The Influence of Home and Preschool Environment on
Young Children’s Behavioral Self-Regulation

Master’s Thesis

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By

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Abstract

The goal of this study was to explore how home and school environment could promote behavioral self-regulation in preschool children for successful school-readiness. Based on Ecological Systems Theory and Self-Determination Theory, this study has explored the influence of home structure, preschool classroom structure, and preschool teachers’ autonomy-support on the development of preschool children’s behavioral self-regulation. The results of this study showed that Teacher’s autonomy-support was the only significant predictor for behavioral self-regulation after controlling for child age and family income. No interaction effect between home and preschool environment could be found. This study suggests that the teacher’s interaction with the child is more important than the class organization for development of child behavioral self-regulation in preschool classrooms. Also, the influence of family income was the largest, implicating that the intervention effort should be focused on children from economically disadvantaged families. Future directions regarding the age-appropriate measures and optimal teacher-child interaction relationship have been suggested.
Dedication

Dedicated to my mom,

the most loving person in this world.
Acknowledgments

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Fields of Study

Major Field: Human Ecology

Human Development and Family Science
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Chapter 1. Introduction

As young children make the transition from preschool to kindergarten, they encounter a more structured class environment that requires them to focus their attention, to follow instructions, and to inhibit inappropriate behaviors (McClelland et al., 2007). Contrary to the long-held belief that intelligence is the key to school success, recent research has found independent influence of self-regulatory skills as an equally powerful predictor for school readiness and adjustment (Blair, 2002; Grolnick & Slowiaczek, 1994; Normandeau & Guay, 1998; Wentzel, Weinberger, Ford, & Feldman, 1990). The development of self-regulatory skills before entering kindergarten is critical for children to be prepared for and to be successful in increasingly more organized educational settings.

Self-regulation is a complex construct that describes one’s ability to regulate his or her own behavior, attention and emotions (Smith-Donald, Raver, Hayes, & Richardson, 2007). It is defined as acquired intentional skills to control, direct, and plan one’s cognition, emotions, and behavior (Schunk & Zimmerman, 1997). Self-regulation includes three major domains: behavioral regulation, emotional regulation, and attentional regulation. Although the three domains do overlap and influence each other (Carlson, 2003; Olson, Bates, Sandy, & Schilling, 2002; Rothbart, Ahadi, Hersey, & Fisher, 2001), behavioral regulation has been most widely studied and found to be most
directly related to school-readiness (Ponitz et al., 2008). For instance, behavioral regulation predicted children’s academic achievement such as mathematical achievement (Ponitz, McClelland, Matthews, & Morrison, 2009), literacy, vocabulary, and math skills (McClelland et al., 2007). Also, behavioral regulation was significantly related to lower risk for later adjustment problems (Olson et al., 2002; Raver, 2002), to better interpersonal skills, as well as to academic achievement (Howes, Calkins, Anastopoulos, Keane, & Shelton 2003), and later social competence (Eisenberg et al., 1997).

In spite of the significance of behavioral regulation, researchers have reported that many children today lack such necessary regulatory skills for school adjustment. McClelland, Morrison, and Homes (2000) reported that 17% of kindergarteners lacked regulatory skills such as sitting still, following directions and working independently. Also, Rimm-Kaufman, Pianta, and Cox (2000) have shown that 46% of the kindergarten teachers think that about half of the children in their classes were short of basic regulatory abilities. Although it is true that children enter kindergarten with differing levels of behavioral regulation (Foulks & Morrow, 1989; Lin, Lawrence, & Gorrell, 2003), those studies report striking statistics about the lack of young children’s behavioral self-regulatory skills.

The fact that so many children lack the critical skills of behavioral self-regulation calls for research on how families and schools can help children develop these skills. In order to address this issue, this study applies the Ecological Systems Theory
(Bronfenbrenner, 1979) to examine how children’s self-regulation develops within certain environments. The Ecological Systems Theory explains that human development occurs between the interaction between a growing human organism and the changing immediate environments. It also emphasizes that the relationship between the person and the environment is affected by the association between the immediate settings and the larger social contexts. Bronfenbrenner (1979) specified two immediate environmental systems that affect a child’s development: *Microsystems*, the relationship between the developing person and the innermost immediate setting such as home and school, and *Mesosystem*, the interactive relations among major immediate settings at a specific point in a person’s life, such as family, school and peer group. Family has been identified as the principal context where the child develops. However, it is not the only environment that can influence a child development: it depends on other immediate settings, primarily the school (Bronfenbrenner, 1986). Therefore, this study will take the perspective that human development takes place within the influence of the immediate settings of family and school (Microsystems), and also from how the two immediate settings affect each other (Mesosystem). This perspective has been supported by other researchers who emphasized the importance of parent- and school-factors in the development of child self-regulation (Morrison, Ponitz, and McClelland, 2002; Vigotsky, 1978).

Building upon the Ecological Systems Theory that emphasizes how human development occurs under the influence of interrelationship with the environments, the
next step is to examine *specific environmental factors* that influence the development of child self-regulation. Self-Determination Theory is most useful in understanding particular environmental factors that enhance or undermine the development of self-regulation (Ryan & Deci, 2000). Self-Determination Theory posits that people have innate psychological needs and inherent growth tendencies which are the basis for the development of self-regulation. Self-Determination Theory identifies three innate psychological needs: *competence*, which is the need to feel competent in the interactions with the environment; *autonomy*, which is the internal locus of causality for action; and *relatedness*, which is the need to feel connected or related to important others. The basic premise of Self-Determination Theory is that people will develop better self-regulation in environments that facilitate these needs. Grolnick and colleagues have supported this theory (Grolnick, & Farkas, 2002; Grolnick, Kurowski, & Gurland, 1999; Grolnick & Ryan, 1989) and found specific environmental factors that best facilitate the development of child self-regulation: environments that *support autonomy*, environments with clear and consistent *structure*, and environment where caregivers show *involvement* in the children’s lives.

Utilizing the Ecological Systems Theory and the Self-Determination Theory, the primary goal of this study is to find the unique contribution of home and preschool environment. Specifically, this study will focus on the effect of *autonomy-supportive* environment that offers clear and consistent *structure* on the development of child
behavioral self-regulation. Several variables (child age, gender, family income, mother’s education, and the length of attending the current classroom) will be controlled in order to account for child and family characteristics. Also, the interaction between the home and preschool influencing child behavioral self-regulation will be examined.

Literature Review

Autonomy-support

Grolnick and Ryan (1989) conceptualized autonomy-support from psychologically controlling versus autonomy-supportive parenting (Baumrind, 1967; 1971). Autonomy-support was defined as how much the parents value and use techniques to encourage children to solve problems independently. It is also defined as how the parents let children choose and participate in decisions, rather than forcing them to depend on external dictation, controlling rewards, and punitive disciplinary techniques. Thus, autonomy-support is referred to as supporting children’s capacity to self-initiate and to be autonomous (Ryan, Deci, Grolnick, & La Guardia, 2006).

The link between autonomy-support and child self-regulation is self-explanatory, since parents who support children’s autonomy would foster children to learn how to initiate and choose their own actions and behaviors (Grolnick & Ryan, 1989). Many studies have supported the significance of parental autonomy-support on the development of child self-regulation. Golnick & Ryan (1989) measured the parental autonomy-support
and various child outcomes from 8- to 12-year-old children and their parents. The results showed significant and positive association between parental autonomy-support and positive child outcomes such as self-regulation, academic achievement, and social adjustment. A longitudinal study examining the association between parental autonomy-support and child school adjustment also found similar results. Joussemet, Koestner, Lekes, and Landry (2005) measured parental autonomy-support on children who were 5 years old. Measuring the child outcomes of academic achievement and social adjustment after three years when they were in the third grade, Joussemet et al. (2005) found that parental autonomy-support was positively and significantly associated with child outcomes. Although self-regulation construct was not included in the study, findings in Golnick & Ryan (1989) indirectly suggest that the level of child self-regulation may have mediated the influence of parental autonomy-support on the academic and social adjustment in the third grade. Also, in an observation study of 6- and 7-year-old children and their mothers, Deci, Driver, Hotchkiss, Robbins, and Wilson, (1993) reported that controlling vocalization of mothers, as opposed to autonomy-supportive behavior, was associated with lower levels of children’s intrinsic motivation, which is a critical factor in development of self-regulation (Ryan & Deci, 2000), during a free-choice play periods.

While parental autonomy-support has been supported as a strong predictor for young children’s self-regulation, the literature on the influence of teachers’ autonomy-support is limited: direct relationship between the teachers’ autonomy-support and the
child’s behavioral self-regulation has not yet been studied. The literature on how teacher’s autonomy-support influences children generally only examines students’ academic achievement or classroom engagement other than children’s own attribute such as self-regulation. Soenen and Vansteenkiste (2005) examined both parental and teachers’ autonomy-support in adolescents’ self-determination in life domains of school, social competence and job-seeking behaviors. Teachers’ autonomy-support significantly predicted self-determination in school and job seeking behaviors, while parental-autonomy-support was significantly related to all life domains. In a study of older adolescents (mean age 17-18), Reeve (2006) also found that the teachers can be the facilitators for student autonomy and engagement in classrooms. However, the influence on how teachers can help develop children’s self-regulation in preschool has not been explored.

Studies that did look at children’s self-regulation examined how teachers’ overall teaching style or the classroom climate can influence the development of child self-regulation rather than the teacher’s autonomy-support. Morrison, Ponitz, and McCleland (2010) reported that preschool providers can help children develop self-regulation skills successfully when they are less didactic or directive. Stipeck, Feiler, Daniels, and Milburn (1995) examined how child-centered versus more didactic- and instruction-oriented preschool programs influence the children’s competence and motivation (which are critical in development of self-regulation). They found that children in child-centered
preschool programs, where teachers encouraged child initiatives, depend less on adults and chose more challenging tasks which reflects the self-regulation abilities. Finally, Vansteenkiste, Simons, Lens, Sheldon, and Deci (2004) found students in autonomy-supportive class climate showed greater learning performance and persistence, rather than students in controlling class climates.

Thus, previous research that examined the influence of teacher’s autonomy-support only focused only on older students’ academic achievement or classroom engagement. In addition, the research that did explore the development of children’s self-regulation only examined the association with overall teaching style or classroom climate. The direct relationship between the teachers’ autonomy-support and the child’s behavioral self-regulation has not yet been studied. Therefore this study will examine the direct relationship between the teachers’ autonomy-support and young children’s self-regulation.

*Structure*

Grolnick and Ryan (1989) also conceptualized structure from parenting style literature, firm control versus lax control parenting (Baumrind, 1967; 1971). Structure was defined as how clear and consistent parental guidelines, expectations and rules are offered to children at home.
There are two rationales for why structure would be associated with self-regulation, although they are rather distally associated with self-regulation compared to autonomy-support. First, setting a clear and consistent guidelines and rules will help children to have clearer perception of control (Grolnick & Ryan, 1989). For example, children from home environments with clear and consistent rules will better perceive and differentiate control processes at school. Secondly, children will have clear sense of action-outcome relations when they receive constant and consistent guidelines and rules. This is to say that children who understand the significance of their behavior and their consequences will be more capable of focusing their effort to follow certain rules because they are better at predicting the environment (Grolnick et al., 1999). Applying these rationales, this study hypothesizes that clear and consistent home and school structures will enhance the likelihood for children to develop better self-regulation.

Home chaos is a widely-studied construct regarding home structure. It is defined as a level of confusion, agitation, and sense of rush, disorganization in daily routines (Corapci & Wachs, 2002). This study will examine this construct as representing the home structure because it entails the disorganization and unpredictable home environment that lack regularities, routines and rituals. Home chaos has been studied and found significantly related to adverse child outcomes such as behavioral problems and low level of cognitive abilities. For example, Pike, Iervolino, Eley, Price, and Plomin (2006) found that home chaos significantly predicted child behavioral problems and
cognitive outcomes. Also, Dumas et al. (2005) have found that home chaos was related to limited attention focusing and reduced ability to understand and respond to social cues in children. In spite of the theories that emphasize the importance of home structure on child behavioral self-regulation, it has not been studied in relation to home chaos. This study examined the association between home chaos and child behavioral self-regulation.

Structure in the classroom is defined as the amount and clarity of information given to the students about what the teacher expects from them, how the curriculum is organized, and how the learning goals are going to be achieved (Jang, Reeve, & Deci, 2010). Specific preschool classroom structure measured by how teachers organize their classrooms has yet to be examined in relation to children’s behavioral self-regulation (Morrison et al., 2010). Current literature has examined and found positive and significant association between schooling itself and child behavioral regulation (Burrage et al., 2008; McCrea, Mueller, & Parrila, 1999; Miyake, Friedman, Emerson, Witzki, & Howarter, 2000). Also, some studies have offered evidence regarding class organizations influencing children’s literacy (Cameron, Connor, & Morrison, 2005; Cameron, Connor, Morrison, & Jewkes, 2008) and classroom-level independent work (Cameron et al., 2005). Morrison et al. (2010) suggest that those findings on children’s cognitive abilities and executive functions do shed light on potential positive relationship between classroom organization and child behavioral self-regulation. Grolnick and Farkas (2002) also suggest that the importance of teacher’s organization of classroom can be inferred from
the parenting literature that reports the importance of parental structure in child self-regulation. Based on those study findings and implications, this study will examine the direct relationship between the classroom structure and children’s behavioral self-regulation.

Current Study

This study examined the relationship between home and preschool environment, and child self-regulation. Specifically, this study used Self-Determination Theory to explain how autonomy-supportive environment and clear and consistent structure can influence the development of child self-regulation.

Although Self-Determination Theory theoretically supports the relationship between autonomy-supportive environment with clear and consistent structure and self-regulation, current literature lacks research on how teachers’ autonomy-support, home structure, and classroom organization would influence children’s development of behavioral self-regulation: teachers’ autonomy-support has been studied rather in relation to older children’s academic achievement and competence (Reeve, 2006; Reeve et al., 2004; Soenen & Vansteenkiste, 2005); home structure has been widely studied around children’s cognitive and behavioral outcomes but not in relation to the development of regulation (Dumas et al., 2005; Pike et al., 2006); and classroom organization has been
studied more in relation to literacy skills or academic achievement (Cameron et al., 2005; Cameron et al., 2008; Morrison et al., 2010).

Considering the importance of young children’s development of self-regulation on their early school success and school readiness, this study will examine how less studied domains of home and school environment influence children’s development of behavioral self-regulation.

**Hypothesis**

*Hypothesis I.* The home environment measured by home chaos will be negatively associated with child behavioral self-regulation, after controlling for the child’s age, gender, mother’s education, and family income.

*Hypothesis II.* The preschool environment including the teacher’s autonomy-support and class structure will be positively related to child behavioral self-regulation, with the addition of length of stay in the current classroom as a control variable.

*Hypothesis III.* The home environment and the preschool environment will interact in influencing the child behavioral self-regulation after controlling for child’s age, gender, mother’s education, family income, and the length of stay in the current classroom.
Chapter 2. Methods

Overview of Design

The data used in this study were drawn from a larger study evaluating the effects of Ohio’s Quality Rating and Improvement System (QRIS), Step Up To Quality (SUTQ) on child outcomes. SUTQ is a voluntary quality rating system for early child care and education programs in the state of Ohio (Zellman & Perlman, 2008). Beginning in 2005, SUTQ was piloted in nine counties and was expanded state-wide in 2008. The purpose of SUTQ is to offer the parents transparent quality data on child care settings, and to motivate and support the programs to improve their overall quality.

The larger study collected data from 48 child care center and education programs throughout the state of Ohio in 2009-2011. Twelve programs were randomly selected from each of the three quality levels in SUTQ (1, 2, or 3 star) and from state-licensed programs that were not part of the SUTQ system. In each program, two preschool teachers were randomly selected to take part in the study, and from those teacher’s classrooms, 5 children were selected for inclusion in the study. Data were collected on administrator qualifications, teacher qualifications, teaching experiences, attitudes toward children and attitudes towards teaching as a career. Child-focused data included a parent report questionnaire that asked about demographic questions, home chaos, feelings about parenting, depression and about their children’s social-emotional development. The
children were assessed directly on behavioral self-regulation, literacy, and math, and teachers were asked to complete the Social Skills Improvement System (SSIS) on each child. In addition, the preschool classrooms were observed on the physical environment, class organization, and literacy stimulation.

The administrator, teacher and parental surveys were mailed to and from the participants. Parents signed the consent forms before their children were assessed. Trained research staff conducted the class observation and the child assessments. The current study used data from the parents’ questionnaire on home chaos, the classroom observations, the child direct assessments, and teacher’s report on autonomy-support. The study was approved by the Institutional Review Board.

Participants

Data for this study was collected from 380 children enrolled in 45 preschools (87 classrooms). Of 380 children, 179 (47.1%) were girls and 199 (52.4%) were boys. The age of children ranged from 35 months to 70 months (M= 55.21, SD= 6.38). For ethnic distribution, there were 66.3% European American, 19.2% African American, 11.1% Multi-racial, 1.8% Asian/Native Hawaiian or Pacific Islander, and 0.3% American Indian or Alaska Native. The average length of being enrolled in the current classroom was 8.12 months (ranging from .66 to 29.60 months, SD= 5.62). Majority of the parents/guardian respondents were mothers (88.4%) with 9.2% of fathers, and others (2.3%). For ethnic
distribution of the respondents, there were 73.4% European American, 19.5% African American, 3.2% Multi-racial, 2.1% Asian/Native Hawaiian or Pacific Islander, and 0.3% American Indian or Alaska Native. The average total annual income ranged from $35,001 to $40,000, and the average parent respondent’s highest education level was Associate of Arts Degree (A.A.). Demographic statistics are shown in Table 1.

Procedures

The parental questionnaire was sent to the parents after the consent forms were signed. The parents sent the questionnaire back by mail. The classroom observation was conducted by trained research assistants for about 45 minutes. There were several observation measures including ELLCO, Classroom Assessment Scoring System, and Early Childhood Environment Rating Scale. Classrooms were rated on a checklist of 5-point Likert scale. The child assessment took place in the preschool classrooms for about 10 minutes per child. The assessments were also conducted by the trained staff. All the data were entered into database by trained staff and were double-checked for accuracy.

Measures

Demographic

Demographic questions were administered as a part of parents’ questionnaire regarding children’s age, gender, race/ethnicity, and the relationship to the respondent,
the respondent’s race/ethnicity, highest level of education, marital status, and household income.

**Teachers’ Autonomy-support**

**Modernity Scale.** Teachers’ autonomy-support was measured by Modernity Scale adopted from the Parental Modernity Scale (Schaefer & Edgerton, 1985). This instrument was originally designed to measure parents’ traditional (authoritarian) and progressive (democratic) beliefs toward children. It has 30 items which are measured by 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). From the original scale, 19 items that were appropriate for teachers to answer were selected and 3 items were minimally revised (changing the terms for classroom environment and teacher-child interaction). The Teacher’s Modernity Scale discriminates the teachers’ attitudes toward children: a traditional or relatively adult-centered attitude versus a modern or progressive, child-centered attitude.

The score was determined by taking the mean of all the items, with the child-centered items reversed-scored. High score represents adult-centered perspective, and the low score represents child-centered perspective. Some of the adult-centered items were “Children must be carefully trained early in life or their natural impulses make them unmanageable” and “Children should always obey the teacher.” Some of the child-centered items were “Children should be allowed to disagree with their parents if they
feel their own ideas are better.” High internal consistency of Cronbach’s alpha .84 was reported in the original study (Schaefer & Edgerton, 1985). The current study also showed high reliability of .83.

Although the Teacher’s Modernity Scale measures teacher’s attitude rather than their actual teaching practice, it can be used to present autonomy-support because studies have shown that teacher’s beliefs and attitude influence overall classroom atmosphere and teaching behavior. For example, Pianta et al. (2005) offered evidence that the teachers’ attitude toward children influence their actual teaching behavior and classroom quality. The teachers who had more traditional, adult-centered attitude toward children received lower score on Emotional Quality (positive climate of the classroom, teacher sensitivity, and behavior management) and the Interaction score in Early Childhood Environmental Rating Scale–Revised Teaching and Interactions (teacher-child interactions, and encouraging communication and reasoning skills). These teachers offered less child-centered activity setting compared to teachers who had more child-centered attitude. Also, the teachers’ adult-centered attitude was negatively associated with the quality of teacher-child interaction, and instructional learning format. La Paro et al. (2009) also found that the teachers with more adult-centered attitude scored significantly lower in all three domains of Classroom Assessment Scoring System (CLASS): emotional support, classroom organization, and instructional support.
Structure

**Home Chaos.** Home chaos was measured by the short version of Confusion, Hubbub, and Order Scale (CHAOS, Petrill, Pike, Price, & Plomin, 2004). The original CHAOS (Matheny, Wachs, Ludwig, & Phillips, 1995) was composed of 15 items with true or false responses. It was developed to measure environmental confusion to the extent that the home environment is noisy, disorganized, and hasty. The short version used in this study was composed of six items with two newly added items for TV habits and children’s routine daily life (“There is usually a television turned on somewhere in our home,” and “The children have a regular bedtime routine”). Also, the scale was changed to 5-point scale (1 = Definitely Untrue, 5 = Definitely True). The mean of all six items were computed for one single score and higher score indicated higher levels of chaos at home. Petrill et al. (2004) reported acceptable internal consistency (Cronbach’s α=.63). In the current study the reliability was rather low but still in the acceptable range (Cronbach’s α=.58)

**Preschool Environment – ELLCO.** The class structure was measured by the Early Language and Literacy Classroom Observation (ELLCO) developed by Smith, Dickinson, Sangeorge, and Anastasopoulous (2003). ELLCO is a tool to evaluate the class practices and environmental support for promoting children’s early language and literacy development. There are three subscales: Literacy Environment Checklist,
Classroom Observation and Teacher Interview, and the Literacy Activities Rating Scale. Among those three measures, the Classroom Observation was only used to obtain objective ratings of classroom quality and the enacted curriculum that are related to early language and literacy development (Smith et al., 2003). Therefore, this study has selected the Classroom Observation subscale to measure classroom structure. Also, Smith et al. (2003) examined the psychometric properties for this measure in two classroom observation studies, the Head Start-funded New England Quality Research Center (NEQRC) and Literacy Environment Enrichment Project (LEEP). They found that the Classroom Observation can be divided into two subscales of “General Classroom Environment” and “Language, Literacy, and Curriculum.” The General Classroom Environment will only be used in this study because the goal is to look at how classes are structured and organized rather than how the class environment support language and literacy development.

General Classroom Environment subscale is composed of 6 items: (1) Organization of the Classroom, (2) Contents of the Classroom, (3) Technology, (4) Opportunities for Child Choice and Initiative, (5) Classroom Management Strategies, and (6) Classroom Climate. Trained staffs observed and rated items with 5 point Likert scale ranging from 1 (minimal evidence) to 5 (strong evidence). The mean of 6 items will be used to represent the quality of classroom structure, with higher score indicating more structured classroom environment. Smith et al. (2003) reported high internal consistency
of Cronbach’s Alpha .83 for General Classroom Environment. For the current study, the Cronbach’s Alpha for Class Observation was .88 (14 items), and .75 for selected 6 items.

Child Behavioral Self-Regulation

**Head-Toe-Knees-Shoulders.** Head-Toe-Knees-Shoulders (HTKS, Ponitz et al., 2009) measure is a structured observational task to examine children’s behavioral regulation including inhibitory control, attention, and working memory. These domains of behavioral regulation have been found to be significantly related to school success (Adams, Bourke, & Willis, 1999; Blair, 2002) and academic achievement (Barkley, 1994; Howse et al, 2003). HTKS is an extended version of Head-to-Toes Task (HTT, Ponitz et al, 2008) which showed appropriate convergent validity and variability in 4-year-olds but not in participants older than 5 years. Due to the ceiling effect shown in HTT, HTKS has been developed in order to measure behavioral regulation in older children more appropriately.

The HTKS task is composed of two sets of 10 trials. In the first 10 trials, the experimenter gives two commands “Touch your head” to which the child has to respond by touching the toes, and “Touch your toes” to which the child has to respond by touching head. In the second 10 trials, two additional commands are given, “Touch your knees,” and “Touch your shoulders” to which the child has to respond by touching their shoulders and knees respectively. In following the commands reversely, the child needs
to remember the rule (working memory), pay attention to the commands (attention) and inhibit the instinct response and act according to the rule (inhibitory control).

For the scoring, 2 points are given for correct responses, 1 point for incorrect responses followed by self-correction which ends with correct action, and 0 point for incorrect responses. Scores ranged 0 to 40, and higher scores indicated higher levels of self-regulation.

Data Analysis Plan

For the statistical analysis, Statistical Package for the Social Science (SPSS) 19 will be used. Preliminary analyses including descriptive analysis and correlation analysis will be conducted to check the normal distribution of the data and the relations among the variables. If the skewness or kurtosis is not in the acceptable range (±1.96), transformation will be conducted. (Grimm & Yarnold, 2006).

For the primary analysis, a series of hierarchical multiple regressions were conducted to examine the unique contribution of home and preschool environment on the development of child behavioral self-regulation. To address the first hypothesis, child’s age, gender, family income, and mother’s education were entered in the first block as control variables, and home chaos was added to the second block. For the second hypothesis, length of stay in the current classroom was added to the first block to account for the influence of variation in how long the child stayed in the classroom. Then
teacher’s autonomy-support and classroom structure will be added to the second block. Finally, the interaction effect of preschool environment on the association between the home chaos and child behavioral self-regulation will be examined (Baron & Kenny, 1986).
Chapter 3. Results

Preliminary Analyses

The descriptive analysis was conducted to check the diagnostics, the mean and the range of independent and dependent variables. In diagnostics checks, all independent and dependent variables were in acceptable range for skewness and kurtosis. Descriptive statistics showed that home chaos ranged from 1 to 4.5 (M = 2.09, SD = 0.58), Teacher’s autonomy-support ranged from 1.19 to 3.68 (M = 2.52, SD = 0.46), classroom structure ranged from 2.17 to 5 (M = 3.78, SD = 0.64), and Child Self-Regulation ranged from 0 to 40 (M = 14.17, SD = 14.54). The descriptive statistics are shown in Table 2.

Table 3 shows the correlation matrix of all independent and dependent variables. There were some significant relationships found. First, family income and mother’s education were highly and positively correlated (r = .64, p< .01), and they were mostly correlated significantly with other variables as well. Children from higher income families and whose mother have higher education level showed significantly higher self-regulation (r = .31, p< .01 and r = .26, p< .01), had teachers with significantly less adult-centered traditional attitude toward children (r = -.21, p< .01 and r = -.15, p< .01), and significantly more structured classroom (r =.11, p< .05 and r =.15, p< .05). For home chaos, Mother’s education was negatively and significantly related (r = -.11, p< .05) but family income was not. The overall correlations suggest that family income and the
mother’s education level has great influence on the children’s early experience at home, preschool, and the development of self-regulation.

The teacher’s attitude also had significant relationship with the child’s self-regulation level. Children whose teachers had more child-centered attitude and who stayed at the current classroom for longer had significantly higher self-regulation ($r = -.14$, $p < .01$ and $r = .16$, $p < .01$). High correlation between child age and self-regulation suggests that the older the child gets, the better they develop self-regulation ($r = .42$, $p < .01$).

The correlation results put forward the grounds for primary regression analysis. The variables that have been shown to be significantly related to child self-regulation will be put into the regression analysis. Although home chaos and classroom structure were not significantly related to child self-regulation, the coefficients were in the expected direction from the theoretical discussion: children from more chaotic families are more likely to have lower self-regulation and children from more structured classes are more likely to have higher self-regulation. Therefore, those two variables will be further explored in the regression analysis.
Primary Analyses

A series of hierarchical regression analyses were conducted to test the hypotheses of this study. The overall results of the three hypothesis testings are shown in Table 4 and the coefficients and their significance results are shown in Table 6.

To test the first hypothesis, child age, family income, and mother’s education were entered into the first block as controlling variables, home chaos was entered into the second block as an independent variable, and child self-regulation was entered as the outcome. Among the control variables, the coefficient for mother’s education was not significant (p= .16) and therefore was dropped from further analysis. The regression results showed that the model was significant F[3, 355] = 37.456, R$^2$ = .24, p= .000. Overall, the model explained about 24% of the variance in child self-regulation. Standardized coefficients showed that child age and family income were significant and positive predictor for child self-regulation. However, although the coefficient for home chaos was negative as expected, it was not significant ($\beta$= -.06, p= .17). Moreover, the addition of home chaos in the second block only explained 0.4% of the variance which was not significant ($\Delta R^2$ = .004, p=.17). This suggests that the controlling variables explained most of the variance while home chaos was neither significant nor increased considerable amount of variance. Therefore, the first hypothesis was not supported.

The second hypothesis was that the preschool environment measured by the teacher’s autonomy-support and classroom structure would be positively related to
child’s self-regulation. Before the hierarchical regression analysis, correlation between the two preschool environmental measures were conducted in order to confirm appropriateness of using Teacher’s Modernity Scale (which measured the teacher’s attitude toward children) to represent teacher’s autonomy-supportive behavior. As shown in Table 5, although Teacher’s Modernity Scale was not significantly correlated with the total ELLCO score, one individual item of ELLCO showed significant correlation. The fourth item which measured the extent to which the design and the structure of the classroom encourages child choice and initiative was significantly and negatively related to Teacher’s Modernity Scale (r = -.18, p < .01). Although the correlation was rather small, this does show that the teacher’s adult-centered attitude toward children is related to lower level of child opportunity and initiative in the classroom. In other words, teachers with more adult-centered traditional view toward children would use less teaching practices that allow child choice and independence in the classroom. Although the current study yields only one item of ELLCO that is related to Teacher’s Modernity Scale, based on the literature that also has supported the association between the teacher’s attitude and actual teaching practices, Teacher’s Modernity Scale will be utilized as representing autonomy-support.

To test the second hypothesis, Teacher’s Modernity Scale and the ELLCO observation score were entered as the independent variables with the child self-regulation as the outcome variable. As was for the first set of regression analysis, child age, family
income, mother’s education were entered into the first block as controlling variables, and the length of stay in the current classroom was added in order to control for the influence of how long the child has been in the current classroom. Among the control variables, mother’s education and the length of stay in the current classroom were not significantly related to the child self-regulation. Thus, those two variables were dropped from further analysis. The regression results showed that the model was significant $F[4, 344] = 27.838, R^2 = .245, p = .000$. About 24.5% of the variance in child self-regulation was accounted for by the association with preschool environment and the control variables. The preschool environment measured by teacher’s autonomy-support and classroom structure alone significantly added about 1.5% of the variance ($p = .036$). As was for the first model, child age and family income were significant and positive predictor for child self-regulation ($\beta = .36, p = .000$ and $\beta = .24, p = .000$ respectively). Teacher’s autonomy-support was significantly and negatively related to child self-regulation ($\beta = -.12, p = .01$). However, the classroom structure was not significant ($\beta = .02, p = .73$) and the coefficient was positive but small ($\beta = .02$). Therefore, the second hypothesis was partially supported.

The last hypothesis tested the moderation effect of preschool quality measured by the teacher’s autonomy-support and classroom structure on the relationship between home chaos and the child self-regulation. The controlling variables were the same as previous analysis. Before conducting the analysis, the variables for which the interaction effect was tested were mean-centered. Centering the independent variables is
recommended when testing the interaction effect because it significantly reduces the multicollinearity problem (Keith, 2006). Multicollinearity problem causes strange coefficients and large standard errors make interpretation difficult. Baron and Kenny (1986) also recommended that the interaction terms should not be correlated with the independent variables. Therefore, home chaos, teacher’s autonomy-support, and classroom structure were all mean-centered by subtracting the mean of each variable from the observed value. The control variables were entered in the first block and all three independent variables were entered into the second block. Then in the third block, the product terms of Home Chaos x Teacher’s Autonomy-support (mean-centered) and Home Chaos x Class Structure (mean-centered) were entered. If the addition of the third block leads to significant increase in the variance explained ($R^2$), it indicates that there is a significant interaction effect. The regression results showed that the model was significant $F[7, 339] = 16.141$, $R^2 = .25$, $p = .000$. About 25% of the variance in child self-regulation could be attributed to the association with independent variables and the interaction terms. However, the addition of interaction effect could increase only 0.1% of variance and this increase was not significant ($p = .87$). Moreover, the coefficients for the product terms were not significant (Chaos x Autonomy-Support : $\beta = -.004$, $p = .930$; Chaos x Classroom Structure: $\beta = -.03$, $p = .602$). Therefore, the third hypothesis was not supported.
Chapter 4. Discussion

The goal of this study was to explore the influence of home and preschool classroom structure each measured by Home CHAOS and ELLCO, and the influence of teacher’s autonomy-support measured by the Teacher’s Modernity Scale on the children’s behavioral self-regulation. Children’s behavioral self-regulation was the main focus of this study due to its significance in predicting young children’s school-readiness and subsequent school adjustment. The purpose of this study was to find out how home and preschool environment can help develop such important regulatory skills. In order to achieve this goal, two theories were utilized. Bronfenbrenner’s Ecological Theory was used for the selection of primary environment of home and the interaction effect between home and preschool environment. Self-Determination Theory also offered the perspective that autonomy-supportive environment with clear and consistent structure is critical in order for children to successfully develop self-regulation skills. The results of this study will be discussed with how home and preschool environment of autonomy-support and structure were related to children’s behavioral self-regulation.

First, there were several control variables that were used to account for the child and family attributes. Initially child age, gender, family income, mother’s education, and the length of stay in the current classroom were entered into the first block of each analysis. Of those, only child age and family income were significant predictors for child
behavioral self-regulation. Child age was positively related to behavioral self-regulation indicating that as children grow older they showed higher level of self-regulation skills. The result corresponds with the fact that self-regulation is a developmental capability (Kopp, 1982) and the reason Ponitz et al. (2009) developed HTKS task by adding more complex features to HTT task. It seems obvious that as children grow up, they naturally develop their self-regulatory skills.

Also, the family income was positively and significantly related to behavioral self-regulation. It is well documented that the family socioeconomic status is a powerful predictor for children’s overall development such as academic achievement, social competence, and emotional and behavioral adjustment (e.g., McLoyd, 1998; Sameroff & Chandler, 1975; Scott-Jones, 1984). Furthermore, family income has been found to be significant predictor for children’s behavioral self-regulation as was found in the current study (Evans & Rosenbaum, 2008; Howse et al., 2003; Tominey, 2010; Sektnan, McClelland, Acock, & Morrison, 2010). Studies have found that this influence of family income may be due to the lack of economic resources available in poor families (Lareau, 2003) and accumulation of risk factors such as higher rate of authoritarian parenting, and punitive discipline, and less parent-child quality time (Dearing, Berry, & Zaslow, 2006).

In the current study, negative correlation between family income and teacher’s autonomy-support ($r = -0.21, p<0.01$) and the length of stay in the classroom ($r = 0.13, p<0.05$) suggest that children from higher income families may be enrolled in more child-centered
classrooms for a longer period. Also, family income was highly correlated with mother’s education which may also have influenced the mother-child interaction that better promotes child’s self-regulation. These consistent findings strongly suggest that economically at-risk children are in need of more intense assistance for developing self-regulation. Considering the fact that they begin school with significant deficit in academic skills and are at greater risk for school failure (e.g., Alexander & Entwistle, 1988; Goldenberg, Reese, & Gallimore, 1992; Jordan, Huttenlocher, & Levine, 1992; St. Pierre & Layzer, 1998; Stipek & Ryan, 1997), it is critical to promote behavioral self-regulation in economically disadvantaged children.

The first hypothesis that expected negative relationship between the home chaos and the child self-regulation was not supported. Although about 24% of the variance in self-regulation was accounted for by the association with all the control variables and home chaos, the addition of home chaos only increased about .04% of variance. The relationship between home chaos and child self-regulation was negative but it was not statistically significant. This is contrary to previous findings which showed significant and negative influence of home chaos on various child outcomes (Dumas et al., 2005; Pike et al., 2006).

The result can be explained in several ways. First, it could be that while home chaos does have significant influence on child outcomes such as cognitive ability or behavioral problems as previous findings suggest, it might not have similar impact on
child’s behavioral self-regulation. The degree of chaos at home may have been too distal to strongly affect children’s behavioral attributes compared to more specific child characteristics.

Secondly, it was postulated that in order for a child to be affected by the structure, the child needs to be aware of the rules and the consequences of their actions, and thus be able to perceive the control of such rules. However, the Home CHAOS scale might not have captured the nature of the children being aware of such rules at home: rather, CHAOS scale measured how chaotic the atmosphere is in the home (e.g., “Can’t hear yourself think in our home” and “We are usually able to stay on top of things”). If more specific regularity in family routines and the presence of family rules were measured, the results might have been different.

Finally, and perhaps most plausible in terms of explanation, the sample families had quite low chaotic family environment (M= 2.1, SD= .58, ranging from 1 to 4.5). Even if the chaos in families was as effective as for other child outcomes and the CHAOS scale was valid, it would still have been difficult to capture how high chaotic home environment would affect children’s behavioral self-regulation because of the lack of variability. This is also supported by the non-significant correlation between family income and home chaos. Previous findings showed negative relationship between family SES and home chaos (poor families have higher chaotic environment), but the results of this study showed no such significant relationship (r= -.05, p>.05). Thus, the children in
this sample may not have been exposed to high chaotic home environment as much as to be affected by it.

The second hypothesis tested the influence of preschool environment on children’s behavioral self-regulation. For environmental structure, classroom structure was observed and measured with ELLCO and for autonomy-supportive environment, the teacher’s attitude toward children were measured. Test of correlation between Teacher’s Modernity Scale and ELLCO yielded one individual item that implicated appropriateness of utilizing teachers’ attitude as representing actual teaching practice.

The hierarchical regression results showed that overall preschool quality did significantly increase the variance explained in the child behavioral self-regulation but that the teacher’s autonomy-support was the only significant predictor. Some explanations could be made as to why classroom structure did not significantly predict child self-regulation. First, the preschool classroom activities may not be as structured as in higher educational settings. The preschool classrooms do have certain rules and regulations, but they may be insufficient to influence self-regulation considering the developmental stage of preschoolers who are in the process of learning what is right and wrong, what is permitted and not permitted in the social settings, and how to behave in classrooms. The studies that have found significant relationship between the classroom structure and student outcomes define structure as the teachers’ instructional behavior that are 1) presenting clear and explicit directions, 2) gives specific guidelines for
students’ activity, and 3) provides feedback on how the students can get control over the outcomes of their behavior (Jang, Reeve, & Deci, 2010). However in the preschool classroom settings, these kinds of teachers’ instructional behaviors may not be present as much as in higher educational settings.

Secondly, as was in the case of home environment, the effect of structural environment in the classroom may be too distal as to affect child self-regulation. Peisner-Feinberg et al. (2001) have found that while observed classroom practices predicted children’s academic achievement, it could not predict children’s social skills (attention, independence, and task-orientation). Instead, teacher-child relationship was associated with the children’s social skills along with cognitive skills. This finding suggests that for children’s social skills such as self-regulation, classroom structure might be less effective than the teacher-child interaction.

This links to the significant relationship found between the teacher’s autonomy-support and child self-regulation. The teacher’s autonomy-support did have a significant relationship with the child self-regulation after controlling for the child age and family income ($\beta = -.12, p = .012$). The children, whose teachers had more traditional attitude toward children and thus assumed to have less autonomy-supportive teaching behavior, had lower level of behavioral self-regulation. This finding goes with the parenting literature on the importance of parental autonomy-support on children’s self-regulation level. Thus, this finding adds to the current understanding of significance of autonomy-
supportive interaction with the children in development of child behavioral self-regulation.

In conclusion, the second hypothesis test results showed that teachers’ autonomy-support could only predict children’s behavioral self-regulation and that thus it is more important in helping children develop self-regulation. Teachers may put more effort on actual interaction with the children to give them more initiative. The classroom structure itself in preschool might not be as influential as the teacher’s interaction with the children. This is not to contradict the literature that proposes complementary effect of teacher’s autonomy-support and provision of structure on social and cognitive development (Jang et al., 2010; Reeve, 2006). Theoretically, autonomy-support and classroom structure would work together in promoting better child outcomes. However, regarding children’s behavioral self-regulation in preschool classrooms preschool classroom where provision of strong structure is not as much present as in higher educational settings, the influence of teacher’s autonomy-support could be stronger than the provision of structure.

The last hypothesis tested the interaction effect of home and preschool environment. Specifically, the goal was to examine if the preschool quality would moderate the relationship between home chaos and child behavioral self-regulation. Considering the significant correlation between family income and child behavioral self-regulation, it would be worthwhile to look for preschool quality that can buffer the family risk factor on child outcome. In other words, it would be an important finding if
preschool classroom structure and teacher’s autonomy-support could reduce the probability of having low level of behavioral self-regulation in economically disadvantaged children. Unfortunately this kind of moderation was not found in the current study. The addition of interaction terms between teachers’ autonomy-support and home chaos and classroom structure and home chaos did not significantly increase the variance explained nor were the coefficients statistically significant. It implies that the preschool environment would not change the relationship between home environment and child behavioral self-regulation. As mentioned in earlier explanations, this result could be due to non-significance of home and preschool structure. (Teacher’s autonomy-support was still significant predictor in the last regression analyses, although the interaction term with the home chaos was not.) In other words, the home and preschool environment were not influential enough to show interaction effects on child behavioral self-regulation. On the other hand, this might reflect the strong influence of family income on child outcomes. In the early stage of childhood, the influence of schooling may be weaker than the influence of experience at home.

Limitations

There were several limitations in this study. First, the participants were mostly middle-class European Americans, residing in the state of Ohio. Thus generalization of the results of this study to population may be limited.
Secondly, teacher’s autonomy-support was measured by Teacher’s Modernity Scale which measures teachers’ attitude toward children rather than their actual behavior. Although the selection of Modernity Scale was based on the evidence on link between teachers’ attitude toward children and their actual teaching practice, it is still lacking because it did not measure the exact target behavior. Direct measure of teacher’s behavior itself may have enhanced the result of this study. However, the results showed that the Modernity Scale was significantly related to child behavioral self-regulation. Thus, this result could be utilized as the stepping stone for further research on the influence of teachers’ interaction on children’s development of behavioral self-regulation.

Third, while preschool classroom environment were measured for both autonomy-support and structure, home environment was only measured for structure. Because of the lack of measure for parental autonomy-support, comparison between influence of home and preschool environment was not possible. The analysis on preschool environment showed that teachers’ autonomy-support was a better predictor of behavioral self-regulation than structure. Likewise, parental autonomy-support could have been influential, even more so than teachers’ autonomy-support.

Fourth, the children were nested in the classrooms within preschools, but this was not accounted for by appropriate statistically analysis. The biggest weakness of this study was that the sample children were not selected independently although regression
analysis requires the sample to be randomly selected. This could be further enhanced by using more advanced statistical analysis.

Fifthly, the outcome variable was only measured by single HTKS test. Although HTKS was a valid and reliable measure (Ponitz et al., 2009), having more than one measure for the outcome variable might have been helpful considering the fact that about 34% of the HTKS task score was zero. The presence of so many zero scores in behavioral self-regulation did not affect the overall results of this study. However, the reason why there were so many children who got zero score deserves further exploration. One assumption is that the children that participated in this study were about one year younger than children in the other study (Ponitz et al., 2009) which showed higher average of HTKS score (when all the zero scores in HTKS in this study were removed, the mean HTKS was still lower). High correlation between child age and behavioral self-regulation suggests that so many zero scores may be due to the sample being too young. Also, it was introduced that HTKS task was originally developed from HTT task because HTT task was too easy for children older than 5 years of age (Ponitz et al., 2009). This is to say that HTKS task may have been rather difficult for children younger than age 4. In addition, the children’s demonstration of experimental task might have been affected by other reasons such as fatigue (there were three more assessments that were conducted along with HTKS), being shy and feeling awkward toward the experimenter and the task itself, and the level of intelligence which may have affected the extent of understanding the task
rules. If there were other task measures included in the study to measure behavioral self-regulation, above assumptions could be further explored.

Finally, the study was correlational and cross-sectional. Thus the results of this study cannot be interpreted as having causal relationships.

Despite such weaknesses, there are certain strengths of this study that contribute to the literature. First, this study measured each variable from different reporters and methods. Home chaos was reported by the parents, teacher’s autonomy-support was rated by the teachers, children’s behavioral self-regulation was assessed through experimental task test, and the classroom environment was observed and rated by the trained staffs. Multi-reporters and various methods to obtain each variable are certainly methodological strengths.

Secondly, this study has complemented the lack of research on the influence of autonomy-supportive environment with clear structure on preschool children’s behavioral self-regulation. Although only one hypothesis was partially supported, the environmental influence that was proposed by Ecological Systems Theory and Self-Determination Theory were tested with young children in preschool years. The presence and importance of teacher’s autonomy-support on children’s behavioral self-regulation in such early stage of children heightens the importance of teachers’ role in young children’s school-readiness. Also, considering the non-significance of structural influence of both home and preschool the teachers’ interaction with the children becomes more and more
important. The results pave the path for exploring how teachers can help young children’s self-regulatory development.

Finally, although most of the primary analyses did not yield significant findings, the control variables did show significant relationship with the child behavioral self-regulation. Especially the relationship between family income and child behavioral self-regulation implied that the children from low income families are in more need for intense efforts to promote self-regulatory development. This adds to the previous findings suggesting significant relationship between the SES and child outcomes. Also, it further emphasizes the prevention or interventions with those children considering the fact that children from low income families are at much more risk when making transition from preschool to kindergarten (e.g., Alexander & Entwistle, 1988; Goldenberg et al., 1992; Jordan et al., 1992; St. Pierre & Layzer, 1998; Stipek & Ryan, 1997).

Future Directions

The results of this study suggest several future directions for research and practice for child behavioral self-regulation. First, direct assessments on both parents’ and teachers’ autonomy-support and more targeted observational measure of home and preschool structure may enhance and clarify the relationship between home and preschool environment and child behavioral self-regulation. This study lacked the measure of parental autonomy-support, and more valid measure for home structure and
developmentally appropriate classroom structure. More specified and detailed measure will increase the probability of finding significant relationships.

Secondly, implementing multiple age-appropriate measures on behavioral self-regulation may enhance the understanding of the results of the study. There are many task measures that can be utilized (Smith-Donald et al., 2007) along with HTKS. As was found in this study, behavioral self-regulation is a developmental ability that sensitive to the child age. Therefore selection of the multiple and age-appropriate task measures can be very important in the research findings.

Thirdly, the relationship between the teachers’ autonomy-support and child behavioral self-regulation should be further explored in order to find the optimal teacher-child interaction to promote regulatory skills in young children. The results of this study suggest that teacher’s autonomy-support was the only significant predictor for child behavioral self-regulation. However, because the teachers’ autonomy-support was measured by their attitude toward children, specific behavioral characteristics could not be found. Further findings on how teachers can promote children’s regulatory skills can be utilized in preschool teacher education and on developing preschool curriculum.

Finally, more advanced statistical analysis should be used in order to appropriately analyze nested sample data. Hierarchical Linear Modeling could account for the group-level variance and thus more accurately predict the influence of home and preschool environments. Also, longitudinal studies may be helpful to tease out the causal
relationships. More advanced statistical analyses and longitudinal study design will increase the understanding of how families and preschools can help promote children’s behavioral self-regulation.

Conclusion

This study has shown the relationship between home chaos, preschool environmental quality, and child behavioral self-regulation. The results of this study have added to the literature that teachers’ autonomy-support is a significant predictor for young children’s regulatory skills. Also, it has strengthened the importance of family income on child development and has proposed that children from economically disadvantaged families should be the focus of intervention and prevention efforts to promote behavioral self-regulation. Although expected relationship between home and preschool structural environment and child behavioral self-regulation has not been found, this study can be utilized as the stepping stone for further research on how home and preschool environment influences children’s regulatory skills with more direct and targeted measures.
References


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Appendix A. Measures
HEAD-TOES-KNEES-SHOULDERS TASK (FORM A)

Instructions: Administer the task seated or standing; the child should stand about 3 feet from you throughout the entire task. If the child produces the correct response immediately, score the item “2”. If they self-correct right away (see definition below), without prompting, score the item “1”. If they do not touch the correct part of their body at all, score the item “0”.

Definition of self-correction: Mark “self-correct” on the training and testing portion if the child makes any discernible motion toward the incorrect answer, but then changes his/her mind and makes the correct response. Pausing to think, not moving and then responding correctly does not count as a self-correction.

**PART 1 TRAINING**

<table>
<thead>
<tr>
<th>Assessor:</th>
<th>Now we’re going to play a game. The game has two parts. First, I want you to copy what I do. Touch your head. Wait for the child to put BOTH his/her hands on head.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessor:</td>
<td>Good! Now touch your toes. Wait for the child to put his/her hands on toes.</td>
</tr>
<tr>
<td>Assessor:</td>
<td>Good! Repeat the two commands with motions again, or until the child imitates you correctly.</td>
</tr>
<tr>
<td>Assessor:</td>
<td>Now we’re going to be a little silly and do the opposite of what I say. When I say to touch your head, instead of touching your head, you touch your toes. When I say to touch your toes, you touch your head. So you’re doing something different from what I say.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question 1: What do you do if I say “touch your head”?</th>
<th>Incorrect</th>
<th>Self-Correct</th>
<th>Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 (other than head)</td>
<td>1</td>
<td>2 (head)</td>
</tr>
</tbody>
</table>

If s/he hesitates or responds incorrectly, say and proceed to A2:

| Assessor: | Remember, when I say to touch your head, you touch your toes, so you are doing something different from what I say. Let’s try another one. |

If s/he responds correctly, say and proceed to A2:

| Assessor: | That’s exactly right |

<table>
<thead>
<tr>
<th>Question 2: What do you do if I say “touch your toes”?</th>
<th>Incorrect</th>
<th>Self-Correct</th>
<th>Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 (other than head)</td>
<td>1</td>
<td>2 (head)</td>
</tr>
</tbody>
</table>

You may re-explain (use EXPLANATION above) up to three times in the TRAINING (A1-A2) and PRACTICE (B1-B4) sections.

If you have already given two explanations during the TRAINING questions, then you may correct them only once more in the PRACTICE items. If the child cannot do the task after the third explanation, administer the 10 test items anyway.

**PART 1 PRACTICE**
### PART I TESTING

**Assessor:** We're going to keep playing this game and you keep doing the opposite of what I say.

*If the child does not understand the task, DO NOT explain again after testing begins.*

<table>
<thead>
<tr>
<th></th>
<th>Incorrect</th>
<th>Self-Correct</th>
<th>Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B1. Touch Your Head</strong></td>
<td>0 (other than toes)</td>
<td>1</td>
<td>2 (toes)</td>
</tr>
<tr>
<td><strong>B2. Touch Your Toes</strong></td>
<td>0 (other than head)</td>
<td>1</td>
<td>2 (head)</td>
</tr>
<tr>
<td><strong>B3. Touch Your Head</strong></td>
<td>0 (other than toes)</td>
<td>1</td>
<td>2 (toes)</td>
</tr>
<tr>
<td><strong>B4. Touch Your Toes</strong></td>
<td>0 (other than head)</td>
<td>1</td>
<td>2 (head)</td>
</tr>
</tbody>
</table>

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PART II TRAINING

NOTE: Administer Part II if child responds correctly (include self-corrects) to 5 or more items on Part I of the task, or if child is in kindergarten or beyond.

Assessor: Ok, now that you’ve got that part, we’re going to add a part. Now, you’re going to touch your shoulders and your knees. First, touch your shoulders.
Touch your shoulders; wait for the child to touch his/her shoulders with both hands.

Assessor: Now, touch your knees. 
Repeat with four alternating commands (no demo) until the child has imitated you correctly or it is clear the child does not comprehend the task.

Assessor: Ok, now we’re going to be silly again. You’re going to keep doing the opposite of what I say like before. But this time, you’re going to touch your knees and shoulders. When I say to touch your knees, you touch your shoulders, and when I say to touch your shoulders, you touch your knees.

<table>
<thead>
<tr>
<th></th>
<th>Incorrect</th>
<th>Self-Correct</th>
<th>Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1. What do you do if I say “touch your knees?”</td>
<td>0 (other than shoulders)</td>
<td>1</td>
<td>2 (shoulders)</td>
</tr>
</tbody>
</table>

If response is correct, say and proceed to D2:
Assessor: Good job! Let’s practice.

If the response is incorrect, say and proceed to D2:
Assessor: Remember, when I say to touch your knees, instead of touching your knees, you touch your shoulders. I want you to do the opposite of what I say.

PART II PRACTICE

<table>
<thead>
<tr>
<th></th>
<th>Incorrect</th>
<th>Self-Correct</th>
<th>Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>D2. Touch Your Shoulders</td>
<td>0 (other than knees)</td>
<td>1</td>
<td>2 (knees)</td>
</tr>
<tr>
<td>D3. Touch Your Knees</td>
<td>0 (other than shoulders)</td>
<td>1</td>
<td>2 (shoulders)</td>
</tr>
<tr>
<td>D4. Touch Your Shoulders</td>
<td>0 (other than knees)</td>
<td>1</td>
<td>2 (knees)</td>
</tr>
</tbody>
</table>

If the child responds incorrectly, say NOT MORE THAN ONCE.
Assessor: Remember, if I say to touch your knees, you touch your shoulders, and if I say to touch your shoulders, touch your knees. Do the opposite of what I say.

Proceed to Part II test section. Do not explain any parts of the task again.
**PART II TESTING**

Assessor: Now that you know all the parts, we're going to put them together. You're going to keep doing the opposite of what I say to do, but you won't know what I'm going to say.

Assessor: There are four things I could say. If I say to touch your head, you touch your toes. If I say to touch your toes, you touch your head. If I say to touch your knees, you touch your shoulders. If I say to touch your shoulders, you touch your knees.

Assessor: Are you ready? Let's try it.

<table>
<thead>
<tr>
<th></th>
<th>Incorrect</th>
<th>Self-Correct</th>
<th>Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.</td>
<td>Touch Your Head</td>
<td>0 (other than toes)</td>
<td>1</td>
</tr>
<tr>
<td>12.</td>
<td>Touch Your Toes</td>
<td>0 (other than head)</td>
<td>1</td>
</tr>
<tr>
<td>13.</td>
<td>Touch Your Knees</td>
<td>0 (other than shoulders)</td>
<td>1</td>
</tr>
<tr>
<td>14.</td>
<td>Touch Your Toes</td>
<td>0 (other than head)</td>
<td>1</td>
</tr>
<tr>
<td>15.</td>
<td>Touch Your Shoulders</td>
<td>0 (other than knees)</td>
<td>1</td>
</tr>
<tr>
<td>16.</td>
<td>Touch Your Head</td>
<td>0 (other than toes)</td>
<td>1</td>
</tr>
<tr>
<td>17.</td>
<td>Touch Your Knees</td>
<td>0 (other than shoulders)</td>
<td>1</td>
</tr>
<tr>
<td>18.</td>
<td>Touch Your Knees</td>
<td>0 (other than shoulders)</td>
<td>1</td>
</tr>
<tr>
<td>19.</td>
<td>Touch Your Shoulders</td>
<td>0 (other than knees)</td>
<td>1</td>
</tr>
<tr>
<td>20.</td>
<td>Touch Your Toes</td>
<td>0 (other than head)</td>
<td>1</td>
</tr>
</tbody>
</table>

After the child completes the task, say:

Assessor: Thank you for playing this game with me today.

**HTKS SCORING**

Training and Practice Scores:

- Sum of items A1-A2:
- Sum of items B1-B4:
- Score on C:
- Sum of items D1-D4:

Training and practice (sum 1-8): Self-corrects (Number of responses scored "1" in items 1-20):

Testing Final Score for Analysis:

- Part I (Sum items 1-10):
- Part II (Sum items 11-20):
- Final Score (Sum of Part I + III)
Book Use

- How many books are available in the classroom? Circle one: 0 1 2
- How many books are available in the book area? Circle one: 0 1 2
- How many books are available in the book area? Circle one: 0 1 2
- How many books are available in the book area? Circle one: 0 1 2
- How many books are available in other areas? Circle one: 0 1 2

Writing Materials

- Is there an alphabet wall? Yes, No Circle one: 0 1
- Are there word cards with names or familiar words? Yes, No Circle one: 0 1
- Are there blank paper or clipboards available for children to write? Yes, No Circle one: 0 1

Literacy Environment Checklist

- Is there a distinct area set up and functioning for writing? Yes, No Circle one: 0 1
- Are there writing tools available for children to use? Yes, No Circle one: 0 1
- Are there alphabet posters available for children to use? Yes, No Circle one: 0 1

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Classroom Observation

General Classroom Environment

1. Organization of the Classroom

- There is strong evidence of an intentional approach to the organization of the physical environment.
  - Furniture is appropriately sized for young children and well-spaced for safe movement.
  - The classroom is organized so that children are engaged in meaningful activities.

- There is some evidence of an intentional approach to the organization of the physical environment.
  - Furniture is appropriately sized for young children and well-spaced for safe movement.
  - The classroom is organized so that children are engaged in meaningful activities.

- There is minimal evidence of an intentional approach to the organization of the physical environment.
  - Furniture is not appropriately sized for young children and is not well-spaced.
  - The classroom is not organized in a way that encourages meaningful activities.

Notes:
- Chairs and tables are appropriately sized for young children.
- The physical environment is organized to support meaningful groupings of children.
- Furniture and equipment are appropriately sized for young children.
- The organization of the classroom supports meaningful activities.

2. Materials and Equipment

- There is strong evidence of an intentional approach to the organization of materials and equipment.
  - Materials are appropriately sized for young children.
  - Equipment is organized so that children can access and use it independently.

- There is some evidence of an intentional approach to the organization of materials and equipment.
  - Materials are appropriately sized for young children.
  - Equipment is organized so that children can access and use it independently.

- There is minimal evidence of an intentional approach to the organization of materials and equipment.
  - Materials are not appropriately sized for young children.
  - Equipment is not organized in a way that supports meaningful use.

Notes:
- Materials and equipment are appropriately sized for young children.
- The organization of materials and equipment supports meaningful activities.

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### General Classroom Environment

#### 3. Presence and Use of Technology

<table>
<thead>
<tr>
<th></th>
<th>Example</th>
<th>Basic</th>
<th>Deficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note: Technology includes electronic devices, software, websites, and procedures</td>
<td>There is strong evidence that technology is available and used regularly by children in the classroom.</td>
<td>There is some evidence that technology is available and used regularly by children in the classroom.</td>
<td>There is no evidence that technology is available and used regularly by children in the classroom.</td>
</tr>
<tr>
<td>Evidence: Technology is evidence on the classroom and observations of children using technology</td>
<td>Computer use often includes technology use for entertainment and social interaction. Technology is used for a variety of purposes including entertainment, learning, and creative expression.</td>
<td>Computer use includes occasional use of technology for entertainment and social interaction. Technology is used for a variety of purposes including entertainment, learning, and creative expression.</td>
<td>Technology use is minimal and occasional. Technology is used for entertainment purposes only.</td>
</tr>
<tr>
<td>Notes:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### General Classroom Environment

<table>
<thead>
<tr>
<th></th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
<th>Deficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Classroom Management Strategies</td>
<td></td>
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<tr>
<td>Evidence: Observed interactions between teachers and children; roles and responsibilities of the classroom; and the overall environment; and their relationship</td>
<td></td>
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<tr>
<td>- Teachers often appear to have individualized, separate roles and responsibilities for each child. The teacher engages in separate, individual interactions with each child.</td>
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<tr>
<td>Notes:</td>
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<tr>
<td>- There is some evidence that classroom management strategies exist and are utilized to ensure that children's input and encourage their proposed engagement.</td>
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<tr>
<td>- Children appear to be engaged and involved in their individual activities.</td>
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<tr>
<td>- Children appear to be engaged in separate, individual activities.</td>
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</tr>
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<td>- Children appear to be engaged in separate, individual activities.</td>
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<tr>
<td>- There is minimal evidence that classroom management strategies exist and are utilized to ensure that children's input and encourage their proposed engagement.</td>
<td></td>
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</tr>
</tbody>
</table>

### Classroom Observation

<table>
<thead>
<tr>
<th>6. Classroom Climate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evidence: Classroom environment (b) factors and children's autonomy and responsibilities for classroom responsibilities</td>
</tr>
<tr>
<td>- Teachers encourage children to be responsible for classroom responsibilities.</td>
</tr>
<tr>
<td>- Teachers encourage children to be responsible for classroom responsibilities.</td>
</tr>
<tr>
<td>Notes:</td>
</tr>
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</tr>
<tr>
<td>- Teachers encourage children to be responsible for classroom responsibilities.</td>
</tr>
</tbody>
</table>

## Language, Literacy, and Curriculum

### 2. Oral Language Development

**Notes:**
- There is strong evidence that books are used systematically to support children's language learning and development.
- There is some evidence that books are used systematically to support children's language learning and development.
- There is minimal evidence that books are used systematically to support children's language learning and development.

### 3. Writing Language Development

**Notes:**
- There is strong evidence that books are used systematically to support children's language learning and development.
- There is strong evidence that books are used systematically to support children's language learning and development.
- There is strong evidence that books are used systematically to support children's language learning and development.

### 4. Reading Language Development

**Notes:**
- There is strong evidence that books are used systematically to support children's language learning and development.
- There is strong evidence that books are used systematically to support children's language learning and development.
- There is strong evidence that books are used systematically to support children's language learning and development.

### Classroom Observation

**Notes:**
- There is strong evidence that books are used systematically to support children's language learning and development.
- There is strong evidence that books are used systematically to support children's language learning and development.
- There is strong evidence that books are used systematically to support children's language learning and development.

### 5. Phonemic Awareness

**Notes:**
- There is strong evidence that books are used systematically to support children's language learning and development.
- There is strong evidence that books are used systematically to support children's language learning and development.
- There is strong evidence that books are used systematically to support children's language learning and development.

### 6. Vocabulary Development

**Notes:**
- There is strong evidence that books are used systematically to support children's language learning and development.
- There is strong evidence that books are used systematically to support children's language learning and development.
- There is strong evidence that books are used systematically to support children's language learning and development.

### 7. Grammar Development

**Notes:**
- There is strong evidence that books are used systematically to support children's language learning and development.
- There is strong evidence that books are used systematically to support children's language learning and development.
- There is strong evidence that books are used systematically to support children's language learning and development.

### 8. Print Awareness

**Notes:**
- There is strong evidence that books are used systematically to support children's language learning and development.
- There is strong evidence that books are used systematically to support children's language learning and development.
- There is strong evidence that books are used systematically to support children's language learning and development.
13. Facilitating Home Support for Literacy

**Evidence:**
- Demonstrated benefits to children and other similar home-based interventions
- Support for children’s language development

**Notes:**
- Supportive environment in home and school can help children develop language and literacy skills
- Interaction between home and school is crucial for teaching and learning
- Parent involvement in children's learning

14. Approaches to Assessment

**Evidence:**
- Observation of early literacy for individual assessment
- Observation of early literacy for group assessment

**Notes:**
- Observations of early literacy need to be individualized
- Observations of early literacy need to be structured
OHIO SURVEY OF EARLY CHILDHOOD II

Parent Questionnaire

Thank you for participating in the Step Up To Quality Research Project. The following questions help us learn more about the children, families, and communities that participate in Ohio's licensed childcare programs. The most important information comes from parents like you. We are asking you to take some time to answer our questions about you and your pre-school child.

You can skip any questions that make you uncomfortable, and simply move on to the next question. Further, you are not required to participate, and can drop out at any point in time. We really care about what you have to say, and we hope you will give us your opinion. None of your answers will be linked to your name or your child’s name. Your answers will be kept strictly confidential.

If you would like to talk in more depth about any difficult topics with a professional, please contact us and we can provide you a referral for counseling services.

Thank you in advance for your time!

Study Identification

69
### Demographics
Please provide us with information about your child, family, and your childcare arrangements.

1. What is your preschool child’s birth date?  
   - Month: [ ]  
   - Day: [ ]  
   - Year: 20  

2. What is your preschool child’s gender?  
   - [ ] Female  
   - [ ] Male

3. Is your preschool child of Hispanic/Latino origin?  
   - [ ] Yes  
   - [ ] No

4. What category below best describes your preschool child’s race?  
   - [ ] American Indian or Alaska Native  
   - [ ] White/European-American  
   - [ ] Multi-racial  
   - [ ] Asian/ Native Hawaiian or Pacific Islander  
   - [ ] Black/African-American

5. Does your preschool child have an individualized Education Plan (IEP) or individualized Family Service Plan (IFSP) for any challenge that influences his/her ability to do school work in a regular classroom?  
   - [ ] Yes  
   - [ ] No  
   - [ ] Don’t know

6. Has your preschool child been screened and identified as having any of the following? *(Please mark ALL that apply)*
   - [ ] Developmental Disability  
   - [ ] Physical Disability  
   - [ ] Pervasive Developmental Disorder - PDD  
   - [ ] Hearing Impairment  
   - [ ] Speech Impairment  
   - [ ] Home Environment/Problems at Home  
   - [ ] Autism  
   - [ ] Visual Impairment  
   - [ ] Emotional Problem  
   - [ ] Behavioral Problem  
   - [ ] Learning Disability  
   - [ ] Other *(please describe)*  

7. Has your preschool child been referred to any specific services for additional support?  
   - [ ] Yes *(please describe)*  
   - [ ] No

8. What is your relationship to this child? *(Please mark ONLY one.)*
   - [ ] Mother  
   - [ ] Father  
   - [ ] Grandmother/Grandfather  
   - [ ] Aunt/Uncle  
   - [ ] Legal Guardian

9. How many of the following individuals are currently living in your household?  
   - a. Other children under 18 years of age  
   - b. Family members  
   - c. Non-family adults

10. What is your primary language used?  
    - a. You at home  
    - b. Your child at home

11. What is your gender?  
    - [ ] Female  
    - [ ] Male

12. Are you of Hispanic/Latino origin?  
    - [ ] Yes  
    - [ ] No

13. What category below describes your race?  
    - [ ] American Indian or Alaska Native  
    - [ ] White/European-American  
    - [ ] Multi-racial  
    - [ ] Asian/ Native Hawaiian or Pacific Islander  
    - [ ] Black/African-American
14. What is your marital status? (Please select the ONE that most closely describes you.)
- Married/Union
- Co-habiting/Living together
- Separated
- Divorced
- Single/Never married
- Other (Please specify) ____________

15. What is the highest level of your education? (Please mark ONLY one.)
- Less than high school, no GE
- High school diploma or GED
- Associate of Arts Degree (A.A.)
- Bachelor's Degree (B.A./B.S.)
- Graduate degree (M.A./M.S.)
- Graduate or professional degree beyond a master's (PhD, M.D., J.D.)

16. What is your family's income, counting all jobs, before taxes?
- $5,000 or less
- $5,001 to $10,000
- $10,001 to $15,000
- $15,001 to $20,000
- $20,001 to $25,000
- $25,001 to $30,000
- $30,001 to $35,000
- $35,001 to $40,000
- $40,001 to $50,000
- $50,001 to $75,000
- $75,001 to $100,000
- $100,001 to $200,000

17. Do you have a spouse/partner living in the home with you and your preschool child?
- Yes
- No (if "no", skip question 18 below.)

18. What is your spouse/partner's highest level of education? (Please mark ONLY one.)
- Less than high school, no GE
- High school diploma or GED
- Associate of Arts Degree (A.A.)
- Bachelor's Degree (B.A./B.S.)
- Graduate degree (M.A./M.S.)
- Graduate or professional degree beyond a master's (PhD, M.D., J.D.)

19. When did your child begin attending the current program? Year ________ Month ________

20. When did your child join his/her current classroom? Year ________ Month ________

21. How regularly does your child attend his/her current classroom?
- Daily
- 2-4 Days per week
- 1 Day per week
- Whenever convenient to take him/her

22. Per week, how many hours does your child attend his/her current classroom? ________ Hours

23. Per week, how many days a week does your child attend his/her current classroom? ________ Days

24. Prior to the current program, has your child been cared for in a:
   a. Licensed early child care and education program: Yes ___ No ___ Number of months ________
   b. Care by relative (biological parent, grandparent, etc.): Yes ___ No ___ Number of months ________
   c. Care by non-relative (neighbor, friend, etc.): Yes ___ No ___ Number of months ________
   d. Other (please describe): Yes ___ No ___ Number of months ________
Child's Development

For the following questions, please read the question and mark whether each behavior occurs most of the time, some times, rarely or never. If you are concerned about the behavior, check yes. If you are not concerned about the behavior, check no.

<table>
<thead>
<tr>
<th>Question</th>
<th>Most of the time</th>
<th>Some times</th>
<th>Rarely or never</th>
<th>AND</th>
<th>This is a concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>25. Does your child look at you when you talk to him/her?</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>26. Does your child cling to you more than you expect?</td>
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<tr>
<td>27. Does your child talk and/or play with adults she/he knows well?</td>
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<tr>
<td>28. When upset, can your child calm down within 15 minutes?</td>
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<td>29. Does your child like to be hugged or cuddled?</td>
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<tr>
<td>30. Does your child seem too friendly with strangers?</td>
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<tr>
<td>31. Can your child settle himself/herself down after periods of exciting activity?</td>
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<tr>
<td>32. Does your child cry, scream, or have tantrums for long periods of time?</td>
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<tr>
<td>33. Is your child interested in things around her/him, such as people, toys, and foods?</td>
<td></td>
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<tr>
<td>34. Does your child have eating problems, such as stuffing foods, vomiting, eating nonfood items, or another problem?</td>
<td></td>
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<tr>
<td>35. Do you and your child enjoy mealtimes together?</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>36. Does your child do what you ask her/him to do?</td>
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<tr>
<td>37. Does your child seem happy?</td>
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<tr>
<td>38. Does your child sleep at least 8 hours in a 24-hour period?</td>
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<tr>
<td>39. Does your child seem more active than other children his/her age?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40. Does your child use words to tell you what he/she wants or needs?</td>
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<tr>
<td>41. Can your child stay with activities he/she enjoys for at least 10 minutes (not including watching televisions)?</td>
<td></td>
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</tr>
<tr>
<td>42. Does your child use words to describe her/his feelings and the feelings of others, such as, “I’m happy,” “I don’t like that,” or “She’s sad”?</td>
<td></td>
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<tr>
<td>43. Can your child move from one activity to the next with little difficulty, such as from playtime to mealtime?</td>
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<tr>
<td>44. Does your child explore new places, such as a park or a friend’s home?</td>
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<tr>
<td>45. Does your child do things over and over and can’t seem to stop? Examples are rocking, hand flapping, spinning, or something else.</td>
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<tr>
<td>46. Does your child hurt himself/herself on purpose?</td>
<td></td>
<td></td>
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<tr>
<td>47. Does your child follow rules (at home, at child care)?</td>
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<tr>
<td>48. Does your child destroy or damage things on purpose?</td>
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<tr>
<td>49. Does your child stay away from dangerous things, such as fire and moving cars?</td>
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</tr>
<tr>
<td>50. Does your child show concern for other people’s feelings? For example, does she/he look sad when someone is hurt?</td>
<td></td>
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<tr>
<td>51. Do other children like to play with your child?</td>
<td></td>
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<tr>
<td>52. Does your child like to play with other children?</td>
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<tr>
<td>53. Does your child try to hurt other children, adults, or animals (e.g., kicking or biting)?</td>
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</tr>
<tr>
<td>54. Does your child show an interest or knowledge of adult sexual language and activity?</td>
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<td></td>
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<tr>
<td>55. Has anyone expressed concerns about your child’s behaviors?</td>
<td></td>
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</tr>
</tbody>
</table>

For children ages 42 through 53 months

<table>
<thead>
<tr>
<th>Question</th>
<th>Most of the time</th>
<th>Some times</th>
<th>Rarely or never</th>
<th>AND</th>
<th>This is a concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>56. Does your child stay dry during the day?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>57. Can your child name a friend?</td>
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<td></td>
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</tr>
</tbody>
</table>

For children ages 54 through 65 months

<table>
<thead>
<tr>
<th>Question</th>
<th>Most of the time</th>
<th>Some times</th>
<th>Rarely or never</th>
<th>AND</th>
<th>This is a concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>58. Does your child go to the bathroom by herself/himself? (Reminders and help with wiping are okay.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>59. Does your child take turns and share when playing with other children?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Home Environment
Families all have different rules and routines. The next set of questions asks about your family's lifestyle and rules. Please check the answer that best describes YOUR family.

60. About how often do you read stories to your child?
☐ Never ☐ Several times a year ☐ Several times a month
☐ Once a week ☐ At least 3 times a week ☐ Everyday

61. About how many children's books does your child have?
☐ 10 or more books ☐ 3 to 9 books ☐ 1 or 2 books ☐ None

62. About how many magazines does your family get regularly?
☐ None ☐ One ☐ Two ☐ Three ☐ Four or more

63. Does your child have the use of a CD player, tape deck, or tape recorder, or record player at home and at least 5 children's records or tapes? (May be shared with sister or brother.)
☐ Yes ☐ No

64. Please check which of the following you (or someone else) have helped your child with at home:
   a. Do you or have you (or someone else) help with numbers? ☐ Yes ☐ No
   b. Do you or have you (or someone else) help with the alphabet? ☐ Yes ☐ No
   c. Do you or have you (or someone else) help with colors? ☐ Yes ☐ No
   d. Do you or have you (or someone else) help with shapes and sizes? ☐ Yes ☐ No

65. How much choice is your child allowed in deciding what foods (he/she) eats at meal times?
☐ A great deal of choice ☐ Some choice ☐ Little choice ☐ No choice

66. Most children get angry at their parents from time to time. If your child got so angry that (he/she) hit you, what would you do?
   a. Hit him/her back ☐ Yes ☐ No
   b. Send him/her to his/her room ☐ Yes ☐ No
   c. Spank him/her ☐ Yes ☐ No
   d. Talk to him/her ☐ Yes ☐ No
   e. Ignore it ☐ Yes ☐ No
   f. Give him/her household chore ☐ Yes ☐ No
   g. Take away his/her allowance/other privileges ☐ Yes ☐ No
   h. Hold child's hands until he/she was calm ☐ Yes ☐ No
   i. Put child in a short "time out" ☐ Yes ☐ No
   j. Other (Please specify) ____________________ ☐ Yes ☐ No

67. Sometimes kids mind pretty well and sometimes they don't. About how many times, if any, have you had to spank your child in the past week? ________ time(s)

68. How often does a family member get a chance to take your child on any kind of outing (like shopping, to the park, a picnic, drive-in, and so on)?
☐ A few times a year or less ☐ About once a month ☐ About two or three times a month
☐ Several times a week ☐ About once a day
69. How often has a family member taken or arranged to take your child to any type of museum (children's, scientific, art, historical, etc.) within the past year?

☐ Never  ☐ Once or twice  ☐ Several times  ☐ About once a month  ☐ About once a week or more often

70. Think about a typical weekday for your family.

a. On average, how many hours, either in your home or elsewhere, does your child spend watching television? ______ hour(s)

b. On average, how many hours, either in your home or elsewhere, does your child play video or computer games? ______ hour(s)

71. Think about a typical weekend day (Saturday or Sunday) for your family.

a. On average, how many hours, either in your home or elsewhere, does your child spend watching television? ______ hour(s)

b. On average, how many hours, either in your home or elsewhere, does your child play video or computer games? ______ hour(s)

72. Does your child ever see [his/her] father, or someone who is considered as a father-figure?

☐ Yes  ☐ No (If no, skip to 75)

73. Is this man [his/her] biological father, stepfather, or a father-figure?

☐ Biological father  ☐ Stepfather  ☐ Father-figure

74. Does your child see [his/her] father, stepfather, or a father-figure on a daily basis?

☐ Yes  ☐ No

75. With the next set of items, we ask you about some things that happen in most homes. Please circle the number that best represents your response to each statement (where 1 = 'Definitely untrue' and 5 = 'Definitely true').

<table>
<thead>
<tr>
<th>Statement</th>
<th>Definitely Untrue</th>
<th>Somewhat Untrue</th>
<th>Not Really True</th>
<th>Somewhat True</th>
<th>Definitely True</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. The children have a regular bedtime routine (e.g., same time for bed each night, a bath before bed, reading a story in bed, etc.).</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. You can't hear yourself think in our home.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. It's a real zoo in our home.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. We are usually able to stay on top of things.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. There is usually a television turned on somewhere in our home.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. The atmosphere in our house is calm.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

76. With the next set of items, we ask you about your feelings about parenting. Please circle the number that best represents your response to each statement (where 1 = 'Strongly agree' and 4 = 'Strongly disagree').

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th></th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Being a parent is harder than I thought it would be.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. I feel trapped by my responsibilities as a parent.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. I find that raising my child is much more work than pleasure.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. I often feel tired, worn out, or exhausted from raising a family.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. I find myself giving up more of my life to meet my child's needs than I ever expected.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
77. The following questions are about ways you might have felt or behaved. Please check how often you have felt this way during the past week.

<table>
<thead>
<tr>
<th>Rarely or none of the time (less than 1 day)</th>
<th>Some or a little of the time (1-2 days)</th>
<th>Occasionally or a moderate amount of time (3-4 days)</th>
<th>Most or all of the time (5-7 days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. You did not feel like eating; your appetite was poor.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b. You felt that you could not shake off the blues, even with help from my family or friends.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c. You had trouble keeping your mind on what you were doing.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>d. You felt depressed.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>e. You felt that everything you did was an effort.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>f. Your sleep was restless.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>g. You felt lonely.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>h. You felt sad.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>i. You could not get “going”.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Thank you for participating in this study. Please return this questionnaire to OSU in the provided envelope. If you have any questions, comments, or concerns, please contact:

Dr. Cynthia Buettner, Principal Investigator
Aaron Robertson, Project Manager
Ohio State University
College of Education and Human Ecology
135 Campbell Hall
Columbus, Ohio 43210

(614) 247-0061
### YOUR ATTITUDES TOWARDS TEACHING AS A CAREER

The next questions ask you about your feelings of teaching as a career. Please circle the number that best represents your response to each statement (where 1 = 'Strongly Disagree' and 5 = 'Strongly Agree').

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>I feel that I experience a lot of autonomy in my work as a teacher</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>b</td>
<td>I feel that my job is challenging</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>c</td>
<td>I feel that I have job security in my current position</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>d</td>
<td>I feel that my job involves personal initiative</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>e</td>
<td>I feel that my salary is more than adequate</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>f</td>
<td>I feel I receive appropriate recognition for my efforts and hard work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>g</td>
<td>I feel that I have freedom to make important decisions about my work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>h</td>
<td>I feel a lot of uncertainty about my career as a teacher</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>i</td>
<td>I feel that my workload as a teacher is too heavy</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>j</td>
<td>I feel that my job includes too many non-teaching tasks</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>k</td>
<td>I experience verbal abuse from parents</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>l</td>
<td>I experience a lack of authority in my job</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>m</td>
<td>I feel that I experience too many demands from too many people</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>n</td>
<td>I feel stress associated with criticism of teachers by the media</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Thank you for your work with young children and for participating in this study. Please contact us at (614) 292-1286 with any questions or comments.
Appendix B. Tables
Table 1. Sample Demographics

<table>
<thead>
<tr>
<th>Children (N=380)</th>
<th></th>
<th>Respondents (N= 380)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td>Relationship to Child</td>
</tr>
<tr>
<td>Male 199(52.4%)</td>
<td></td>
<td>Mother 336(88.4%)</td>
</tr>
<tr>
<td>Female 179(27.1%)</td>
<td></td>
<td>Father 35(9.2%)</td>
</tr>
<tr>
<td>Missing 2(0.5%)</td>
<td></td>
<td>Grandmother/Grandfather 7 (1.8%)</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>Legal Guardian 1 (0.3%)</td>
</tr>
<tr>
<td>Mean= 55.21</td>
<td></td>
<td>Missing 1 (0.3%)</td>
</tr>
<tr>
<td>Range= 35 – 70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD= 6.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length of Stay in Classroom (months)</td>
<td></td>
<td>Mother’s Education</td>
</tr>
<tr>
<td>Mean= 8.24</td>
<td></td>
<td>Less than high school/no GED 5(1.3%)</td>
</tr>
<tr>
<td>Range= 0.66 – 29.60</td>
<td></td>
<td>High school diploma or GED 53(13.9%)</td>
</tr>
<tr>
<td>SD= 5.62</td>
<td></td>
<td>Some college, but no degree 96(25.3%)</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td>Associate of arts (A.A.) degree 30(7.9%)</td>
</tr>
<tr>
<td>European American 252(66.3%)</td>
<td></td>
<td>Bachelors degree (B.A. or B.S.) 94(24.7%)</td>
</tr>
<tr>
<td>African American 73(19.2%)</td>
<td></td>
<td>Graduate school, but no degree 8(2.1%)</td>
</tr>
<tr>
<td>Multi-Racial 42 (11.1%)</td>
<td></td>
<td>Graduate Degree (M.A., M.S.) 55(14.5%)</td>
</tr>
<tr>
<td>Asian/Native Hawaiian or Pacific Islander 7(1.8%)</td>
<td></td>
<td>Graduate or Professional Degree beyond Master’s (Ph.D., M.D., J.D.) 36(9.5%)</td>
</tr>
<tr>
<td>American Indian or Alaska Native 1(0.3%)</td>
<td></td>
<td>Missing 3 (0.8%)</td>
</tr>
<tr>
<td>Missing 5(1.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual Family Income</td>
<td></td>
<td>Race</td>
</tr>
<tr>
<td>$5,000 or less</td>
<td></td>
<td>European American</td>
</tr>
<tr>
<td>27(7.1%)</td>
<td></td>
<td>279(73.4%)</td>
</tr>
<tr>
<td>$10,001– $15,000</td>
<td></td>
<td>African American 74(19.5%)</td>
</tr>
<tr>
<td>10(2.6%)</td>
<td></td>
<td>Multi-Racial 12(3.2%)</td>
</tr>
<tr>
<td>$15,001– $20,000</td>
<td></td>
<td>Asian/Native Hawaiian or Pacific Islander 8(2.1%)</td>
</tr>
<tr>
<td>7(1.8%)</td>
<td></td>
<td>American Indian or Alaska Native 1(0.3%)</td>
</tr>
<tr>
<td>$20,001– $25,000</td>
<td></td>
<td>Missing 6(1.6%)</td>
</tr>
<tr>
<td>30(7.9%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$25,001– $30,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21(5.5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$30,001– $35,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12(3.2%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$35,001– $40,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10(2.6%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$40,001– $50,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23(6.1%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$50,001– $75,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51(13.4%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$75,001– $100,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55(14.5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$100,001–$200,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>89(23.4%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$200,000 or more</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17(4.5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 (4.7%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2. *Descriptive Statistics*

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home CHAOS</td>
<td>1.00</td>
<td>4.50</td>
<td>2.09</td>
<td>.58</td>
<td>.43</td>
<td>.27</td>
</tr>
<tr>
<td>Teacher’s Autonomy-support</td>
<td>1.19</td>
<td>3.68</td>
<td>2.52</td>
<td>.46</td>
<td>-.30</td>
<td>.13</td>
</tr>
<tr>
<td>Class Structure</td>
<td>2.17</td>
<td>5.00</td>
<td>3.78</td>
<td>.64</td>
<td>-.65</td>
<td>.13</td>
</tr>
<tr>
<td>Child Behavioral Self-Regulation</td>
<td>0.00</td>
<td>40.00</td>
<td>14.17</td>
<td>14.54</td>
<td>.41</td>
<td>-.15</td>
</tr>
</tbody>
</table>
Table 3.

Pearson Correlations Among Child, Family, Preschool characteristics, and Child Behavioral Self-Regulation

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Child Age</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Child Gender</td>
<td>.009</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Family Income</td>
<td>.16**</td>
<td>.08</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4. Mother’s Education</td>
<td>.09</td>
<td>-.02</td>
<td>.64**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>5. Home Chaos</td>
<td>-.01</td>
<td>-.01</td>
<td>-.05</td>
<td>-.11*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Teacher Autonomy-support</td>
<td>-.01</td>
<td>-.06</td>
<td>-.21**</td>
<td>-.15**</td>
<td>.05</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Classroom Structure</td>
<td>-.05</td>
<td>.10</td>
<td>.11*</td>
<td>.15*</td>
<td>-.05</td>
<td>-.08</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Length of stay in classroom</td>
<td>.17**</td>
<td>.01</td>
<td>.13*</td>
<td>.14*</td>
<td>-.07</td>
<td>-.24**</td>
<td>.07</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>9. Child Self-Regulation</td>
<td>.42**</td>
<td>.09</td>
<td>.31**</td>
<td>.26**</td>
<td>-.08</td>
<td>-.14**</td>
<td>.04</td>
<td>.16**</td>
<td>1</td>
</tr>
</tbody>
</table>

Note. Gender is coded as 0=boy, 1=girl. *p<.05; **p<.01

Table 4.

Hierarchical Regression Results

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
<th>Step 4</th>
<th>Step 5</th>
<th>Step 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis 1</td>
<td>.24</td>
<td>.24</td>
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Table 5.

*Pearson Correlations between Teacher’s Autonomy-support and Class Structure*

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(1) – (6) : Individual Items in Class Structure; **p<.01
### Table 6.

*Hierarchical Regression Coefficients*

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