**	0.277*	0.248*	0.231*	0.328**
OPP			-0.337**	-0.380***	- 0.333***	-0.319**	-0.336**
Age				0.220*	0.245**	0.250**	0.274**
Sex					0.416****	0.424****	0.461****
Race/Ethnicity						-0.069	-0.059
Temperament							0.006
R ²	0.0001	0.165	0.267	0.311	0.479	0.483	0.559
R ² Change	0.0001	0.165	0.102	0.044	0.167	0.004	0.076
F Change	0.206	11.276**	8.192**	4.840*	20.000***	0.316	0.003

*p = .05, **p = .01, ***p = .001, ****p = .0001

OPP contributed significantly to the variation in preservice teachers' perceptions of children's social competence.

Enrollment in OPP and actual child competence were equally important in explaining preservice teachers' perceived social competence scores. With standardized Beta values of $-.337$ and $.339$, respectively, each of the two variables was significant in explaining the variation in the dependent variable ($p < .01$ for both OPP and actual child social competence). Preservice teachers rated children enrolled in the OPP program significantly lower in social competence than their non-OPP peers, even when children's actual competence was controlled.

Classroom, actual child competence, and enrollment in OPP explained 26.7% of the variation in preservice teachers' perceptions of the social competence of preschool children ($R^2 = .267$, $p < .0001$). There was a 10.2% change in the variance as a result of adding enrollment in OPP to the model. The F -value for the change in the variance due to actual child social competence was 8.192, which was significant at the .001 level.

Fourth, class, actual child social competence, OPP, and age were entered into the regression model predicting preservice teachers' perceptions of children's social competence. All independent variables except classroom were significant in explaining the variation in preservice teachers' perceptions of children's social competence. Preservice teachers scored children enrolled in OPP significantly lower in social competence ($\beta = -.380$, $p < .001$) and scored older children significantly higher in social competence ($\beta = .220$, $p < .05$). Actual social competence scores also significantly predicted teachers' ratings of social competence ($\beta = .277$, $p < .05$).

There was a 4.4% change in the variance as a result of adding children's age to the regression. The F -value for the change in the variance due to age was 4.840, which was significant at the .05 level. The overall model explained 31.1% of the variance in the dependent variable ($R^2 = .311$, $p < .0001$).

Fifth, classroom, actual child social competence, OPP, child age, and child sex were entered into the regression model. This model explained 47.9% of the variation in preservice teachers' perceptions of children's social competence ($R^2 = .479$, $p < .0001$). As in model four, all independent variables except for classroom were significant in explaining the variation in preservice teachers' perceptions of social competence. Preservice teachers perceived children who scored higher on the actual social competence measure more socially competent than children who scored lower on the measure ($\beta = .248$, $p < .05$). In addition, preservice teachers rated children enrolled in OPP significantly lower in social competence ($\beta = -.333$, $p < .001$) than non-OPP children and rated older children significantly higher in social competence ($\beta = .245$, $p < .01$).

Child sex was a highly significant contributor to preservice teachers' perceptions of social competence ($\beta = .416$, $p < .0001$). Preservice teachers rated girls significantly more socially competent than boys. In addition, there was a 16.7% change in the variance as a result of adding child sex to the equation. The F -value for the change in the variance due to child sex was 20.000(1,62), which was significant at the .001 level.

Sixth, classroom, actual social competence, OPP, age, sex, and race/ethnicity were entered into the regression equation. This model explained 48.3% of the variance in preservice teachers' perceptions of children's social competence ($R^2 = .483$, $p < .0001$). The F -value for the overall model was 9.483, which was significant at the .0001 level. Classroom and race/ethnicity were not significant in explaining the variance in teachers' perceptions of social competence. Sex was a highly significant contributor to teachers' perceptions ($\beta = .424$, $p < .0001$), with girls perceived as more socially competent than boys. In addition, teachers perceived children enrolled in OPP as significantly lower in social competence ($\beta = -.319$, $p < .01$) and older children as significantly higher in social competence ($p < .01$). Actual child social competence scores were significant predictors of teachers' perception scores ($p < .05$).

Adding race/ethnicity to the model explained only an additional .004 of the variance in teachers' perceptions of child social competence. The F -value for the change in variance resulting from the addition of race/ethnicity was .316 and non-significant.

Finally, all contextual and person factors were added into the regression equation, with temperament added last. The final model explained 55.9% of the variance in preservice teachers' perceptions of children's social competence. The F -value for the model was 8.706, which was significant at the .0001 level. Classroom, race/ethnicity, and temperament were not significant in explaining variation in preservice teachers' perceptions of children's social competence. Adding temperament to the model explained an additional 7.6% of the variance in the dependent variable. The F -value for the change in R^2 resulting from the addition of temperament was .003 and not statistically significant.

Child sex was the most important predictor of preservice teachers' perceptions of the social competence of preschool children ($\beta = .416, p < .0001$). Girls were perceived by preservice teachers as significantly more socially competent than boys. Actual child social competence was significant in predicting preservice teachers' perception scores as were age and enrollment in OPP ($p < .01$ for all three variables).

The hypothesis that the contextual factor of child enrollment in OPP would be more significantly related to preservice teachers' perceptions of children's social competence than the person factors of actual child social competence, age, sex, race/ethnicity, and temperament was not supported. Sex was the most important contributor to preservice teachers' perceptions of children's social competence in the final regression model, followed by child enrollment in OPP, actual social competence, and age.

Despite the fact that child enrollment in OPP was not the most significant contributor to preservice teachers' perceptions of children's social competence, it was still a significant contributor. This indicates that teachers made judgments about

children's social competence not only on the basis of children's sex, age, and actual competence, but also on the basis of children's enrollment in OPP.

Results of Regression Testing Hypothesis 2

Hierarchical multiple regression analysis was used to test the hypothesis that the contextual factor of child enrollment in the Oregon Prekindergarten Program is more significantly related to preservice teachers' perceptions of children's cognitive competence than the person factors of actual child cognitive competence, age, sex, race/ethnicity, and temperament. Hierarchical multiple regression analysis was used to determine the unique contribution of each independent variable (i.e., actual child cognitive competence, enrollment in OPP, age, sex, race/ethnicity, and temperament) to preservice teachers' perceptions of the cognitive competence of preschool children. Classroom was entered first into the regression as a control variable. Table 8 summarizes the results of the hierarchical regression predicting preservice teachers' perceptions of the cognitive competence of preschool children.

Regressions were performed in seven hierarchical steps. First, the variable of classroom was entered into a regression model predicting preservice teachers' perceptions of children's cognitive competence. Classroom was not a significant predictor of preservice teachers' perceptions of children's cognitive competence, accounting for less than 1% of the variance in the dependent variable ($R^2 = .001$).

Second, classroom and actual child cognitive competence were entered into the model predicting preservice teachers' perceptions of children's cognitive competence. Actual children's cognitive competence was significant in explaining the variance in preservice teachers' perception of cognitive competence scores ($\beta = .374$, $p < .01$). No significant results were found for classroom. Actual child competence and classroom accounted for 14.1% of the variance in teachers' perceptions of children's cognitive competence ($R^2 = .141$, $p < .01$). There was a 14.1% change in the variance as a result

Table 8

Hierarchical Regression Predicting Preservice Teachers' Perceptions of Children's Cognitive Competence

	Regression Entering Steps						
	1	2	3	4	5	6	7
Classroom	-0.035	- 0.031	-0.032	0.051	0.078	0.080	0.137
Actual Competence		0.374**	0.245*	0.446****	0.434****	0.431****	0.498****
OPP			-0.343**	- 0.335***	-0.302***	-0.299**	-0.335***
Age				0.553****	0.563****	0.562****	0.508****
Sex					0.276**	0.278**	0.248**
Race/Ethnicity						-0.014	-0.016
Temperament							0.049
R ²	0.001	0.141	0.243	0.504	0.577	0.578	0.629
R ² Change	0.001	0.140	0.102	0.261	0.073	0.001	0.051
F Change	0.063	14.143***	9.080**	25.813***	7.000*	0.071	0.286

* $p < .05$, ** $p < .01$, *** $p < .001$, **** $p < .0001$

of adding actual child cognitive competence to the equation. The F -value for the change in the variance due to actual child cognitive competence was 14.143 (1,65), which was significant at the .001 level.

Third, classroom, actual child cognitive competence and enrollment in the Oregon Prekindergarten were entered into the regression model predicting preservice teachers' perceptions of the cognitive competence of preschool children. Classroom did not significantly contribute to the variation in preservice teachers' perceptions of children's cognitive competence.

Both actual child cognitive competence and enrollment in OPP were significant contributors to preservice teachers' perceptions of the children's cognitive competence. Actual child cognitive scores significantly predicted teachers' perceptions of cognitive competence ($\beta = .245$, $p < .05$). Higher actual cognitive scores corresponded with higher scores on the scale measuring teachers' perceptions of cognitive competence. In addition, preservice teachers rated children enrolled in the OPP program significantly lower in cognitive competence than their non-OPP peers ($\beta = -.343$, $p < .01$).

Classroom, actual child cognitive competence, and enrollment in OPP explained 24.3% of the variation in preservice teachers' perceptions of the cognitive competence of preschool children ($R^2 = .243$, $p < .001$). There was a 10.2% change in the variance as a result of adding enrollment in OPP to the model. The F -value for the change in the variance due to actual child cognitive competence was 9.080, which was significant at the .01 level.

Fourth, class, actual child cognitive competence, OPP, and age were entered into the regression model predicting preservice teachers' perceptions of children's cognitive competence. All independent variables except classroom were significant in explaining the variation in preservice teachers' perceptions of children's cognitive competence. Preservice teachers scored older children significantly higher in cognitive competence ($\beta = .553$, $p < .0001$) and scored children enrolled in OPP significantly

lower in cognitive competence ($\beta = -.335, p < .001$). Actual cognitive competence scores also significantly predicted teachers' ratings of cognitive competence ($\beta = .456, p < .0001$).

There was a 26.1% change in the variance as a result of adding children's age to the regression. The F -value for the change in the variance due to age was 25.813, which was significant at the .001 level. The overall model explained 50.4% of the variance in the dependent variable ($R^2 = .504, p < .001$).

Fifth, classroom, actual child cognitive competence, OPP, child age, and child sex were entered into the regression model. This model explained 57.7% of the variation in preservice teachers' perceptions of children's cognitive competence ($R^2 = .577, p < .0001$). As in model four, all independent variables except for classroom were significant in explaining the variation in preservice teachers' perceptions of cognitive competence. Actual child competence was a highly significant predictor of teachers' perceptions of cognitive competence ($\beta = .434, p < .0001$), as was age ($\beta = .563, p < .0001$). Preservice teachers also rated children enrolled in OPP significantly lower in cognitive competence ($\beta = -.302, p < .001$).

Child sex was also a significant contributor to preservice teachers' perceptions of cognitive competence ($\beta = .276, p < .01$). Preservice teachers rated girls significantly more cognitively competent than boys. There was a 7.3% change in the variance as a result of adding sex to the equation. The F -value for the change in the variance due to sex was 7.000 (1,62), which was significant at the .05 level.

Sixth, classroom, actual cognitive competence, OPP, age, sex, and race/ethnicity were entered into the regression equation. This model explained 57.8% of the variance in preservice teachers' perceptions of children's cognitive competence ($R^2 = .578, p < .0001$). Classroom and race/ethnicity were not significant in explaining the variance in teachers' perceptions of cognitive competence. Age and actual child cognitive competence were highly significant contributors to teachers' perceptions ($\beta =$

.508 and .498, respectively, $p < .0001$ for each variable). Older children and children who scored higher on the actual child cognitive competence measure were perceived as significantly more competent than younger children and lower scorers on the actual cognitive measures. In addition, teachers perceived children enrolled in OPP as significantly lower in cognitive competence ($\beta = -.299$, $p < .01$) and girls as significantly more cognitively competent than boys ($\beta = .278$, $p < .01$).

Adding child race/ethnicity to the model explained only an additional .001 of the variance in teachers' perceptions of child cognitive competence. The F -value for the change in variance resulting from the addition of child race/ethnicity was .071 and non-significant.

Finally, all person and context factors were added into the regression equation, with temperament added last. The final model explained 62.9% of the variance in preservice teachers' perceptions of children's cognitive competence. The F -value for the model was 11.646, which was significant at the .0001 level. Classroom, race/ethnicity, and temperament were not significant in explaining variation in preservice teachers' perceptions of children's cognitive competence. Adding temperament to the model explained an additional 5.1% of the variance in the dependent variable. The F -value for the change in R^2 resulting from the addition of temperament was .286 and not statistically significant.

The most important predictors of preservice teachers' perceptions of the cognitive competence of preschool children in the final model were age ($\beta = .508$, $p < .0001$) and actual child cognitive competence ($\beta = .498$, $p < .0001$). In addition, teachers were significantly more likely to perceive children enrolled in OPP as lower in cognitive competence than their non-OPP peers ($\beta = .335$, $p < .001$) and to perceive boys as less cognitively competent than girls ($\beta = .248$, $p < .01$).

The hypothesis that the contextual factor of child enrollment in OPP would be more significantly related to preservice teachers' perceptions of children's cognitive

competence than the person factors of actual child cognitive competence, age, sex, race/ethnicity, and temperament was not supported. Age was the most important contributor to preservice teachers' perceptions of children's cognitive competence in the final regression model, followed by actual cognitive competence, child enrollment in OPP, and sex.

While child enrollment in OPP was not the most significant contributor to preservice teachers' perceptions of children's social competence, it was still a statistically significant contributor. Even when children's age, sex, and actual cognitive competence were included in the model, teachers rated children enrolled in OPP significantly lower in cognitive competence than non-OPP children.

Results of Qualitative Analysis

Two 30-minute focus groups were conducted with preservice teachers at the OSU Child Development Center. The purpose of the focus groups was to identify factors that affected the ways in which preservice teachers rated the social and cognitive competence of the children in their classrooms. Teachers' comments were organized into four general themes, which included relationships between social and cognitive competence, individual child characteristics affecting teacher perceptions, family background influences on teacher perceptions, and classroom influences on teacher perceptions. Discussion of each theme follows.

Relationships Between Social and Cognitive Competence

While focus group questions were designed to elicit comments from preservice teachers on their perceptions of both children's social competence and children's cognitive competence, teachers were much more likely to address social competence than cognitive competence in their comments. In particular, "behavior problems" were noted several times as the teachers discussed various factors that affected their ratings of the children.

At the same time, teachers were quick to point out the relationship between social and cognitive competence, which they saw as a negative relationship. In other words, they felt that the children with lower social competence tended to be higher in cognitive competence. The following comments illustrate this point:

"Some of the kids that I know in our group that have behavior problems are extremely bright."

"They know how to push your buttons."

"Because we have some kids who are having behavior problems, I was careful to judge their cognitive development based on what they can really do. Their cognitive development is higher."

Individual Child Characteristics Affecting Teacher Perceptions

Teachers noted several relationships between individual child characteristics and their perceptions of children's social and cognitive competence. First, they described a developmental progression in the development of children's social and cognitive development.

"We have younger kids in the class and so you know not to expect from a 3-year-old what you can expect from a 5-year-old."

"You can look at the 3-year-olds compared with the 4- and 5-year-olds. There is a definite developmental difference."

Next, teachers outlined sex differences in social competence. In general, they felt that boys were more likely to exhibit negative social behaviors than girls. No mention was made of sex differences in cognitive competence.

"Boys are the ones we have more problems with because they want to play with guns and they want to shoot people and play that they are doing drive-bys and the girls aren't into that."

"Girls have higher social skills than a lot of the boys."

"The boys have more of the troubles, like the language and the hitting."

However, not all teachers felt that girls were more socially competent than boys. As one teacher noted, "There's a group of boys that everyone wants to play with." In addition, the structure of boy-girl relationships varied between classrooms. While some teachers indicated that boys and girls in their classrooms primarily played in segregated groups, others noted different patterns of play.

"The girls end up being paired up, maybe playing with one or two other girls. It's the boys in our class who play with everyone."

"The boys and girls don't really play together unless it comes down to cooking."

"The boys in our class don't play with anybody. They are really solitary beings."

Race/ethnicity was another factor mentioned by teachers as affecting their ratings of children's social and cognitive competence. However, it appeared that proficiency in English was a more important component of this observation than children's racial/ethnic identity. For example, one teacher noted that, "Some kids can read but there are other kids the same age who don't speak English as their first language that I did rate differently."

Family Background Influences on Teachers Perceptions

Comments related to the influence of children's family backgrounds on teachers' perceptions were primarily focused on family income and relationships with parents. While teachers made general comments regarding the social and cognitive competence of the children based on their socioeconomic status, most did not feel comfortable with the topic, as the following statements indicate:

"I guess if I made a list of all of the kids that I see having the most behavior problems then broke that down and said how many of these are from low

socioeconomic situations then it probably is a factor. But it's not like you should make a judgment."

"The two or three that we do have major problems with on a regular basis are from lower incomes but I don't think that necessarily has anything to do with it."

In addition, some teachers in the focus groups indicated that they were not really aware of which children were enrolled in OPP and which children were not. For example, one teacher said, "Some kids come on the van . . . I mean they're just kids that come everyday. I don't notice at all."

Despite their hesitancy in discussing children's socioeconomic status in relation to their perceptions of children's social and cognitive competence, several teachers did notice differences between lower and higher income children. In general, they perceived lower income children to be less competent than higher income children.

"I guess the ones that have the toughest times in our classroom have the worst kind of family life."

"In our class some of the children have some very difficult home lives which really affects their learning."

Not all teachers rated children enrolled in OPP as low in both social and cognitive competence. One teacher noted, "I'd say that [children enrolled in OPP] are higher in cognitive competence but lower in behavior."

Even though most of the teachers were likely to rate children from lower socioeconomic levels as lower in social and cognitive development, they were also likely to view these children sympathetically. In particular, teachers expressed lowered expectations for children in these families.

"If anything, it makes me more understanding to why they are the way they are. You know like give him a break he probably had an awful day before."

"It made me think, gosh, for the situation that they're in they really are great kids."

"I mean they either know it or they don't, but you take some of their background into consideration when you're measuring their abilities."

"In your interaction these children, it's always in the back of your mind. So I don't think you have as many cognitive experiences with them. You try to, but at the same time you're thinking about all these other things too."

Teachers also were aware of the differences between their personal family backgrounds and those of the children in their classrooms. The following comments illustrate this observation.

"I couldn't imagine some of the things that go on in some of these kids' households. I feel awful for them. It makes me want to help them more."

"I've never had to deal with kids with some of the problems that these children have and it didn't make me judge them any harsher."

"I have empathy for children who come from a different background than I did."

When discussing possible reasons for children exhibiting problem behaviors, teachers were likely to comment on the quality of the parent-child relationship. In addition, teachers' interactions with parents influenced the way they perceived the children.

"The parents of the kids with all the problems don't come to the parent activities so you gotta wonder what's going on at home."

"You can tell a lot from some of the kids' social and cognitive skills that their parents are more involved in their lives."

"It's hard when the home life and the way his parents treat him is so different from the way we're trying to get him to behave."

Classroom Structure and Teacher Perceptions

Preservice teachers relied primarily on personal interactions and observations when rating children's social and cognitive competence. However, there were also

classroom influences on ratings. In particular, each of the four classrooms was led by a different head teacher who structured the learning experiences for preservice teachers differently. One area in which the learning experience was different in each of the classrooms was the amount of personal and family information about the children that the head teacher disclosed to the preservice teachers. The amount of information preservice teachers had about children impacted their ratings of children's social and cognitive competence. The following comments illustrate this point.

"It's nothing that I would have even known to look at if my head teacher hadn't said so and so is this way because they're having problems at their house."

"In our class we know. Sometimes it's kind of nice to know what's going on so you understand what this child is going through."

"I prefer to not find out until you know there's a reason for us to find out. It's easier for me. I don't know how I would do if I was told up front."

"It was hard for me not to judge them from what I heard."

Although this study was designed to explore teachers' perceptions rather than to measure how perception translates into actual behavior, teachers did discuss specific behaviors that illustrated differential treatment of children in the classroom. This differential treatment primarily focused on children who were seen as having behavioral problems.

"We're asked to do special things to help them feel better about themselves. Sometimes it's hard because it does take away from the other kids because you're asked to put in specific attention and specific time to help these certain kids who are having problems."

"The kids who act out are constantly getting the physical attention and physical touch from us."

Summary of Qualitative Analysis

With respect to the relationships between perceptions of children's social competence and perceptions of children's cognitive competence, preservice teachers were more likely to discuss social competence than cognitive competence. In particular, preservice teachers noted behavior problems to be an important factor that influenced their ratings of the children's social competence. However, they also felt that there was a negative relationship between social competence and cognitive competence, i.e., they perceived children with lower social competence to be higher in cognitive competence.

The individual child characteristics of age, sex, and race/ethnicity also affected preservice teachers' perceptions of children's social and cognitive competence. Older children were perceived to be more competent than younger children. Girls were perceived to be more socially and cognitively competent than boys. Finally, one aspect of race/ethnicity affected teachers' ratings of children. Teachers were more likely to rate children who were not proficient in English lower in social and cognitive competence than children who were proficient in English.

Family background also influenced teachers' ratings of children's social and cognitive competence. While teachers in the focus groups were hesitant to discuss children's socioeconomic status in relation to children's social and cognitive competence, teachers' comments pointed to perceptions that children from low income families were less competent than children from high income families. In addition, teachers were likely to view low income children more sympathetically than high income children and to comment on the differences between their own personal backgrounds and the backgrounds of low income children at the center.

Observations of the parent-child relationship and disclosure about children's families also affected preservice teachers' perceptions of children's social and cognitive competence. Preservice teachers perceived children with behavior problems to have parents who were less involved in school activities. In addition, preservice teachers

viewed children differently based on what had been disclosed to them about the children's personal and family backgrounds, as well as recommendations that were given by head teachers to deal with specific behaviors.

CHAPTER 5

SUMMARY AND CONCLUSIONS

The primacy of the teacher-child relationship to quality in early childhood programs has been well established (Elicker & Fortner-Wood, 1995; Howes, Phillips, & Whitebrook, 1992). However, relatively little is known about the contextual and individual child factors that may contribute to variations in teacher-child relationships (Kontos & Wilcox-Herzog, 1997). This study addressed gaps in the current literature on teacher-child relationships by focusing on how the contextual factor of children's socioeconomic status, as measured by enrollment in OPP, and the person factors of children's age, sex, actual competence, race/ethnicity, and temperament contribute to preservice teachers' perceptions of children's social and cognitive competence.

This was an important avenue for research for three reasons. First, changes in public policy under the Welfare Reform Act are expected to increase the numbers of poverty-stricken children entering early childhood programs as their parents enroll in work and training programs (Super, et. al, 1996). As increasing numbers of poor children enter early childhood programs, there is a need to assess how teachers may perceive them differently from their non-poor peers.

Second, educational research has focused primarily on relationships between teachers and children in the context of the public school environment and has rarely addressed preservice, or student teacher relationships with children in early childhood settings (Kontos & Wilcox-Herzog, 1997). The current study addressed this gap in the literature by focusing on factors that influence preservice teachers' perceptions of preschool children's social and cognitive competence.

Third, including measures of actual child competence in addition to measures of teachers' perceptions of child competence makes a substantive contribution to the current literature. By adding measures of actual competence, one is able to address the

critical research question, "so what?" Had only perception measures been included, it would have been impossible to determine if such factors as age, sex, race/ethnicity, temperament, and enrollment in OPP contributed to variation in teacher perceptions over and above what children are actually capable of doing. There would be no way to determine whether discrepancies between actual competence and teachers' perceptions of competence could be accounted for by the aforementioned person and context factors.

A summary and discussion of the results from this study follows. First, the theoretical implications of the study will be presented. Next, discussion of the unique contribution of the variables in this study will follow and relationships between results of this study and prior research will be outlined. Comparisons between qualitative and quantitative findings will then be discussed. Finally, limitations of the current study and recommendations for future research, policy, and practice will be discussed.

Theoretical Implications

Findings of the present study provide general support for the validity of Bronfenbrenner's person-process-context model. Independent variables conceptualized as person and context factors explained a significant amount of the variance in the two dependent variables, i.e., preservice teachers' perceptions of children's cognitive competence and preservice teachers' perceptions of children's social competence.

The independent variables of classroom, actual child competence, child enrollment in OPP, age, sex, race/ethnicity, and temperament explained 55.9% of the variation in teachers' perceptions of children's social competence and 62.9% of the variation in teachers' perceptions of children's cognitive competence. According to Sirkin (1995), model variance values in social science research rarely exceed .50. Thus, the model variance values of .559 and .629 for the two hypotheses in the current study indicate strong model fit. The person-process-context model provides an effective framework for systematically analyzing the factors that contribute to preservice teachers'

perceptions of children's social and cognitive competence. It should be noted, however, that among the variables hypothesized to contribute to teachers' perceptions of children's social and cognitive competence, the variables of actual social competence, enrollment in OPP, age, and sex contributed significantly, while classroom, race/ethnicity, and temperament did not.

Unique Contributions of Variables

This study explored the unique contributions of person and context factors to preservice teachers' perceptions of children's social and cognitive competence. Preservice teachers differentially rated children's social and cognitive competence on the basis of children's enrollment in OPP, actual competence, age, and sex. Each of these variables significantly contributed to variations in teachers' perceptions of children's social and cognitive competence. However, the relative contribution of each of the variables varied in relation to whether teachers were rating children's social competence or rating children's cognitive competence.

Sex was the most important contributor to preservice teachers' perceptions of children's social competence, followed by enrollment in OPP, actual social competence, and age. For preservice teachers' perceptions of children's cognitive competence, age was the most important contributor, followed by actual cognitive competence, enrollment in OPP, and sex. In addition, while prior research suggests that race/ethnicity and temperament are significantly related to teachers' perceptions of children's social and cognitive competence, the present study did not support these findings. Discussion regarding the unique contributions of all of the variables used to test the hypotheses follows.

Enrollment in OPP and Teacher Perceptions

There is no question that poverty places children at risk of negative developmental outcomes (National Center on Child Poverty, 1986). However,

researchers caution that "at risk" labels be applied judiciously to poor children, recognizing the diversity of the contexts within which children grow and develop (Hrncir & Eisenhart, 1991). The present study provides support for this stance. Even though the actual social and cognitive competence scores of OPP and non-OPP children were not significantly different, preservice teachers perceived OPP children to be significantly less socially and cognitively competent than their non-OPP classmates. This is important in light of research on self-fulfilling prophecies. Teacher biases, which are socially constructed and often unintentional, may result in lowered expectations, differential treatment of children, and ultimately lowered child attainment (Jussim, 1986; Rothenburg, 1995).

Researchers and policymakers have called for a more thorough investigation of contextual factors that contribute to a national crisis of negative developmental outcomes for children in poverty (Children's Defense Fund, 1994; Fabes, Martin, & Smith, 1994). The current study addressed this research gap by testing the hypotheses that enrollment in OPP (i.e., children's poverty status) would be the most significant factor contributing to preservice teachers' perceptions of children's social and cognitive competence. These hypotheses were not supported. As reported above, sex was the most important contributor to preservice teachers' perceptions of children's social competence and age was the most important contributor to preservice teachers' perceptions of children's cognitive competence.

While enrollment in OPP was not the most significant factor in this model, the unique contribution of enrollment in OPP to teachers' perceptions of children's social and cognitive competence was an important and significant one. Preservice teachers rated children enrolled in OPP significantly lower in social and cognitive competence than non-OPP children, beyond the unique contribution of children's actual social and cognitive competence.

Child Sex and Teacher Perceptions

As was noted in the previous section, teacher biases have been shown to negatively impact children's development by prompting differential expectations and differential treatment of children. Children, in turn, may respond in ways that confirm their teachers' expectations. This is true not only in the case of biases based on socially constructed stereotypes of class, but also of gender, race, and sexuality (Rothenburg, 1995). According to Rothenburg, such stereotypes are perpetuated through both intentional and unintentional discriminatory practices that are designed to provide justification for the unequal distribution of power in society.

The present study confirms research that has demonstrated the prevalence of gender bias among teachers (Ben Tsvi-Mayer, Hertz-Lazarowitz & Safir, 1987; Fagot, 1984; Ramsey, 1988). Child sex was the most important contributor to preservice teachers' perceptions of children's social competence and was a significant contributor to preservice teachers' perceptions of children's cognitive competence.

The finding that teachers rated girls higher in both social and cognitive competence than boys is of particular importance in light of the fact that the actual social and cognitive competence scores of boys and girls were not significantly different. This lends support to prior research that points to gender bias in schools, where conforming, passive behavior that is compatible with the female sex role is preferred by teachers over the more active and assertive behavior that is compatible with the male sex role (Kedar-Voivodas, 1983).

Age and Teacher Perceptions

Researchers agree that there is an age-based progression in the development of children's social and cognitive competence (Gesell, 1954, Piaget, 1952). The preservice teachers in this study agreed with this developmental trend. The most significant contributor to teachers' perceptions of children's cognitive competence was

age of the child. Age was also a significant contributor to teachers' perceptions of children's social competence.

Having made these supporting comments, however, it is important to take a closer look at the effects of children's age on teachers' perceptions of cognitive competence. An interesting finding from this study was that there were no significant differences between children's age and their scores on actual social competence measures. In addition, there was a significant, though modest, negative correlation between age and actual child cognitive competence ($r = .21$, $p < .0001$). In other words, younger children scored significantly higher than older children on the cognitive competence measure.

These findings support one of the major premises of child development theory, i.e., that development is not a mere function of age (Gesell, 1954). Children may progress through different developmental milestones at very different ages, although there is a general increase in competence with age. The current study demonstrates that, even though there were no significant differences between children's age and their actual social competence and younger children scored significantly higher in actual cognitive competence than older children, teachers still perceived older children to be more socially and cognitively competent than younger children. Using age alone to evaluate the social and cognitive competence of children may result in inaccurate judgments.

Actual Child Competence and Teacher Perceptions

According to results from the regression models used to test the hypotheses in this study, teachers based a significant amount of their ratings on observations of children's actual competence. This was true for teachers' ratings of both cognitive and social competence. What is important about this finding is that it points to the fact that teachers used both objective and subjective methods to evaluate children. This study has shown that age, sex, and child enrollment in OPP are three of the subjective factors

teachers used to rate children's social and cognitive competence. Identifying other subjective factors is a promising avenue for future research.

Including measures of actual child social and cognitive competence was an important aspect of this study. The fact that enrollment in OPP, sex, and age were significant contributors to teachers' perceptions of children's social and cognitive competence even when actual competence was taken into consideration strengthens the findings of this study. Not only did preservice teachers base their perceptions of children's social and cognitive competence on children's actual behavior, they were influenced by class, sex, and age biases.

Classroom Differences

As has been noted previously, classroom was included as a control variable in the current study due to the nested nature of the research design. Classroom was not significant in explaining preservice teachers' perceptions of children's social and cognitive competence in the regression models. However, there were significant differences between classrooms in relation to children's actual social competence. Post-hoc comparisons found significant differences between all classrooms with two important exceptions. There were no significant differences in children's actual social competence between classrooms 1 and 2 and between classrooms 3 and 4. Classrooms 1 and 2 were morning classes and classrooms 3 and 4 were afternoon classes. There is a paucity of research on how children enrolled in morning preschool classes may differ from children enrolled in afternoon preschool classes or on how the structure of morning classes may differ from afternoon classes.

Non-Significant Findings

Based on their importance to teachers' perceptions of children's social and cognitive competence as established in prior research, race/ethnicity and temperament were included as explanatory variables in the current study. Neither was significant in

explaining the variation in teachers' perceptions of children's social competence nor teacher's perceptions of children's cognitive competence. Possible explanations for these findings follow.

Sample size largely dictated analysis of the race/ethnic background of the children. Six race/ethnic backgrounds were represented. With only 68 children in the sample, it was not possible to analyze results for each race/ethnic category. Dividing children into White and non-White categories for the quantitative analysis did not acknowledge the variation between children in the non-White category.

Child temperament, as measured by activity level, also was not significant in explaining the variance in teachers' perceptions of children's social and cognitive competence. This finding is contrary to prior research that has found temperament, particularly high activity level, to be associated with decreased performance on social and cognitive competence measures (Halvorson & Waldrop, 1976; Jewsuwan, Luster & Kostelnik, 1993).

One possible explanation for the non-significance of temperament in explaining variation in preservice teachers' perceptions of children's social and cognitive competence is that missing data may have been problematic. While there were 68 children in the sample, only 56 temperament surveys were returned by parents. While the 82% return rate was excellent, the result still had implications for the number of cases available for analysis. According to Sirkin (1995), regression analysis is more accurate when there are at least 10 cases per variable in the regression model. The N for final regression model, with temperament as the last variable entered, was 56. An optimal regression model for this sample size would consist of 5 variables, whereas the final regression model in this study consisted of 7 variables.

In addition, it is important to note the non-clinical nature of the sample for the current study. As the small variance in temperament scores ($M = 3.73$, $SD = .80$) indicates, it is probable that children were more similar in temperament than dissimilar

and that there were too few children at the extreme ends of the spectrum of activity level to affect preservice teachers' perceptions of social and cognitive competence.

Comparison of Results from Quantitative and Qualitative Analyses

Results from the qualitative analysis generally confirmed findings from the quantitative analysis. At the same time, there were some notable differences. Both similarities and differences in findings for the two types of analyses will be discussed.

Teachers in the focus group discussions identified six of the seven independent variables as individual child factors that they felt influenced their ratings of children's social and cognitive competence. These variables included enrollment in OPP, sex, age, race/ethnicity, children's actual social and cognitive competence, and classroom. Although temperament was identified as an independent variable in the quantitative analysis, it was not mentioned by teachers during focus group discussions.

Quantitative results showed that preservice teachers rated children enrolled in OPP significantly lower in both social and cognitive competence than their non-OPP classmates. This finding is of particular concern in light of the qualitative analysis. Preservice teachers in the focus groups indicated a lack of awareness about which children were enrolled in OPP and which children were not. Preservice teachers were also hesitant to discuss distinctions between children in these two groups. However, when distinctions were made, teachers generally perceived low income children to be less competent than higher income children. At the same time, they qualified their opinions about the competence of children enrolled in OPP with comments such as, ". . . but it's not like you should make a judgment."

How have teachers convinced themselves that they are egalitarian in their perceptions of children based on OPP enrollment status? Two theories could be proposed to explain the discrepancies between what teachers stated that they felt about children enrolled in OPP and the quantitative results of the study. First, it is possible

that, even though focus group discussions were kept confidential, teachers may have felt uncomfortable disclosing information that would portray them in a negative light. In other words, teachers may have been influenced by a desire to be "politically correct." Since focus groups were only 30-minutes in length, there was little time to establish the trust needed among group members to encourage disclosure.

It may also be proposed that teachers made differential judgments of OPP and non-OPP children based on the opinions of other teachers and observations of teacher-child interactions rather than on structural components of the OPP program (e.g., transportation). In particular, it is probable that discussions of children during after-class conferences more often focused on OPP children than on non-OPP children. While teachers may not necessarily have been aware of which children were in OPP, listening to anecdotes and observing other teachers interacting with the children may have influenced their perceptions of the children's social and cognitive competence.

Some of the teachers in the focus groups reported that children enrolled in OPP were higher in cognitive skills and lower in social skills than their non-OPP peers. However, when completing their surveys, teachers rated children enrolled in OPP as significantly lower in both social and cognitive competence than non-OPP children. Qualitative results supported the quantitative findings on the effects of enrollment in OPP for teachers' perceptions of children's social competence, but not for perceptions of children's cognitive competence.

According to preservice teachers in focus group discussions, child sex was an important factor in determining their ratings of children's social competence. This finding confirmed regression analysis findings that sex was a significant predictor of teachers' perceptions of children's social competence. Teachers stated that girls were more socially competent than boys and that boys had more behavior problems than girls. This finding supports the results of *t*-test analyses in which teachers rated girls significantly higher in social competence than boys.

While findings of the qualitative analysis confirmed quantitative findings that sex was a significant contributor to preservice teachers' perceptions of children's social competence, sex was not mentioned by teachers in regard to children's cognitive competence. Therefore, qualitative results did not confirm the statistical finding that teachers perceived girls to be significantly more cognitively competent than boys. However, the fact that sex was mentioned as an important factor in affecting teachers' ratings of children's social competence during the focus group discussions, but not mentioned at all in regard to teachers' ratings of children's cognitive competence lends support to the finding that the relative importance of sex to teachers' perceptions is higher for ratings of social competence than for ratings of cognitive competence.

Focus group members also indicated that children's social and cognitive competence increased with age over the preschool years. This finding supported the quantitative finding that significant positive correlations existed between age and teachers' perceptions of social and cognitive competence. In addition, qualitative results confirmed the findings of the regression analyses that age was a significant contributor to teachers' perceptions of children's social and cognitive competence.

In addition, preservice teachers in the focus groups emphasized that they based their ratings of children's social and cognitive competence on observations and personal interactions that they had with the children. This supports the regression findings that actual child competence was significant in explaining the variation in teachers' perceptions of both children's social and cognitive competence.

Regressions testing the importance of race/ethnicity on teachers' perceptions of children's social and cognitive competence yielded no significant relationships. This was supported by the qualitative analysis, although teachers did indicate that they rated children who were not proficient in English differently from children who were proficient in English. Since the number of children who were not proficient in English

was very low, it was not possible to statistically test for differences in competence between them and those who were proficient in English.

Classroom was not significant in explaining the variation in teachers' ratings of children's social and cognitive competence in the quantitative analysis. However, several comments were made by focus group members about the differences between head teachers' practices regarding the disclosure of information about the children's background. In addition, teachers indicated that children's behavior was discussed in daily conferences. These contextual factors were not included in the quantitative analysis.

Temperament was the one independent variable that teachers in the focus groups did not identify by name as an important factor influencing their perceptions of children's social and cognitive competence. Since temperament was not statistically significant in explaining the variation in teachers' perceptions of children's social or cognitive competence, the fact that it was not mentioned in focus group discussions could be seen as support for the quantitative results.

Limitations of the Study and Recommendations for Future Research

One of the most important contributions that research can make is to prompt further questions. In this way, this study is both an ending and a beginning in the search for knowledge. Pondering the meaning of the results inspires questions about the direction for future research and the practical implications of the findings.

Research Design

This study took place in a university child development laboratory that consisted of 4 classrooms, with 6-8 student teachers providing educational services to 16-18 children in each classroom. A nested research design was required to adequately account for the random effects that are inherent when children are not assessed by the same

teachers within the same classrooms. It is acknowledged that there is more than one way to approach this research design.

After careful consideration of methods appropriate to this design, it was decided to control random effects by averaging teachers' ratings of children within each classroom. Prior to the decision to average teachers' ratings within classrooms, analysis of variance was conducted to determine if teachers within each classroom significantly differed from each other in their ratings of children's social and cognitive competence. No significant differences were found. Therefore, scores were averaged within each classroom, with each child ultimately receiving one score for teachers' perceptions of social competence and one score for teachers' perceptions of cognitive competence.

As an additional check, classroom was added as an independent variable in the statistical analysis in order to account for the variability between groups of teachers. Classroom did not significantly contribute to teachers' perceptions of either children's social competence or cognitive competence.

Having commented on the reasons for selecting the design that was used to test the hypotheses, it must also be recognized that the design is a limitation of this study because it does not account for all of the random effects in the nested model. Results from the current study suggest that the random effects would not be significant (e.g., there were no significant differences between scores of teachers within classrooms nor were there significant differences between perceived social and cognitive competence scores and classrooms). However, reanalyzing the data using a random coefficients model and comparing these results with the results from the current study's more simplistic statistical approach would make an important contribution to child development research. Further analysis of the data from this study may provide useful information to researchers trying to decide the best research designs to use when testing similar theoretical models.

Another research design limitation is related to the instrument selected to measure actual social competence in this study. The sociometric rating scale was used to measure actual child social competence. While the decision to use this measure was based on research that relates sociometric ratings to actual behavior in the preschool environment (Hymel, 1983), direct observation of children's social behaviors would have been a more accurate, though time-consuming measure.

Sample

There were 28 preservice teachers and 68 preschool children in this study. By focusing on a laboratory preschool featuring an integrated program in which children who qualify for Head Start are enrolled with children from primarily middle to upper income families, this study addressed two identified gaps in the literature. First, there is a lack of research involving preservice teachers in laboratory settings (Kontos & Wilcox-Herzog, 1997). In addition, these researchers indicated that research is limited on ways in which both individual child characteristics and socioeconomic status may affect the teacher-child relationship.

The 28 preservice teachers who rated children's competence in this study were all women similar in age and socioeconomic status, but with varying degrees of experience working with young children. Given limitations in sample size and lack of age and socioeconomic diversity among these preservice teachers, caution should be exercised in generalizing the results to other teacher populations.

While the sample of children is a strength in respect to identified needs in the literature, it is also a limitation. Since the site for this study was the only integrated Head Start/non-Head Start program of its kind in the state, caution should be used in generalizing the results to other early childhood populations.

One of the most common recommendations for future research in the social sciences is to replicate studies using a different sample. The present study is no

exception. Replicating this study with different samples would help to assess whether or not these findings are generalizable to other early childhood populations. The site for this study provided opportunities that are not available in most other early childhood programs. In particular, the program provided the opportunity to study children who qualify for OPP (i.e. Head Start) programs and children who do not together. Having both OPP children and non-OPP children within the same classrooms allowed for more controlled comparisons.

It should be noted, however, that there were some structural program differences between children enrolled in OPP and those who were not. For example, OPP children were transported to and from preschool by a special van, received free lunches, and received special resource and referral services. In addition, the income gap between OPP and non-OPP children was large. Non-OPP children were primarily from upper income families and thus did not represent the general population of children who are not enrolled in OPP. This raises questions regarding the generalizability of the results to children from middle income families. Therefore, replicating this study in a community early childhood program that serves children from all income groups is desirable, especially if program services to children are the same for children at all income levels. Program effects could then be controlled.

An additional limitation of the study was the fact that children enrolled in OPP were over represented among non-participants. Seventy-eight percent, or seven of the nine children who did not participate in the study were enrolled in the program under the OPP grant. Reasons for non-participation included refusal of parents to participate ($n = 4$), absence during data collection ($n = 3$), and recommendation of the director ($n = 2$). The diversity of these reasons for non-participation makes it difficult to speculate on how the inclusion of non-participants would have affected the results.

An additional limitation is that the race/ethnicity variable was dichotomous, i.e., White vs. non-White. However, race/ethnicity for this sample was not dichotomous.

Rather, several race/ethnic groups were represented within the non-White category. The variability within race/ethnic groups was not addressed due to sample size limitations.

Focus Groups

Data received from focus groups was primarily used to confirm the results of quantitative analyses in the present study. However, it is recommended that qualitative methods be viewed as important components of the research design from the inception of the research question, rather than merely as a way to gain confirmation of quantitative findings. For example, one of the strengths of including a qualitative analysis in addition to quantitative analyses in a research design is that it can increase and broaden questions that may prompt further research. One such question from the qualitative analysis in this study is how nonverbal communication between teachers and children may vary according to individual child, or person, factors and contextual factors. For example, do low income children receive more physical affection and physical redirection than their higher income peers? There is a need to look more closely at differences between nonverbal and verbal cues in early childhood environments.

In addition, there was some indication that the disclosure of information about children during daily teacher conferences may have focused on certain groups of children (e.g., OPP children). Additional research is needed on ways in which the structure and content of teacher conferences may impact teacher/child relationships.

Focus groups were held after quantitative data had been collected but before it had been analyzed in order to reduce researcher bias. However, it was impossible to eliminate bias since the focus groups were facilitated by the researcher rather than by facilitators unfamiliar with the research questions. It is recommended that future researchers incorporating focus groups into their studies utilize trained, unbiased facilitators.

A major limitation of this study was that focus group members were not representative of the population of preservice teachers in the Child Development Center. While 54% of the preservice teachers in this sample were enrolled in the 3-credit course, teachers enrolled in the 3-credit course represented only 25% of the focus group sample. In addition, there were no non-White focus group members, although 21% of the total sample of preservice teachers were women of color. The sample of focus groups consisted of women only who were primarily from upper middle to upper class families. Based on these observations, generalizing the data to other populations would be inappropriate. Future studies need to consider ways to expand focus group discussions to include more members from different courses, income levels and race/ethnic backgrounds.

Another limitation of the focus group analysis was time constraint. As students taking other classes, preservice teachers were limited in the time they could spend participating in this study. In addition, preservice teachers were enrolled for a 10-week academic term. It was critical to postpone data collection for several weeks into the term in order to give teachers an opportunity to become acquainted with the children. Since both qualitative and quantitative data collection needed to be completed within four weeks, the decision was made to hold focus groups after the teachers had completed ratings of children's social and cognitive competence. It was then possible to ask teachers why they rated the children the way they did.

Had time constraints not been an issue in this study, it would have been preferable to conduct focus group discussions both prior to and after teachers had completed social and cognitive competence rating scales. One positive aspect of such a design is that the effects of filling out scales on teachers' perceptions could be explored. In addition, it would be possible to ask follow-up questions to clarify the results of the first focus groups discussions.

Other Limitations and Recommendations

One area that was not addressed by this study was how teachers' characteristics may have affected the ways in which they judged children's competence. Future studies could explore the influence of such teacher characteristics as socioeconomic status, experience working with children, and degree of responsibility in the classroom (e.g., 3-credit students vs. 9-credit students) on teachers' perceptions of the children.

Finally, there is a logical next step to this research. This study demonstrated that preservice teachers' perceptions of preschool children were influenced by children's personal and contextual characteristics. However, it was not designed to assess whether teachers' differential judgments translated into differential treatment of children based on these characteristics. This is an important avenue for future research.

Implications for Policy and Practice

The goal of Welfare Reform is to decrease the number of people receiving government subsistence aid and to assist those in poverty in their journeys to self-sufficiency. This is an excellent example of a program targeted at adults that has largely unforeseen implications for their children. As parents of young children currently on government assistance programs enter training and work programs, they are faced with critical decisions about who will care for their children while they are participating in these programs. While there is a provision for funds to assist parents in paying for child care, affordability is only one of the issues facing families in poverty. Another critical issue is the quality of the care that children from poor families may be expected to receive in early childhood programs.

The results from this study suggest that poor children are perceived by preservice teachers as significantly less competent in social and cognitive competence than their non-poor classmates. Although this study assessed perceptions rather than actual teacher-child interactions, past research has found perceptions to be related to

actual behavior (Blatchford, et al., 1989). It is recommended that policymakers address the implications of these findings when discussing future child care initiatives related to Welfare Reform. In particular, this study points to the importance of including training on research related to children in poverty for child care providers who will be recipients of federal Welfare Reform child care funds.

While it is important to recognize the limitations of this study, especially in terms of generalizability of the results to other types of early childhood programs, it is clear that this study points to practical implications for both early childhood teachers and early childhood teacher training programs. This study has shown that, despite their statements to the contrary, preservice teachers do make judgments of children's social and cognitive competence based on children's socioeconomic status, age, and sex.

The preservice teachers in this study rated children enrolled in OPP, i.e., low income children, lower in social and cognitive competence than children who came from primarily high income families. This was a critical finding, especially since children enrolled in OPP did not score significantly lower on measures of actual social or cognitive competence than their non-OPP classmates. Awareness of personal bias is an important first step in making behavioral changes. It is recommended that early childhood teacher training programs include self-evaluation components that specifically address teachers' biases against low income children.

Increasing teacher awareness of personal bias is also important in relation to perceived gender differences in the classroom. The preservice teachers in this study rated girls higher in both cognitive and social competence than boys, even though girls and boys did not score significantly different on measures of actual social and cognitive competence. Rothenburg (1994) pointed to the importance of recognizing that discrimination on the basis of such factors as class and sex is perpetuated in both intentional and unintentional ways. Therefore, it is recommended that anti-bias

curriculum in teacher training programs as well as in early childhood classrooms address overt as well as hidden biases of teachers and children.

This study also pointed to the importance of focusing on the competence of children as a function of development, rather than age. While researchers have found that development is age-related, individual children attain developmental milestones at different ages (Gesell, 1954; Piaget, 1970). In the current study, there were no significant differences between older and younger children on actual social competence measures. In addition, younger children scored significantly higher on measures of actual cognitive competence. This has important implications for mixed age preschool classes. Teachers may have lowered expectations for younger children, even though younger children may be performing as well or better than their older peers. It is recommended that teacher-child interactions and early childhood curriculum focus on the individual strengths and needs of preschool children rather than on the age of the child.

One positive finding of this study was that preservice teachers also rated children's social and cognitive competence on the basis of children's actual competence. They used interactions and observations of children's actual behavior to assist them in their decision-making regarding the children's social and cognitive abilities. It is recommended that early childhood training programs emphasize preservice teachers' observation skills in order to increase the accuracy with which preservice teachers evaluate children's competence.

Although children's temperament and race/ethnicity were not significant in explaining the variance in preservice teachers' perceptions of children's social and cognitive competence in the current study, certain findings regarding these variables may have implications for early childhood education programs. First, preservice teachers in the focus groups indicated that they may have had lowered expectations for children who were not as proficient in English than other children. Thus it may be important to increase early childhood teachers' foreign language competence so that they

may be able to effectively communicate with children and families who speak languages other than English. In addition, this may increase teachers' understanding of the difficulties faced by people learning a new language.

As has been noted, this study did not find temperament to be a significant contributor to preservice teachers' perceptions of children's social and cognitive competence. However, sample size may have decreased the statistical power needed to test for temperament affects. Given prior research that has linked temperament with behavior problems (Jewsuwan, Luster, & Kostelnik, 1993), results from the current study should not be taken as reason for early childhood training programs to dismiss temperament as an important factor in teachers' perceptions of children's social and cognitive competence.

A final area of concern is disclosure of personal family information related to the young children in early childhood programs to teaching staff. Although the findings of this study should be seen as preliminary in regard to this issue, results of the qualitative analysis demonstrated that teachers based some of their judgments of children's social and cognitive competence on what they heard from other teachers. It is recommended that caution be taken in the frequency of disclosure of information about children.

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APPENDICES

APPENDIX A
DEMOGRAPHIC QUESTIONNAIRE FOR PRESERVICE TEACHERS

BACKGROUND INFORMATION

Directions: Please answer the following questions about you and your family. Please make a check mark next to the most appropriate answer or write your answer in the space provided.

Your answers will be kept completely confidential. They will be recorded only in a group summary. Please do not write your name on this form.

1. What course are you enrolled in?

- HDFS 330
 HDFS 430

2. Which of the following best describes your grade level?

- Freshman
 Sophomore
 Junior
 Senior

3. What is your major? _____

4. What is your GPA? _____

5. What is your age? _____

6. What is your sex?

- Female
 Male

7. What is your marital status?

- Married
 Single
 Separated/Divorced

8. What is the highest level of education achieved by your parents? (Circle one for each parent)

MOTHER

FATHER

- | | | |
|---|---|--|
| 1 | 1 | 8th grade or less |
| 2 | 2 | Some high school |
| 3 | 3 | Graduated from high school or G.E.D. |
| 4 | 4 | Some college (at least one year) or specialized training |
| 5 | 5 | College graduate |
| 6 | 6 | Graduate degree |

9. Please write the occupations of your parents in the space provided.

Mother _____

Father _____

10. Please estimate your parents' yearly income (Check one):

- Under \$8,000
 \$8,001 - \$20,000
 \$20,001 - \$30,000
 \$30,001 - \$40,000
 \$40,001 - \$50,000
 \$50,001 - \$60,000
 \$60,001 and up

11. Which best describes your racial/ethnic identity? (Please check all that apply.)

- White, European American, Non-Hispanic
 Asian or Asian American
 Black, African, American, Non-Hispanic
 Middle Eastern or Middle-Eastern American
 North African or North African-American
 Pacific Islander
 Hispanic or Latino American
 American Indian or Alaskan Native
 If none of the above choices apply to you, please use your own description: _____
 Decline to respond

12. List courses related to young children that you have taken in your college career.

13. Describe your prior experiences in working with young children in both informal and formal settings in the format listed below.

Setting	Position	Hrs/Wks/Mos/Yrs
<u>Example:</u>		
Home	Babysitter	4 hrs/wk for 10 mos.
Camp	Assistant Counselor	8 hrs/day for 4 wks.
Day care center	Aide	4 hrs/wk for 2 yrs.

Thank you for participating!

APPENDIX B
REVISED HARTER SOCIAL COMPETENCE SCALE
FOR ELEMENTARY SCHOOL CHILDREN

CHILD'S ID _____ TEACHER _____

For each child, please indicate what you feel to be the child's actual tendencies in response to each question, in your opinion. First decide what kind of child he or she is like, the one described on the left or the one described on the right, and then indicate whether this is just "sort of true" or "really true" for this child. Thus, for each item, put a check in one of the four slots.

ALL RESPONSES ARE CONFIDENTIAL. PLEASE ANSWER HONESTLY.

Really True	Sort of True		OR		Really True	Sort of True
1. _____	_____	This child finds it hard to make friends.	OR	For this child, it's pretty easy to make friends.	_____	_____
2. _____	_____	This child is usually well behaved.	OR	This child is often not well behaved.	_____	_____
3. _____	_____	This child has a lot of friends.	OR	This child doesn't have a lot of friends.	_____	_____
4. _____	_____	This child usually acts appropriately.	OR	This child usually does not act appropriately.	_____	_____
5. _____	_____	This child is popular with others his/her age.	OR	This child is not very popular.	_____	_____
6. _____	_____	This child often gets in trouble because of the things he/she does.	OR	This child usually doesn't do things that get him/her in trouble.	_____	_____
7. _____	_____	Compared to other children this child's age, this child has very good social skills.	OR	Compared to other children this child's age, this child does not have very good social skills.	_____	_____

APPENDIX C**REVISED HARTER AND PIKE PICTORIAL SCALE OF PERCEIVED
COMPETENCE AND SOCIAL ACCEPTANCE FOR YOUNG CHILDREN
COGNITIVE SUBSCALE**

CHILD'S ID _____ TEACHER _____

For each child, please indicate what you feel to be the child's actual tendencies in response to each question, in your opinion. First decide what kind of child he or she is like, the one described on the left or the one described on the right, and then indicate whether this is just "sort of true" or "really true" for this child. Thus, for each item, put a check in one of the four slots.

ALL RESPONSES ARE CONFIDENTIAL. PLEASE ANSWER HONESTLY.

Really True	Sort of True		OR		Really True	Sort of True
1. _____	_____	This child is pretty good at puzzles.	OR	This child is not very good at puzzles.	_____	_____
2. _____	_____	This child usually participates in a variety of activities.	OR	This child often does not participate in a variety of activities.	_____	_____
3. _____	_____	This child usually knows the names of colors.	OR	This child often does not know the names of colors.	_____	_____
4. _____	_____	This child is pretty good at counting.	OR	This child is not very good at counting.	_____	_____
5. _____	_____	This child usually knows the alphabet.	OR	This child often does not know the alphabet.	_____	_____
6. _____	_____	This child usually knows the first letter of his or her name.	OR	This child often does not know the first letter of his or her name.	_____	_____

APPENDIX D
BATTELLE DEVELOPMENTAL INVENTORY
COGNITIVE DOMAIN SUBSCALE

Battelle Developmental Inventory Cognitive Domain Subscale

Perceptual Discrimination

- The child matches simple geometric forms.
- The child matches a circle, square, and triangle.
- The child identifies simple objects by touch.
- The child matches simple words.
- The child recognizes visual differences among similar numerals, geometric forms, and letters.

Memory

- The child repeats two-digit sequences.
- The child selects the hand hiding a toy.
- The child recalls familiar objects.
- The child repeats four-digit sequences.
- The child recalls facts from an oral story.
- The child repeats six-digit sequences.

Reasoning and Academic Skills

- The child responds to *one* and *one more*.
- The child identifies sources of common actions.
- The child gives three objects on request.
- The child answers simple logic questions.
- The child completes opposite analogies.
- The child identifies the larger of two numbers.
- The child recalls single words from visual presentation.
- The child identifies missing parts of objects.
- The child recognizes picture absurdities.
- The child write letters that stand for sounds.
- The child sequences familiar events in logical order.
- The child solves simple addition and subtraction problems involving numbers thru 5.
- The child solves simple word problems involving subtraction.
- The child solves simple problems involving multiplication.

Conceptual Development

- The child identifies familiar objects by their use.
- The child identifies big and little shapes
- The child identifies the longer of two sticks.
- The child sorts forms by shape.
- The child compares the sizes of familiar objects not in view.
- The child identifies the textures rough, smooth, and soft.
- The child identifies past and present activities.
- The child identifies colors of familiar objects not in view.
- The child joins the quarters of a circle to match a complete circle.
- The child categorizes familiar objects by function.
- The child sequences squares from smallest to largest.
- The child identifies the first and last objects in a row.
- The child assembles a six-piece puzzle of a person.
- The child knows the right and left sides of his or her body.
- The child identifies the middle object in a row.
- The child tells time to the hour and half hour.

APPENDIX E
EAS TEMPERAMENT SURVEY FOR CHILDREN
ACTIVITY LEVEL SUBSCALE

**TEMPERAMENT SURVEY
(ACTIVITY LEVEL SUBSCALE)**

Rate each of the items for the child on a scale of 1 (not characteristic or typical of the child) to 5 (very characteristic of the child).

1. Child is always on the go.
2. When child moves about, he usually moves slowly.
3. Child is off and running as soon as he wakes up in the morning.
4. Child is very energetic.
5. Child prefers quiet, inactive games to more active ones.

APPENDIX F
FOCUS GROUP QUESTIONS

FOCUS GROUP QUESTIONS

Opening question:

1. How do you feel about your experience rating the children's social and cognitive competence?

Introductory question

2. What general criteria did you use to rate the children?

Transition question

3. Did you use different criteria to rate different children?
In other words, how consistent were you in your ratings?

Key questions

4. What factors do you think might have influenced the way you rated the children?
5. How do you think your family background may have affected the way you rated the children?

Ending question

6. Is there anything else you would like to say about your participation in this research project?

APPENDIX G
INFORMED CONSENT LETTERS

Dear Students:

We would like to take this opportunity to inform you of a research project that will take place at the OSU Child Development Center during winter term. Your support for our research is vital and will be greatly appreciated.

Within the next month, we will be conducting SNOWFLAKES, a study that will measure children's thinking and social skills. You will be asked to complete a questionnaire on each of the children in your classroom. It will take about 2-3 hours altogether to complete these questionnaires. Time to complete these forms will be provided to you during regular classroom hours. In addition, you may have the opportunity to participate in a focus group made up of teachers from the OSU Child Development Center.

At the same time, we would like to find out a little more about you. You will be asked to complete a short questionnaire about your educational and personal background. It will take you less than 10 minutes to complete this questionnaire, but the information you provide will be extremely helpful to us.

All information will be kept strictly confidential. Results will be reported in group form only. Results will be shared in a group meeting for teachers. At no time will your name be used for publicity or publication purposes. Data will be analyzed by computer using code numbers and any papers that identify you by name will be destroyed.

Participation in this study is completely voluntary. You may either refuse to participate or withdraw from the study at any time and this will not effect your relationship with staff members at the OSU Child Development Center.

Your participation in this study will be much appreciated. If you have any questions about this study or the procedures described above, please call Rebecca Pettit at 752-3063 or Dr. Sugawara at 737-1078. Any other questions may be directed to Mary Nunn, Sponsored Programs Officer, OSU Research Office at 737-0670.

Please complete and return the enclosed consent form. Thank you for your cooperation.

Sincerely,

Rebecca Pettit, M.S.
Principal Investigator

Alan Sugawara, Ph.D.
Professor, Human Development
and Family Sciences

Joanne Sorte, M.S.
Director, OSU
Child Development
Center

Preservice Teacher Consent Form - p. 2

**SNOWFLAKES RESEARCH PROJECT
INFORMED CONSENT FORM**

My signature below indicates that I have read and that I understand the procedures described in the enclosed letter and give my informed and voluntary consent to participate in this study.

Signature

Date

Present Address

Telephone Number

Dear Parents:

We would like to take this opportunity to inform you of a research project that will take place at the OSU Child Development Center during winter term. Your support for our research is vital and will be greatly appreciated.

Within the next month, we will be conducting SNOWFLAKES, a study that will measure children's thinking and social skills. Teachers in your child's classroom will complete questionnaires about your child's thinking and social skills and your child will be interviewed individually for about 15 minutes. We will measure thinking skills by asking your child to sort, match, or point to common items such as pictures, balls, beads, and dolls.

A teacher in your classroom will take a photograph of each of the children to use in our test of social skills. Each child will wear a paint smock when photos are taken so that the photos will be similar. Each child will then be asked to sort these photographs into 3 piles according to how much they would like to play with each child.

Children usually have fun and enjoy the game-like format of the interview. All items that children will handle (e.g., ball, pictures, beads, dolls) will be used in a controlled situation with trained adults present.

At the same time, we would like to find out a little more about what your child is like. We will be sending home a short questionnaire for you to complete about your child. It will take you less than 10 minutes to complete this questionnaire, but the information you provide will be extremely helpful to us.

All information collected during this study will be kept completely confidential. Only Rebecca Pettit and Dr. Alan Sugawara will have access to confidential information from this study. Results of the social and thinking skills interview will be shared in a group meeting for parents. Results will be reported in group form only. At no time will your name or your child's name be used for publicity or publication purposes. Data will be analyzed by computer using code numbers and any papers that identify you or your child by name will be destroyed.

Participation of you and your child in this study is completely voluntary. You may either refuse to participate or withdraw from the study at any time and this will not effect your relationship or your child's relationship with staff members at the OSU Child Development Center.

If you have any questions about this study or the procedures described above, please contact Rebecca Pettit at 752-3063 or Dr. Alan Sugawara at 737-1078. Any other questions may be directed to Mary Nunn, Sponsored Programs Officer, OSU Research Office at 737-0670.

Please complete the enclosed form and send it to us in the stamped envelope. Thank you for your cooperation.

Sincerely,

Rebecca Pettit, M.S.
Principal Investigator

Alan Sugawara, Ph.D.
Professor, Human Development
and Family Sciences

Joanne Sorte, M.S.
Director, OSU Child
Development Center

Parent Informed Consent Form - Page 2

**SNOWFLAKES RESEARCH PROJECT
INFORMED CONSENT FORM**

My signature below indicates that I have read and that I understand the procedures described in the enclosed letter and give my informed and voluntary consent to participate in this study. I also give informed and voluntary consent for my child to participate in this study.

Check One:

My child and I will participate in this study.

My child and I will not participate in this study.

Parent's Name (Please Print)

Child's Name

Parent's Signature

Date

Please return this form in the enclosed stamped envelope.

THANKS!