

**SYSTEMATIC CLASSROOM OBSERVATION OF THE QUALITY  
OF TEACHER BEHAVIORS AND STUDENT ENGAGEMENT  
IN ETHNICALLY DIVERSE PRE-KINDERGARTEN  
THROUGH SECOND-GRADE CLASSROOMS**

A Dissertation

by

BEVERLY LYNN ALFORD

Submitted to the Office of Graduate Studies of  
Texas A&M University  
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 2011

Major Subject: Curriculum and Instruction

Systematic Classroom Observation of the Quality of Teacher Behaviors and Student  
Engagement in Ethnically Diverse Pre-Kindergarten Through Second-Grade Classrooms

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Approved by:

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May 2011

Major Subject: Curriculum and Instruction

**ABSTRACT**

Systematic Classroom Observation of the Quality of Teacher Behaviors and Student Engagement in Ethnically Diverse Pre-Kindergarten Through Second-Grade Classrooms. (May 2011)

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M.Ed., University of Houston

Chair of Advisory Committee: Dr. Hersh Waxman

The purpose of the study was to observe pre-kindergarten through second-grade public school classrooms, specifically noting child-centered and teacher-directed pedagogical approaches, by simultaneously examining: student behavior and activity structure, teacher instructional orientation and rationale, and overall classroom environment. The quantitative study built upon the work of Pianta, examining classroom instruction and its effect on student engagement and educational quality; however, unlike previous studies, researchers in the current study observed the nature of activity structure and various student demographic variables. Additionally, dissimilar to prior classroom observation studies, which typically included an overwhelming percentage of White students, Hispanic and African American students comprised a large percentage of the sample. And because policy-makers have called for more research-based information on classroom instruction in the early childhood setting, an additional

contribution is the use of systematic observation and analysis of young learners' experiences within their classrooms.

The multi-faceted approach to classroom observation yielded one critical result: Little to no variation existed in the activities in which young children were engaged in their classrooms, nor in the instructional practices utilized by their early childhood teachers. Accordingly, the study revealed few differences in student behavior and teacher practices by student sex, student ethnicity, grade-level, English language proficiency, and/or economic status. Instruction in these classrooms was almost entirely standardized; however, three statistically significant findings showed that: (a) students taught by teachers rated as having a higher developmentally appropriate instructional practices (DAIP) score were more likely to be on-task and less likely to be off-task; (b) students taught by teachers with a higher DAIP score were significantly more likely to be working kinesthetically, answering teacher-posed questions, and freely exploring; and (c) students taught by teachers with a lower DAIP score were significantly more likely to be distracted and/or not engaging in activity. Study findings were significant, as, despite research showing the unfavorable effects that highly teacher-centered, scripted classrooms have on young students' engagement and subsequent learning outcomes, students continue to be taught in the same way—one in which reaching a designated test score appears to be the singular, ultimate objective.

## **DEDICATION**

To Aidan, Grant, and Paige:

Watching you grow, learn, and discover inspires me.

May the world forever be your playground.

## ACKNOWLEDGEMENTS

First and foremost, I would like to express my unspeakable gratitude to my committee chair, Dr. Hersh Waxman. Your expertise, patience, and faith in me have been invaluable. Thank you for convincing me to stick around, even when I questioned the rationale in doing so. It has been an honor working with and learning from you, and I look forward to future collaboration.

Thank you to Drs. Tracy Collins, Yolanda Padrón, and Robin Rackley. You have given so generously of your time, guidance, and support throughout the course of this research. I am forever grateful.

Thank you to my colleagues at the State of Texas Education Research Center (ERC) at Texas A&M University. Your ever-present collegiality has been instrumental in keeping me grounded throughout this journey. And thank you to the staff in the Department of Teaching, Learning, & Culture (TLAC) at Texas A&M University for making my (second!) time in Aggieland such a meaningful experience. Gig'em.

Kayla and Danielle, what can I say? In countless airports and on a myriad of highways; in God knows how many cities, states, and countries; during a seemingly endless number of all-nighters and up against last-minute deadlines; amidst all of the laughs and tears, you kept me sane. *Thank you* does not suffice. I love you, girls.

Finally, thank you to Mom, Dad and Ruth Ann, Elizabeth and Ty, Christine and Colin, and Laura for your encouragement, unflappable support, and uncanny ability to help me see the forest for the trees. My cup runneth over.

**NOMENCLATURE**

|         |  |
|---------|--|
| CLASS   | Classroom Assessment Scoring System                      |
| COM     | Classroom Observation Measure                            |
| COS-1   | Classroom Observation System for First-Grade             |
| COS-K   | Classroom Observation System for Kindergarten            |
| CPI     | Classroom Practices Inventory                            |
| DAP     | Developmentally Appropriate Practice                     |
| ECLS    | Early Childhood Longitudinal Study                       |
| ECCOM   | Early Childhood Classroom Observation Measure            |
| ECE     | Early Childhood Education                                |
| ECERS-R | Early Childhood Environment Rating Scale – Revised       |
| ECERS-E | Early Childhood Environment Rating Scale – Extension     |
| ELL     | English Language Learner                                 |
| ITERS   | Infant/Toddler Environment Rating Scale                  |
| LEP     | Limited English Proficient                               |
| NAEYC   | National Association for the Education of Young Children |
| NICHD   | National Institute of Child Health and Human Development |
| Pre-K   | Pre-Kindergarten   |
| SWEEPS  | State-Wide Early Education Programs Study                |
| T-CRS   | Teacher-Child Rating Scale                               |



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## CHAPTER I

### INTRODUCTION

Research has found that high-quality early childhood programs facilitate better socio-emotional and cognitive outcomes for students, thereby contributing to greater success—both in school and later in life (Burchinal, et al., 2000; NIEER, 2008). This heightened awareness of the importance of quality early childhood education (ECE) has fostered a national conversation regarding pedagogical practices aimed at young children (Chien, et al., 2010; Hirsh-Pasek, Golinkoff, Berk, & Singer, 2009; NAEYC, 2009; Pianta, 2003). Research in pre-kindergarten (pre-k) and early elementary classrooms has found that overall instruction has been inadequate (Pianta, 2003; Stipek, 2004; Stuhlman & Pianta, 2009). For example, Pianta (2003) found “exceptional variability” in the quality of young children’s educational experiences, with the typical child receiving mostly whole-group instruction. Stipek (2004) noted that in classes with a large percentage of minority students, teachers engaged in more didactic teaching and less constructivist instructional practices. Similarly, Stuhlman and Pianta (2009) and Loeb and colleagues (2004) found that young children most at-risk for difficulties resultant of poor early childhood environments and/or various familial demographic factors were least likely to be enrolled in programs with adequate, high-quality instruction.

---

This dissertation follows the style of *American Educational Research Journal*.

The National Association for the Education of Young Children (NAEYC)—the largest and most renowned early childhood advocacy and professional organization in the United States—has taken a deliberate and public stance on its belief regarding the implementation of child-centered philosophies and instructional approaches within the ECE classroom; specifically, NAEYC initiated the now familiar and widespread language of *developmentally appropriate practice (DAP)* (NAEYC, 2009). The organization asserted that program and school quality are directly related to later academic success, thereby highlighting the importance of DAP strategies—instructional approaches built around the learner, rather than the teacher. Moreover, NAEYC cited research that upheld specific predictors of future cognitive outcomes, including: skills related to language and literacy, mathematics, social and emotional competence, and cognitive functioning. DAP, according to NAEYC, leads to more positive outcomes and an eventual minimization of the so-called *achievement gap* (NAEYC, 2009).

The aim of the present study is to observe pre-kindergarten through second-grade public school classrooms, specifically noting activity structure—the use of whole-group, small group, or individual instruction (Kelly & Turner, 2009)—by concurrently examining student behavior and activity types, as well as teacher instructional orientation. Additionally, the overall classroom environment was simultaneously observed and rated. The problem is evident: Notwithstanding research showing the unfavorable effects that highly teacher-centered classrooms have on young students' engagement and subsequent learning outcomes, didactic and ostensibly scripted teaching approaches continue to be standard in many early childhood environments (Alliance for

Childhood, 2009; File & Gullo, 2002; LoCasale-Crouch, et al., 2007; Ranz-Smith, 2007; Vartuli, 1999).

### **Child-Centered Versus Teacher-Directed Instruction**

Researchers frequently contrast child-centered, constructivist approaches to teaching with alternate didactic forms of education, whereby children passively receive direct instruction from adults (National Research Council, 2001). In an age of high-stakes testing and accountability, the distinction between direct instruction and those practices that acknowledge children as active participants in their own learning, is vast (National Research Council, 2001). The No Child Left Behind Act, reauthorized in 2001, pushed a national initiative that *all children be able to read by third-grade* (White House, 2003). This directive has translated to a stronger focus on cognition and has triggered more decisions based on children's test scores (Zigler, Singer, & Bishop-Josef, 2005). Moreover, the reauthorization of Head Start in 2003 removed language pertaining to social and emotional development, replacing such skills with the word, *literacy* (Zigler, Singer, & Bishop-Josef, 2005).

For positive learner outcomes and higher student achievement to transpire, children should actively engage in their own learning (Kelly & Turner, 2009). A review of research (Hart, Burts, & Charlesworth, 1997) showed that at the end of an academic year, children enrolled in programs where preponderantly direct instruction practices were used showed less positive behavioral, motivational, and academic outcomes than were shown by those children enrolled in programs where developmentally appropriate



instructional practices were utilized. In other words, type of instruction plays a critical role in student engagement and, ultimately, increased achievement.

Those who advocate for a more didactic, rote-style ECE learning environment believe young children ought to be exposed to traditionally academic facts and skills—participating in classroom activities that all too often involve memorization, lists, and tasks that can be deemed as *right* or *wrong* (Katz, 1999). E. D. Hirsch, a professor of English at the University of Virginia, disapproves of ECE practices in the United States, as compared to those in France, where students are often drilled in handwriting, conduct science experiments, and are introduced to specific mathematical skills (Jacobson, 1996). Furthermore, Hirsch has admonished NAEYC and other ECE professional associations for adhering to a “progressive” philosophy and advocating classroom ECE curriculum that dissuades the strong push of academic instruction for young children (Jacobson, 1996).

Such an approach has brought about concern among early education professionals who believe the ECE milieu hastily emphasizes an inappropriate academic atmosphere to the exclusion of more developmentally appropriate activities, such as play-based learning. Educational reform has created an arsenal of assessment tools that often produce a collection of injudicious assumptions about both young children and early childhood classrooms in general. The result is that ECE has become more *product-oriented*, rather than *process-oriented*. And while some young learners find success with such an approach, the typical result is the weakening of the goal of “leaving no child behind” (D’Ordine, 2002). The ever-increasing demand and widening expectation that

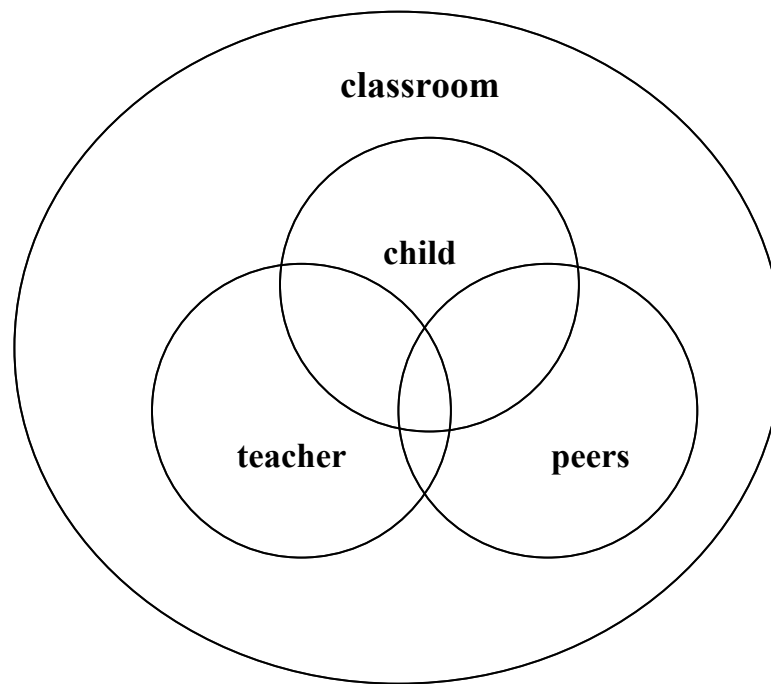
preschool and early elementary programs ought to ensure children's readiness for the next grade-level is yet another reason for alarm. Curriculum “push-down” from older grades to younger children, as well as ever-increasing academic expectations at an earlier age, is a very real phenomenon (Katz, 1999). In the case of young children, such an instructional approach can affect how a student consequently responds to the teacher and the overall learning process.

### **Conceptual Framework**

Many interrelated components, or *systems*, exist in the lives of young children. A system is a set of individual units that function in relation to a whole (Pianta & Walsh, 1996). A classroom system, for example, may be constrained by activity and/or characteristics of the larger system—the school. Systems theories, on the whole, take into account the wide variety of people, cultures, and communities that influence children and their experiences. Subsequently, the principles of systems theories serve to highlight the fact that child behavior is affected by how the child relates within the context of the classroom (Pianta, 1999).

The current study builds upon the theoretical frameworks of Pianta’s and Walsh’s (1996) *Contextual Systems Model* and Bronfenbrenner’s (1979) *Ecological Systems Theory*—both of which are systems models comprised of hierarchical levels of concentric circles—to consider the interplay and effect of the classroom, teacher, and peers upon the individual student. The result for the present study is the development of an *Early Childhood Classroom Systems Model* (see Figure 1) in which the classroom

acts as the largest system, while the individual parts (e.g., teacher, peers, child) interact within the greater context. Slightly different to prior systems models, the model for the current study joins the more proximal systems (teachers, peers, child) within the more distal system (classroom), rather than depicting each system as free-floating, individual and discrete parts within the larger system. This is an important distinction, as the current study examines the interplay between teacher and student (via teacher behaviors) and the student's subsequent classroom engagement.



**Figure 1. Early Childhood Classroom Systems Model.**

*Note.* Adapted from *Contextual Systems Model*, by R. C. Pianta & D. J. Walsh, 1996, and *Ecological Systems Theory*, by U. Bronfenbrenner, 1979.

## **Classroom Observation in Early Childhood**

The use of classroom observation has revealed substantial differences in the quality of instructional approaches and the subsequent effect on children's cognitive and social-emotional experiences in pre-kindergarten and early elementary classrooms (Pianta, et al., 2005). Pre-kindergarten and/or early elementary classroom observations provide a means for linking teachers' behaviors to learner outcomes, thus creating a system more capable of producing developmental gains for young children (Pianta, 2003).

Broadhead, Wood, and Howard (2010) argued that observation is critically central in researching young children's learning, as well as effective practice. Additionally, research indicates that relying solely on standardized measures of achievement is both inefficient and incomplete—particularly where young children are concerned (Stuhlman & Pianta, 2009). It has been proposed that the observation of classroom quality and instructional strategies can offer a valuable alternative to direct student assessment.

The current study differs from previous studies in several major ways. First, it simultaneously examines student, teacher, and the overall classroom. Second, observers did not specifically look for the presence or absence of one type of activity structure; all settings and instructional orientations (e.g., whole class, small group, individual student) that occurred in a naturalistic classroom setting were examined. Third, it specifically focused on pre-k to second-grade classrooms that were located within the same public elementary school/school district. Next, the schools were highly diverse in terms of socio-economic status and ethnicity. Also, stratified random sampling was used within

each classroom in order to examine individual differences by student sex and ethnicity. Finally, the study measured academic engagement, including time on-task and time engaged in meaningful activities.

### **Purpose of the Study**

Although previous research has focused on ECE instruction at the teacher and/or classroom level, more observational studies are needed, centering on students' behaviors, as well as on teachers and the classroom (Waxman, Padrón, Franco-Fuenmayor, & Huang, 2009). All too often, the quality of ECE is assessed by focusing solely on the teacher (Chien et al., 2010). To understand the comprehensive nature of teaching and learning, as well as to identify patterns of teacher-student interaction that could result in differential learning outcomes for students, it is important to view instruction from all three perspectives (Waxman, Padrón, Franco-Fuenmayor, & Huang, 2009). Additionally, Chien et al. (2010) emphasized the importance of looking further than environmental quality and also focusing on children's classroom engagement—a methodology not available in environmental assessments—in order to better describe dimensions of the classroom environment linked to early childhood learner outcomes.

As communities continue to develop into a variety of peoples and schools become more culturally diverse, issues involving the individualized needs of an array of learners will gain ever-increasing significance with regard to instructional strategies and classroom climate. Future policy implications demand that observational research take into account the various approaches inherent in the early childhood educational setting.

The current study promises to add to the research on ECE learning environments by incorporating a thorough and wide-ranging examination of different instructional approaches.

The benefits related to classroom observation and improved early childhood policies are crucial and infinite. As Pianta (2003) indicated, current policy debates provide sound rationale for more systematic attempts at observing and assessing young learners' experiences within their early childhood classrooms. Identifying and tackling early education's strengths and deficiencies only strengthens the quality of learning for all children. And with regard to student ethnicity, consistent evidence shows that students of color and students from economically disadvantaged backgrounds are exposed to lower quality instruction than are children from other family backgrounds (Stipek, 2004). This discrepancy in achievement is particularly evident in the outcomes of children who speak a language in the home other than English. Collectively, English language learners (ELLs) lag considerably behind English-speaking students in academic achievement (Genesee, Linholm-Leary, Saunders, & Christian, 2006). Espinosa (2010) said that high-quality instruction for ELLs ought to mirror high-quality instruction for English-speaking children; that is, strategies such as active engagement, small group pairings, and opportunities for students to practice new information and skills all support optimum results. Alas, quality research on early childhood instruction for ELL students is considerably lacking (Espinosa, 2010).

The purpose of the current study is to observe pre-kindergarten through second-grade public school classrooms, specifically noting child-centered and teacher-directed

pedagogical approaches, by simultaneously examining: student behavior and activity structure; teacher instructional orientation and rationale; and overall classroom environment. The current study builds upon the work of Pianta, examining classroom instruction and its subsequent effect on student engagement and educational quality; however, unlike previous studies, researchers in the current study observed the nature of activity structure and various student demographic variables. Additionally, dissimilar to prior classroom observation research studies, which typically included an overwhelming percentage of White students (Chien, et al., 2010; Pianta, La Paro, Payne, Cox, & Bradley, 2002; Stuhlman & Pianta, 2009), Hispanic and African American students comprised 63.5% of the current study's overall sample.

Policy-makers have called for research-based, accessible information on classroom instruction in the early childhood setting. Also emphasized by researchers is the need for additional studies on ECE instructional strategies and curricula for ELL children (Espinosa, 2010). The current study takes an all-encompassing and multi-faceted approach to classroom observation in pre-k through second-grade classrooms, considering such comprehensive factors as: classroom setting, student ethnicity, grade-level, activity structure, purpose of teacher interaction, and classroom environment.

## Research Questions

The present study will attempt to answer the following research questions:

1. In what types of activities are young children participating in early childhood classrooms?
2. Are there differences in activity types by student sex, ethnicity, and/or grade-level?
3. To what extent are teachers of students in pre-kindergarten and early elementary classrooms utilizing child-centered instructional practices versus more didactic, direct-instructional approaches?
4. Are there differences by grade-level in teacher instructional behaviors?
5. How does ECE instruction differ by school characteristics, such as percentage of economically disadvantaged students and percentage of limited English proficient (LEP) students?
6. How does student-centered versus teacher-centered instruction impact students' academic engagement (e.g., on-task versus off-task behaviors)?



## Definition of Terms

The following is a list of terms and definitions as used within the current study:

1. *Academic Engagement*: On-task versus off-task behavior by students during specific classroom activities (e.g., writing, participating in tasks, reading aloud, reading silently, talking about academics, asking questions) (Chien, et al., 2010; Finn & Pannozzo, 2004; Greenwood, Horton, & Utley, 2002)
2. *Activity Structure*: The use of whole-group, small group, or individual instruction (Kelly & Turner, 2009)
3. *Early Childhood Education*: The education of children from birth through second-grade
4. *English Language Learner (ELL)*: A subgroup of linguistically and culturally diverse students who have been assessed and qualify for support services as a result of their limited English proficiency (Gottlieb, 2006)
5. *Limited English Proficient (LEP)*: Federal legislation label for English language learners (Gottlieb, 2006)

## **CHAPTER II**

### **REVIEW OF RESEARCH**

This chapter reviews previous research on early childhood observation studies and instruments, ECE teacher instructional quality, and children's engagement in preschool and early elementary settings. The review of research is presented in three tables, each appearing in three distinct sections within the chapter. Specifically, the tables show each study's purpose, sample and methodology, and key findings. These previous studies were included in the current review as a result of their relevance to the present study's research goals.

#### **Observation in ECE**

A range of early childhood classroom observation measures currently exists. Because numerous ECE observation studies have utilized similar instrumentation, it is appropriate to first review studies that have described the creation and evaluation of several of these observation tools. Ultimately, the growing number of observation instruments, along with evidence-based research that supports the critical role of observing a child's environment with regard to developmental outcomes and the acquisition of knowledge, calls for an increase in studies related to the examination of the overall early childhood learning climate. Table 1, *Research on Early Childhood Observation Studies*, provides a summation of 11 articles on classroom observation

instruments and studies, published from 1990 to 2009. Articles are listed alphabetically, by author.

Hyson, Hirsh-Pasek and Rescorla (1990) reported on the development of the *Classroom Practices Inventory (CPI)*. Looking at a very limited study sample (10 early childhood programs in two states and 48 additional programs being observed by university students in early childhood education courses), Hyson and colleagues found: the tool demonstrated a high degree of internal consistency; CPI scores correlated significantly with teachers' and parents' educational attitudes; and modest relationships existed between the CPI scores of children's preschools and measures of academic skills, creativity, and anxiety.

In 2003, Pianta proposed use of the *Classroom Assessment Scoring System (CLASS)* tool for systematic classroom observation. After reviewing the literature on classroom observation in relation to policy and practice issues in early education, Pianta noted that no appropriate tools existed for observational assessment needed to gauge whether pre-kindergarten and/or early elementary classrooms were of high quality. This review laid the groundwork for the creation of the *CLASS* tool.

Table 1

**Research on Early Childhood Observation Studies**

| Study                                | Purpose   | Sample/Method   | Results   |
|--------------------------------------|---|---|---|
| Burchinal, et al. (2000)             | To determine whether or not children's outcomes differ statistically among those children who do and those who do not experience child care that meets professional recommendations | 89 African American children enrolled in 27 community-based child-care centers in two adjacent southeastern cities<br><br>Classroom observation (Infant/Toddler Environment Rating Scale [ITERS] & Early Childhood Environment Rating Scale [ECERS])<br><br>Standardized measures of cognitive development<br><br>Family environment assessment | Quality of child care in community-based centers was related to children's cognitive development, even after adjusting for child and family characteristics   |
| Hyson, Hirsh-Pasek & Rescorla (1990) | To report on the development of a new early childhood classroom observation measure, the Classroom Practices Inventory (CPI)  | 2 sources: (1) 10 early childhood programs in Pennsylvania and Delaware; (2) 48 additional programs (half-day preschools, laboratory schools, day care centers, and public and private kindergartens) in PA and DE observed by university students in ECE courses   | Scale has a high degree of internal consistency<br><br>CPI scores correlated significantly with teachers' and parents' educational attitudes<br><br>Modest relationships between CPI scores of children's preschools and measures of academic skills and creativity |

Table 1 (continued)

| Study                               | Purpose   | Sample/Method  | Results   |
|-------------------------------------|---|--|---|
| Loeb, Fuller, Kagan & Carrol (2004) | To report the observed quality of center and home-based child settings selected by single mothers soon after they entered welfare reform programs   | 451 California and Florida families (low-income mothers and young children [12-42 months]) in welfare-to-work programs under the federal <i>Temporary Assistance for Needy Families (TANF)</i> program<br><br>Maternal interview ( <i>Home Observation for Measurement of the Environment [HOME]; Family Day Care Rating Scale [FDCRS]</i> )<br><br>Child assessment<br><br>Observation ( <i>ECERS</i> ) | Children displayed stronger cognitive growth when caregivers were more sensitive and responsive<br><br>Children showed stronger social development when care providers were educated beyond high school   |
| Pianta (2003)                       | To review the literature on classroom observation in relation to policy and practice issues in early education, and subsequently propose the use of systematic classroom observation via the <i>Classroom Assessment Scoring System (CLASS)</i> | Literature on classroom observation in relation to policy and practice issues in early education<br><br>Review of literature   | No standardized measures were available for assessing pre-kindergarten/early elementary classrooms' contributions to child competence that could be appropriately used in a system of accountability or professional development focused on classroom quality |

Table 1 (continued)

| Study                   | Purpose   | Sample/Method  | Results  |
|-------------------------|---|--|--|
| Pianta (2003) continued |   |  | <p>No appropriate tools for observational assessment (needed to gauge whether programs were high quality)</p> <p>No ways to improve program quality that focused on actual experiences of children and teachers' classroom behavior</p> <p>Groundwork laid for the creation of the <i>CLASS</i> tool</p>                               |
| Pianta, et al. (2005)   | <p>To examine the extent to which program, classroom, and teacher attributes predict observed quality and teacher-child interactions in pre-kindergarten programs</p> | <p>238 classrooms representing 6 states' pre-kindergarten programs</p> <p>Classroom observation (<i>CLASS</i>, <i>ECERS-R</i>)</p> <p>Teacher questionnaire (<i>Modernity Scale</i>)</p> | <p>Classrooms with at least 60% low-income children were rated significantly lower in quality and less time in free-choice centers</p> <p>Classrooms in a school building offered less time in free choice-centers, more time in whole group settings</p> <p>Effect of location in school &amp; poverty was significant on centers</p> |

Table 1 (continued)

| Study   | Purpose   | Sample/Method  | Results   |
|---|---|--|---|
| Pianta, La Paro, Payne, Cox, & Bradley (2002) | <p>To observe kindergarten classrooms and classroom activities and child-teacher interactions</p> <p>To observe classroom quality and its relation to teacher, school, classroom, and family characteristics and child outcomes</p> | <p>223 kindergarten students, their teachers, and their families, from suburban or rural public school kindergarten classrooms in Arkansas, North Carolina, and Virginia (a subset of a larger sample of children involved in the <i>NICHD Study of Early Child Care</i>)</p> <p>Classroom observation (<i>Classroom Observation System for Kindergarten [COS-K]</i>)</p> <p>Kindergarten teachers' ratings of children's social and academic outcomes (<i>Teacher-Child Rating Scale [T-CRS]</i> and <i>Early Childhood Longitudinal Study [ECLS] Academic Competence Rating Scale</i>)</p> <p>Family demographic information (provided by mothers)</p> | <p>Most frequently observed forms of activity were structured teacher-directed activity and whole-group instruction</p> |

Table 1 (continued)

| Study         | Purpose  | Sample/Method   | Results   |
|---------------|--|---|---|
| Stipek (2004) | To assess the nature of instruction in kindergarten and first-grade classrooms | <p>109 kindergarten classrooms, 138 first-grade classrooms, and 67 combination classrooms from 155 schools in 48 school districts in three states (two in the northeast and one on the west coast)</p> <p>Both rural and urban communities</p> <p>High proportion of low-income children and children of color</p> <p>Classroom observation (<i>Classroom Observation Measure [ECCOM]</i>)</p> <p>Basic school information survey (principal or designee)</p> <p>Teacher and school climate survey (adapted from <i>School Restructuring Study</i>)</p> | <p>Quality of classroom instruction was associated with demographics of student body</p> <p>Schools serving relatively high proportions of low-income children and children of color emphasized basic skills more and engaged in more didactic teaching and less constructivist teaching practices</p> <p>Teaching approaches were predicted, in part, by the ethnic composition of the classroom</p> <p>Didactic teaching was particularly common in classrooms with a high proportion of African American students</p> <p>Constructivist teaching was high in classrooms with a high proportion of Caucasian children</p> |



Table 1 (continued)

| Study                    | Purpose   | Sample/Method  | Results   |
|--------------------------|---|--|---|
| Stipek & Byler (2004b)   | To assess a new early childhood classroom observation instrument                                | <p>127 kindergarten and first-grade classrooms in 99 schools (96 public, 3 private) from 46 school districts in 3 states (2 in the northeast and 1 on the west coast)</p> <p>Rural and urban communities<br/>Schools varied in concentration of poverty and ethnic breakdown</p> <p>Instrument designed for classrooms serving children age 4–7 years</p> <p>Assessment of new early childhood classroom observation instrument: <i>Early Childhood Classroom Observation Measure (ECCOM)</i></p> <p>Teacher questionnaire</p> | <p>Measure produced reliable scores</p> <p>Meaningful, predictable associations were found between scores on the observation measure and teachers' self-reported practices, teaching goals, relationships with children, and perceptions of children's ability to be self-directed learners, on the other</p> |
| Stuhlman & Pianta (2009) | To present a typology of first-grade classrooms by examining teacher, child, family, and school | 820 first-grade classrooms from over 700 schools in 32 states that were part of the <i>National Institute for Child Health and</i>   | Revealed four discernible, replicable types of first-grade classrooms: (1) <i>high overall quality</i> , (2) <i>positive emotional</i>  |

Table 1 (continued)

| Study                                 | Purpose         | Sample/Method  | Results   |
|---------------------------------------|-----------------|--|---|
| Stuhlman & Pianta<br>(2009) continued | characteristics | <p><i>Human Development's Study of Early Child Care and Youth Development (NICHD SECCYD)</i></p> <p>Average ethnic makeup of the classrooms was 75% Caucasian, 12% African American, 4% Asian, 4% Hispanic, and 3% students of mixed ethnicity</p> <p>SES – 8% below poverty, 18% working poor, and 73% middle class or above</p> <p>Classroom observation<br/>(<i>Classroom Observation System for First Grade [COS-1]</i>)</p> <p>Teacher questionnaire</p> <p>Parent questionnaire</p> <p>Child assessment (<i>Woodcock Johnson Psycho-educational Battery Revised Tests of Cognitive Ability and Tests of Achievement</i>)</p> | <p><i>climate, lower academic demand, (3) mediocre quality, and (4) low overall quality</i></p> <p>Approximately one-quarter of the classrooms fell within the <i>high overall quality</i> type</p> <p>30% of the classrooms were categorized as types 2 &amp; 3</p> <p>17% of the classrooms were characterized as <i>low overall quality</i> type</p> |

Table 1 (continued)

| Study                | Purpose  | Sample/Method   | Results  |
|----------------------|--|---|--|
| Sylva, et al. (2006) | To introduce a newly developed English classroom rating scale; to explore the tool's relationship to other well-established measures of quality by investigating its ability to predict child outcomes | Observation ( <i>ECERS-R</i> , <i>ECERS-E</i> )   | Introduced the ECERS-E instrument<br><br>Centre [sic]-based quality was a significant predictor of children's development at entry to school<br><br>The ECERS-R had a strong relationship with children's socio-behavioral progress in preschool   |
| Vartuli (1999)       | To examine variations in reported beliefs and observed instructional practices of Head Start, kindergarten, first-, second-, and third-grade teachers  | 137 educators (18 Head Start, 20 kindergarten, 33 first-grade, 33 second-grade, 33 third-grade teachers)<br><br>Classroom observation ( <i>Classroom Practices Inventory [CPI]</i> )<br><br>Survey ( <i>Early Childhood Survey of Beliefs and Practices and Teacher Questionnaire</i> ) | Teacher beliefs and practices varied across and within grade levels<br><br>ECE beliefs were significantly more appropriate than practices<br><br>As grade level increased (Kindergarten – third-grade), level of self-reported developmentally appropriate beliefs and practices as well as observed classroom behaviors decreased |

Stipek and Byler (2004b) evaluated the *Early Childhood Classroom Observation Measure (ECCOM)*, that, unlike previous instruments, provided feedback regarding the presence and scope of both of the two most common approaches to instruction, social climate, and classroom management: *constructivist theory* (takes a child-centered position with regard to the learning environment, espousing the belief that teachers ought to be partners with students and encourage children to explore and manipulate objects) versus *traditional learning theory* (“academic” slant to learning, warning that basic skills must be acquired via didactic, direct instruction). Prior to this study, classroom observation research typically took a mutually exclusive stance with regard to assessing the learning environment, measuring the presence of either one theoretical tradition or the other, as opposed to pooling the two divergent viewpoints into one comprehensive assessment. Teachers’ education level and the extent of constructivist practices showed a significant positive association, while didactic practice scores showed a negative association with teaching experience and teacher education level. Also, close, personal relationships between teachers and young students were positively associated with constructivist practices, while the opposite was found with didactic, teacher-centered practices. Finally, didactic teachers rated their students as less capable of self-directed learning.

Expanding on the long-used *Early Childhood Environment Rating Scale-Revised (ECERS-R)* (Harms, Clifford, & Cryer, 2005), Sylva, et al. (2006) introduced an English classroom rating scale, the *Early Childhood Environment Rating Scale-Extension (ECERS-E)*. The purpose of their study was to explore the tool’s relationship to other

well-established measures of quality by investigating its ability to predict child outcomes. Results indicated that centre[sic]-based quality was a significant predictor of children's development at entry to school. Additionally, the ECERS-E had a strong relationship with children's socio-behavioral progress in preschool.

Using the *Infant/Toddler Environment Rating Scale (ITERS)* and *ECERS*, Burchinal and colleagues (2000) observed the early childhood settings of 89 African American children (ages 6 to 36 months) enrolled in 27 community-based child-care centers to determine whether or not children's outcomes differed statistically among those children who did and those who did not experience child care that meets professional recommendations. The results of the study revealed that quality of childcare was related to children's cognitive development.

Loeb, Fuller, Kagan, and Carrol (2004) observed the quality of center and home-based child settings selected by single mothers soon after they entered welfare reform programs. Not unlike many other ECE observational studies, the researchers used the ECERS tool during their observations of 451 California and Florida families (low-income mothers and young children [12-42 months]). A major finding from the study indicated that children displayed stronger cognitive growth when caregivers were more sensitive and responsive.

Pianta and colleagues (2005) examined the extent to which program, classroom, and teacher attributes predicted observed quality and teacher-child interactions in pre-kindergarten programs. They utilized two classroom observation tools—*CLASS* and *ECERS-R*—to study 238 classrooms representing six states' pre-kindergarten programs.

Findings revealed: classrooms with at least 60% of children from low-income families were rated significantly lower in quality; classrooms in a school building offered less time in free choice-centers, and more time in whole group settings; and classrooms with at least 60% of the children from poor families offered less time in free choice-center activities.

In 2002, Pianta, La Paro, Payne, Cox, and Bradley observed kindergarten classrooms to explore the relation of classroom quality to teacher, school, classroom and family characteristics, and child outcomes. In addition to collecting classroom observation data using the *Classroom Observation System for Kindergarten (COS-K)*, the study utilized secondary data from 223 kindergarten students/teachers/and families involved in the NICHD study. Study results showed that the most frequently observed forms of activity observed in the kindergarten classrooms were structured teacher-directed activity and whole-group instruction.

In 2004, Stipek utilized classroom observation (*Classroom Observation Measure [ECCOM]*) to assess the nature of instruction in 109 kindergarten classrooms, 138 first-grade classrooms, and 67 combination classrooms from 155 schools in 48 school districts in three states (two in the northeast and one on the west coast). Stipek's research occurred in both rural and urban communities and included a high proportion of low-income children and children of color. Results indicated that classroom instructional quality was associated with the demographics of the student body: Schools serving relatively high proportions of low-income children and children of color emphasized

basic skills and engaged in more didactic teaching and less constructivist teaching practices than did their higher income, non-minority counterparts.

In looking to present a typology of first-grade classrooms via the examination of teacher, child, family, and school characteristics, Stuhlman and Pianta (2009) observed classroom experiences in more than 800 U.S. first-grade classrooms in 32 states that were a part of the National Institute for Child Health and Human Development's Study of Early Child Care and Youth Development (NICHD SECCYD). The average ethnic makeup of the classrooms in the study was 75% Caucasian, 12% African American, 4% Asian, 4% Hispanic, and 3% students of mixed ethnicity. In terms of socio-economic status (SES), 8% of the students were below poverty, 18% were from families considered working poor, and 73% were from families labeled as middle class or above. Classroom quality was analyzed using the *Classroom Observation System for First Grade* (COS-1). In addition to recording activities and teacher behaviors, data collectors observed and documented their observations about the classroom environment, making qualitative ratings via a seven-point scale. Findings revealed four types of first-grade classrooms: (1) *high overall quality*, (2) *positive emotional climate, lower academic demand*, (3) *mediocre quality*, and (4) *low overall quality*. Approximately one-quarter of the classrooms fell within the high overall quality type 30% of the classrooms were categorized as types 2 & 3 17% of the classrooms were characterized as low overall quality type.

Vartuli (1999) examined variations in reported beliefs and observed instructional practices of 137 Head Start, kindergarten, first-, second-, and third-grade teachers. Via

classroom observation (*Classroom Practices Inventory [CPI]*) and teacher survey (*Early Childhood Survey of Beliefs and Practices and Teacher Questionnaire*), Vartuli found that teacher beliefs and practices varied across and within grade-levels. Important to the current study, the researcher noted that the teachers' ECE beliefs were significantly more appropriate than were their actual practices. Moreover, as grade-level increased (kindergarten to third-grade), the level of teacher self-reported developmentally appropriate beliefs and practices (as well as their observed classroom behaviors) decreased.

In summary, each of the studies listed in Table 1 added to the use of systematic classroom observation by describing the quality of the emotional and instructional environment; the extent of highly constructivist versus highly academic teaching approaches; and various familial demographic variables that affect curriculum and teaching practices within early childhood classrooms. Despite differences in sample, setting, and methodology, the studies jointly depicted classroom observation as a necessary and appropriate alternative to direct student assessment as the singular measure of effective early childhood practice. A review of the research supports the continued use of such methodology in order to address critical issues in the pre-kindergarten and early elementary grades (Pianta, 2003).



### **ECE Teacher Instructional Quality**

In an age of high-stakes testing and accountability, the distinction between those instructional practices rooted in robust academic and teacher-directed tactics and those that utilize methodologies which acknowledge young children as individual, active participants in their own learning, can be seemingly endless. NAEYC has made clear what it believes young children should be taught, how to determine whether or not children are developing as they should, and how to verify that ECE programs are adequately meeting children's needs. With regard to instruction, NAEYC plainly recommends that children be "active and engaged," and that "content is learned through investigation" (NAEYC, 2003).

While a stance set forth by the industry's foremost ECE professional organization makes a strong case for the inclusion of student-centered instruction (e.g., play-based learning), child-centered practices have been supplanted by teacher-directed lessons and standardized testing in most public kindergarten classrooms (Alliance for Childhood, 2009). Researchers found kindergarten students: spent up to six times longer being instructed in mathematics and literacy, as opposed to engaging in any free-choice time; prepared for standardized tests, despite the questionable validity of doing so; no longer had access to classic play materials (e.g., blocks, dramatic play, props, sand and water tables); and had no opportunities at all for play at school, due to school administrators not valuing its impact (Alliance for Childhood, 2009). Table 2, *Research on Teacher Instructional Behavior in Early Childhood Settings*, includes 10 studies on instructional quality, spanning the time frame of 1993 to 2010.

Table 2

**Research on Teacher Instructional Quality in Early Childhood Classrooms**

| Study   | Purpose   | Sample/Method   | Results  |
|---|---|---|--|
| Buchanan, Burts, Bidner, White, & Charlesworth (1998) | To identify classroom characteristics and teacher characteristics related to the self-reported beliefs and classroom practices of first-, second-, and third-grade teachers | Questionnaire (277 teachers [ <i>The Primary Teacher's Beliefs and Practices Survey</i> ])  | Classroom characteristics (class size, grade-level, number of children with disabilities, and number of children on free or reduced lunch) and teacher characteristics (perceived relative influence and area of certification) predicted teacher beliefs and practices  |
| Charlesworth, et al. (1993)                           | To measure kindergarten teachers' beliefs about developmentally appropriate classroom practice  | 204 kindergarten teachers (questionnaire)<br>20 kindergarten classrooms ( <i>Checklist for Rating Developmentally Appropriate Practice in Kindergarten Classrooms</i> ) | There was a moderate, statistically significant positive correlation between reported beliefs and practices concerning DAP teaching<br><br>Questionnaires showed kindergarten teachers used instruction that was at least moderately related to their reported beliefs about the importance of DAP; but belief was stronger than reported classroom activities and observed classroom behavior |

Table 2 (continued)

| Study                          | Purpose   | Sample/Method  | Results   |
|--------------------------------|---|--|---|
| File & Gullo (2002)            | To examine how preservice teachers in early childhood (ECED) and elementary education (ELED) programs compared with regard to beliefs about primary classroom practices | 119 pre-service teachers who were either at the beginning or near the end of their programs in ECED or ELED<br><br>Survey ( <i>Beliefs about Primary Grades Curriculum and Teaching Survey</i> )   | Student teachers favored more frequent use of less developmentally appropriate strategies than beginning students |
| LoCasale-Crouch, et al. (2007) | To observe classroom quality and examine teacher, program, and classroom characteristics associated with various emotional and instructional profiles                   | 2800 pre-kindergarten children from 463 sites in 5 states, 701 teachers<br><br>Secondary data analysis ( <i>National Center for Early Development and Learning [NCEDL] Multi-State Study of Pre-Kindergarten; State-Wide Early Education Programs Study [SWEEPS]</i> )<br><br>Classroom observation ( <i>CLASS, ECERS-R</i> )<br><br>Teacher questionnaire | Associations between teacher characteristics and program characteristics were not significant                     |

Table 2 (continued)

| Study   | Purpose   | Sample/Method   | Results   |
|---|---|---|---|
| Pianta, La Paro, Payne, Cox, & Bradley (2002) | <p>To observe kindergarten classrooms and classroom activities and child-teacher interactions</p> <p>To observe classroom quality and its relation to teacher, school, classroom, and family characteristics and child outcomes</p> | <p>223 kindergartners, their teachers, and their families, from suburban or rural public school kindergarten classrooms in Arkansas, North Carolina, and Virginia (a subset of a larger sample of children involved in the <i>NICHD Study of Early Child Care</i>)</p> <p>Classroom observation (<i>Classroom Observation System for Kindergarten [COS-K]</i>)</p> <p>Kindergarten teachers' ratings of children's social and academic outcomes (<i>Teacher-Child Rating Scale [T-CRS]</i> and <i>Early Childhood Longitudinal Study [ECLS] Academic Competence Rating Scale</i>)</p> <p>Family demographic information (provided by mothers)</p> | <p>Ratings of teachers' positive interactions with the students, classroom instructional climate, and child-centered environments were lower when concentration of poverty in the school was high</p> <p>Students' social and on-task behaviors were higher when ratings indicated classroom higher quality</p> |

Table 2 (continued)

| Study             | Purpose   | Sample/Method  | Results  |
|-------------------|---|--|--|
| Ranz-Smith (2007) | To explore teacher perceptions of the role of play in learning and the implications for practice (instructional goals, student products, and classroom climate) | 4 first-grade teachers from 2 diverse socio-economic school settings<br>Phenomenological case study  | Different perceptions of the definition and import of play led to differing levels of willingness to include child-initiated play in the classroom   |
| Stipek (2004)     | To assess the nature of instruction in kindergarten and first-grade classrooms  | 109 kindergarten classrooms, 138 first-grade classrooms, and 67 combination classrooms from 155 schools in 48 school districts in three states (two in the northeast and one on the west coast)<br>Both rural and urban communities<br>High proportion of low-income children and children of color<br>Classroom observation ( <i>Classroom Observation Measure [ECCOM]</i> )<br>Basic school information survey (principal or designee) | Quality of classroom instruction associated with demographics of student body<br>Schools serving relatively high proportions of low-income children and children of color emphasized basic skills more and engaged in more didactic teaching and less constructivist teaching practices<br>Teaching approaches were predicted, in part, by the ethnic composition of the classroom<br>Didactic teaching was particularly common in classrooms with a high proportion of African American |

Table 2 (continued)

| Study                   | Purpose   | Sample/Method   | Results   |
|-------------------------|---|---|---|
| Stipek (2004) continued |   | Teacher and school climate survey (adapted from <i>School Restructuring Study</i> ) | students<br>Constructivist teaching was high in classrooms with a high proportion of Caucasian children   |
| Stipek & Byler (2004a)  | To determine: (a) whether teachers of young children held views about how children learn and about the appropriate role of adults in the learning process; and (b) whether these teachers' views map on to a child-centered or basic skills orientation<br><br>To explore whether teachers who endorse and implement different approaches have different goals for their students | 60 preschool, kindergarten, and first-grade teachers<br><br>Observation             | For preschool and kindergarten teachers there were significant associations among beliefs, goals, practices, and to policy positions, regarding child-centered versus more didactic, basic-skills teaching approaches<br><br>For first-grade teachers, few of the predicted associations were found<br><br>Nearly all teachers who reported that they were unable to implement a developmentally appropriate program claimed that their program was too basic skills oriented |

Table 2 (continued)

| Study                    | Purpose   | Sample/Method   | Results  |
|--------------------------|---|---|--|
| Stuhlman & Pianta (2009) | To present a typology of first-grade classrooms by examining teacher, child, family, and school characteristics | <p>820 first-grade classrooms, 700+ schools in 32 states (part of <i>National Institute for Child Health and Human Development's Study of Early Child Care and Youth Development (NICHD SECCYD)</i>)</p> <p>Average ethnic makeup of classrooms: 75% White, 12% African American, 4% Asian, 4% Hispanic, 3% mixed eth.</p> <p>SES: 8% below poverty, 18% working poor, 73% middle class or above</p> <p>Classroom observation (<i>Classroom Observation System for First Grade [COS-1]</i>)</p> <p>Teacher, Parent questionnaire</p> <p>Child assessment (<i>Woodcock Johnson Psycho-educational Battery Revised Tests of Cognitive Ability and Tests of Achievement</i>)</p> | <p>Revealed four discernible, replicable types of first-grade classrooms: (1) <i>high overall quality</i>, (2) <i>positive emotional climate, lower academic demand</i>, (3) <i>mediocre quality</i>, and (4) <i>low overall quality</i></p> <p>Approximately one-quarter of classrooms fell within <i>high overall quality</i> type</p> <p>30% were types 2 &amp; 3</p> <p>17% of classrooms were <i>low overall quality</i> type</p> |

Table 2 (continued)

| Study          | Purpose   | Sample/Method   | Results  |
|----------------|---|---|--|
| Vartuli (1999) | To examine variations in reported beliefs and observed instructional practices of Head Start, kindergarten, first-, second-, and third-grade teachers | 137 educators (18 Head Start, 20 kindergarten, 33 first-grade, 33 second-grade, 33 third-grade teachers)<br><br>Classroom observation ( <i>Classroom Practices Inventory [CPI]</i> )<br><br>Survey ( <i>Early Childhood Survey of Beliefs and Practices and Teacher Questionnaire</i> ) | Teacher beliefs and practices varied across and within grade-levels<br><br>ECE beliefs were significantly more appropriate than practices<br><br>As grade-level increased (Kindergarten – third-grade), level of self-reported developmentally appropriate beliefs and practices as well as observed classroom behaviors decreased |



Buchanan, Burts, Bidner, White, and Charlesworth (1998) identified classroom characteristics and teacher characteristics related to the self-reported beliefs and classroom practices of first-, second-, and third-grade teachers. Researchers gathered data from 277 teachers using the *Primary Teacher's Beliefs and Practices Survey*. Their findings revealed that classroom characteristics (e.g., class size, grade-level, number of children with disabilities, and number of children on free or reduced lunch) and teacher characteristics (e.g., perceived relative influence and area of certification) predicted teacher beliefs and practices.

In 1993, Charlesworth and colleagues measured 204 kindergarten teachers' beliefs about developmentally appropriate classroom practices, using the *Checklist for Rating Developmentally Appropriate Practice in Kindergarten Classrooms*. Their findings showed a moderate, statistically significant positive correlation between teachers' reported beliefs and practices concerning developmentally appropriate teaching. Also, questionnaire responses indicated that kindergarten teachers in the sampled used instruction that was at least moderately related to their reported beliefs about the importance of developmentally appropriate practices; however, this belief was stronger than their reported classroom activities and their observed classroom behavior.

Considering the ever-growing body of research that suggests favorable student outcomes ensue from enrollment in a high-quality early childhood program, LoCasale-Crouch, et al. (2007) observed and described classroom quality measures across 463 sites in five states. Along with classroom observation (CLASS and ECERS-R), researchers used secondary data analysis (*National Center for Early Development and*

*Learning [NCEDL] Multi-State Study of Pre-Kindergarten; State-Wide Early Education Programs Study [SWEEPS])* to study 701 teachers and 2800 pre-kindergarten children. Associations between teacher characteristics and program characteristics were not significant.

Pianta, La Paro, Payne, Cox, and Bradley (2002) observed classroom quality and its relation to teacher, school, classroom, and family characteristics and child outcomes. In terms of quality of instruction, results indicated that ratings of teachers' positive interactions with the students, classroom instructional climate, and child-centered environments were lower when the concentration of poverty in the school was high. Furthermore, students' social and on-task behaviors were higher when ratings indicated higher classroom quality.

Using a phenomenological case study methodology, Ranz-Smith (2007) explored teacher perceptions of the role of play in learning and the implications for practice (e.g., instructional goals, student products, and classroom climate). The author studied four first-grade teachers from two diverse socio-economic school settings. Findings showed that different perceptions of the definition and import of play led to differing levels of willingness to include child-initiated play—a developmentally appropriate learning practice in first-grade—with in the classroom.

In a sample of 109 kindergarten classrooms, 138 first-classrooms, 67 combined classrooms; Stipek (2004) found that instructional quality and teaching approaches were predicted, in part, by the ethnic composition of the classroom. Specifically, didactic teaching was common in classrooms with a high proportion of African American

students. Stipek's study included classroom observation and surveys of principals, teachers, and the school climate.

In 2004, Stipek and Byler studied 60 preschool, kindergarten, and first-grade teachers to determine: (a) whether teachers of young children held views about how children learn and about the appropriate role of adults in the learning process; and (b) whether these teachers' views mapped to a child-centered or basic skills orientation. Additionally, they explored whether teachers who endorsed and implemented different instructional approaches had different goals for their students. For preschool and kindergarten teachers, there were significant associations among beliefs, goals, practices, and policy positions, regarding child-centered versus more didactic, basic-skills teaching approaches. For first-grade teachers, few of the predicted associations were found. Nearly all teachers who reported that they were unable to implement a developmentally appropriate program claimed that their program was too basic-skills oriented to do so.

To review, research upholds the connection between quality early childhood instruction and favorable student outcomes; however, as the reviewed studies showed, the implementation of child-centered, developmentally appropriate practices in many ECE classrooms is not evident. Furthermore, students from poor families and/or families of color received even more inadequate, didactic instruction than did their middle-class, non-minority counterparts. The notion that some children are the recipients of deficient instruction can be intensified by the fact that how children attend to their learning, or whether or not they are engaged, has been shown to affect the overall process of knowledge acquisition.

## Children's Engagement

*Academic engagement* has often been defined as on-task versus off-task student behavior during specific classroom activities (e.g., writing, participating in tasks, reading aloud, reading silently, talking about academics, asking questions) (Chien, et al., 2010; Finn & Pannozzo, 2004; Greenwood, Horton, & Utley, 2002). The National Research Council (2000) reviewed the complex issue of how children learn, citing *active monitoring of their own experiences, opportunities for self-directed learning, and the ability to plan, monitor, revise, and reflect upon their learning* as key factors related to children's successful acquisition of knowledge. Additionally, in a meta-analysis of 35 studies, Fredrick (1980) noted that engaged instructional time showed a positive relationship with increased instructional outcomes.

The third review of research focuses on six studies, published from 2000 to 2010, related to children's classroom engagement. Chien and colleagues (2010) described patterns of children's engagement in pre-kindergarten classrooms by grouping children into profiles and explored whether those profiles were linked to gains in school readiness. Their study sample consisted of 2,751 children (mean age=4.62 years) enrolled in public pre-k programs that were part of the *Multi-State Study of Pre-Kindergarten and the Statewide Early Education Programs Study (SWEEPS)*. Using classroom observation (*Emerging Academics Snapshot*), child assessment (*PPVT-III, TVIP, OWLS, WJ III*, ID letters, count, ID colors, write name), and teacher report (*ECLS-K Teacher Questionnaire*), the researchers classified children into four profiles of

classroom engagement: *free play, individual instruction, group instruction, and scaffolded learning*.

In 2004, Finn and PannoZZo examined the conditions that promoted or discouraged classroom engagement among kindergarten students. The authors noted that *engagement* included learning behaviors (e.g., on-task behavior) and pro- and anti-social behavior. Using secondary data analysis (ECLS), their findings informed much of what is known about engagement. Student behavior varied as a function of percentage of minority students in a school. Students in schools with smaller percentages of minority students exhibited more positive approaches to learning and fewer externalizing problem behaviors. With regard to sex, girls were rated as better behaved (displayed more positive approaches to learning and fewer externalizing problem behaviors) than were boys. In terms of ethnicity, Black students were rated as showing less positive approaches to learning and more externalizing problem behaviors than were White students. Also, behavior was significantly correlated with spring achievement scores. Ultimately the study showed that students' engagement in impulsive or disruptive behavior impeded their learning.

Another study exploring classroom behaviors that enable academic learning and engagement was conducted by Greenwood, Horton, and Utley (2002). They defined *academic engagement* as a collection of specific classroom behaviors: writing, participating in tasks, reading aloud, reading silently, talking about academics, and asking questions. With a sample of 64 kindergarten teachers and 224 students in traditional, computer, and science Title I magnet elementary schools, the researchers

used classroom observation (*Mainstream Version of the Code for Instructional Structure and Student Academic Response [MS-CISSAR]*). Findings showed that engagement in academic responses increased from kindergarten through second-grade; task management behavior was highest in kindergarten and lowest in second-grade; and inappropriate behavior was stable from kindergarten through second-grade.

In their review of research, Kelly and Turner (2009) explored the link between activity structure and student engagement and investigated whether or not whole-class modes of instruction were linked with increased problems of achievement motivation and disengagement for low-achieving students. Kelly and Turner defined *activity structure* as the use of whole-class instruction or small-group and individualized modes of instruction. Ultimately, no conclusive evidence of a link between whole-class instruction and disengagement among low-achieving students was found in their review.

Marks (2000) investigated whether patterns existed in students' engagement; whether the patterns were consistent across grade-levels; and whether class subject matter (mathematics or social studies) differentially affected engagement. Using secondary data analysis (*Center on the Organization and Restructuring of Schools, 1991-1994*). Findings showed that, regardless of grade-level, girls were significantly more engaged in instructional activity than were boys. No racial or ethnic affect on engagement was present at any grade-level; but prior achievement influenced engagement significantly among elementary school students. Finally, authentic instructional work was a powerful contributor to engagement for elementary students.

Stright and Supplee (2002) conducted the final study reviewed in this chapter. The purpose of their study was to examine differences between children's self-regulatory behaviors in three instructional contexts: teacher directed, seat work, and small group. The sample consisted of 51 second-grade students (22 girls, 29 boys) who were part of a larger study of children's development in a small midwestern university city. All students were White except for one Asian American and three children of mixed ethnicity. Additionally, the families were middle-class. Stright and Supplee's results showed that during teacher-directed instruction, students were less likely to attend to instructions, monitor their work, and ask for help than they were during seatwork or small-group instruction. Also, students were more likely to be disorganized during seatwork or small-group instruction than they were during teacher-directed instruction. Lastly, students were more likely to talk about their thinking during small-group instruction than they were during teacher-directed instruction or seatwork. Table 3, *Research on Children's Engagement in Preschool and Early Elementary Settings*, lists the six engagement studies included in this review.

Table 3

**Research on Children’s Engagement in Preschool and Early Elementary Settings**

| Study                  | Purpose  | Sample/Method  | Results   |
|------------------------|--|--|---|
| Chien, et al. (2010)   | <p>To describe patterns of children’s engagement in pre-kindergarten classrooms by grouping children into profiles</p> <p>To explore whether these profiles were linked to gains in school readiness</p> | <p>2,751 children (mean age = 4.62 years) enrolled in public pre-k programs that were part of the <i>Multi-State Study of Pre-Kindergarten and the State-Wide Early Education Programs Study (SWEEP)</i></p> <p>Classroom observation (<i>Emerging Academics Snapshot</i>)</p> <p>Child assessment (<i>PPVT-III, TVIP, OWLS, WJ III</i>, ID letters, count, ID colors, write name)</p> <p>Teacher report (<i>ECLS-K Teacher Questionnaire</i>)</p> | <p>Classified children into four profiles of classroom engagement: <i>free play, individual instruction, group instruction, and scaffolded learning</i></p>   |
| Finn & Pannozzo (2004) | <p>Examined conditions that promote or discourage classroom engagement among kindergarten students</p> <p><i>Engagement</i> included learning behaviors and pro- and antisocial behavior</p>             | <p>663 public and private schools</p> <p>1,932 kindergarten teachers</p> <p>10,725 kindergarten students who could be matched to a teacher in the teacher sample</p> <p>Approximately 50.1% of the</p>   | <p>Student behavior varied as a function of percentage of minority students in a school</p> <p>Students in schools with smaller percentages of minority students exhibited more positive approaches to learning and</p> |



Table 3 (continued)

| Study                            | Purpose  | Sample/Method   | Results   |
|----------------------------------|--|---|---|
| Finn & Pannozzo (2004) continued |  | <p>sample were boys; 49.3% were girls</p> <p>Approximately 58.9% were White, 14.8% African American, 16.1% Hispanic, 7.1% Asian, and 3.1% Native American/Pacific Islander</p> <p>Secondary data analysis (<i>ECLS</i>)</p> | <p>fewer externalizing problem behaviors</p> <p>Girls were rated as better behaved than boys (more positive approaches to learning and fewer externalizing problem behaviors)</p> <p>African American students showed less positive approaches to learning, more externalizing problem behaviors than White students</p> <p>Behavior significantly correlated with spring achievement scores</p> <p>Students' engagement in impulsive or disruptive behavior impeded learning</p> |
| Fredrick (1985)                  | <p>To explore the relationship between engaged instructional time and instructional outcomes</p> | <p>Meta-analysis of 35 regression and correlation studies</p> <p>Effect size: <math>d=.34</math></p>  | <p>86% of studies showed a positive relationship: However instructional time was measured, as it increased, learning increased. In five studies, relationship was zero</p>  |

Table 3 (continued)

| Study                             | Purpose   | Sample/Method  | Results  |
|-----------------------------------|---|--|--|
| Greenwood, Horton, & Utley (2002) | To explore classroom behaviors that enable academic learning and engagement   | 64 kindergarten teachers in traditional, computer, and science Title I magnet elementary schools<br>224 students<br>Classroom observation<br><i>(Mainstream Version of the Code for Instructional Structure and Student Academic Response [MS-CISSAR])</i> | Defined academic engagement: Collection of specific classroom behaviors (writing, participating in tasks, reading aloud/silently, talking about academics, asking questions)<br>Engagement in academic responses increased from kinder through second-grade<br>Task management behavior was highest in kindergarten and lowest in second-grade<br>Inappropriate behavior was stable from kindergarten through second-grade |
| Kelly & Turner (2009)             | To explore link between activity structure and student engagement<br><br>To investigate whether whole-class modes of instruction are linked with problems of achievement motivation and disengagement | Review of research—both quantitative and qualitative studies   | Defined activity structure as use of whole-class, small-group, or individualized instruction<br><br>No conclusive whole-class/disengagement among low-achieving students link<br><br>Whole class activities were not problematic for low-achievers   |

Table 3 (continued)

| Study                    | Purpose  | Sample/Method   | Results   |
|--------------------------|--|---|---|
| Marks (2000)             | To investigate whether patterns exist in students' engagement, whether the patterns are consistent across grade-levels, and whether class subject matter (mathematics or social studies) differentially affects engagement | 3,669 students representing 143 social studies and mathematics classrooms in a nationally selected sample of 24 restructuring elementary, middle, and high schools<br>24 schools (8 elementary, 8 middle, and 8 high schools)<br>Secondary data analysis ( <i>Center on the Organization and Restructuring of Schools</i> ) | At all three grade-levels, girls were significantly more engaged in instructional activity than were boys<br><br>No ethnic effect on engagement was present. Prior achievement influenced engagement among elementary school students<br><br>Authentic instructional work in elementary was a contributor to engagement for students  |
| Stright & Supplee (2002) | To examine differences between children's self-regulatory behaviors in 3 instructional contexts: teacher directed, seat work, and small group  | 51 second-grade students (22 girls, 29 boys) who were part of a larger study of children's development in a small Midwestern university city<br><br>All students were White except for one Asian American and three children of mixed ethnicity<br><br>Middle-class families  | During teacher-directed instruction, students were less likely to: attend to instructions, monitor their work, and ask for help than during seatwork or small-group instruction. More likely to be disorganized during seat work or small-groups than during teacher-directed instruction<br><br>Students more likely to talk about their thinking in small-groups vs. teacher-directed |

In summary, academic engagement has been defined as on-task versus off-task student behavior during specific classroom activities. Additionally, the idea of engagement has been broken down further into such categories as *free play*, *individual instruction*, *group instruction*, and *scaffolded learning*. Studies have shown that students' engagement in impulsive or disruptive behaviors impedes their learning. Some studies have found ethnicity to be a factor related to engagement, while others have found no such link. Boys, on the other hand, generally showed less evidence of engagement in instructional activity than did girls. Finally, authentic instruction led to increased engagement among elementary students.

### **Summary**

This chapter provided a review of research related to systematic classroom observation and observation instruments, instructional quality in ECE settings, and student engagement. Collectively, the studies provided strong support for the continued investigation of the types of activities in which young children are participating in early childhood classrooms; differences among teachers with regard to the utilization of child-centered instructional practices versus more didactic, direct-instructional approaches; how factors such as percentage of economically disadvantaged students and percentage of limited English proficient (LEP) students affect instruction; and how student-centered versus teacher-centered instruction impact students' academic engagement.

To review, the current study builds upon prior classroom observation research, yet differs from previous studies due to its simultaneous examination of student

behaviors, teacher practices, and overall classroom environment. This study specifically focused on pre-k through second-grade classrooms that were highly diverse in terms of socio-economic status and ethnicity. Finally, the consideration of student engagement adds an additional dimension to the overall picture.

## CHAPTER III

### METHODS

#### Setting

The purpose of this study was to observe and analyze a number of teacher and student behaviors and activity types in early childhood classrooms within a public school district. The current study utilized secondary data from a larger study in the winter and spring of 2010 that focused on effective teaching and learning in a public school district. Located in a metropolitan area in the south central region of the U.S., the school district served 23,864 students in 2009-2010. The ethnic breakdown of the district's students in 2009-2010 was: 44.4% Hispanic, 30.6% White, 19.1% African American, 5.5% Asian, and 0.3% Native American. Additionally, 47.56% of the students in the school district were classified as having come from economically disadvantaged families; 41.5% were classified as being at-risk; and 13.9% had limited English proficiency (PEIMS, 2010).

Table 4 shows teacher characteristics for the district in 2009-2010. At the time of the study, the majority (79.2%) of teachers in the district held a bachelors degree. In terms of years of experience, most teachers (29.8%) had between 1-5 years experience; however, 25.7% had between 11-20 years experience, and 22.1% had between 6-10 years of teaching experience. The overall teacher turnover rate of the district was 12.1%, which closely reflected the state average of 11.8%.

*Table 4*  
**District Teacher Characteristics – 2009-2010**

|                            | Percentage in district | Percentage in state |
|----------------------------|------------------------|---------------------|
| Highest degree held        |                        |                     |
| No degree                  | 0.4%                   | 0.8%                |
| Bachelors                  | 79.2%                  | 77.3%               |
| Masters                    | 20.0%                  | 21.3%               |
| Doctorate                  | 0.4%                   | 0.5%                |
| Years of Experience        |                        |                     |
| Beginning teachers         | 7.1%                   | 6.0%                |
| 1-5 years experience       | 29.8%                  | 31.0%               |
| 6-10 years experience      | 22.1%                  | 20.3%               |
| 11-20 years experience     | 25.7%                  | 24.4%               |
| Over 20 years experience   | 15.3%                  | 18.3%               |
| Turnover rate for teachers | 12.1%                  | 11.8%               |

*Note.* From 2009-2010 Texas Education Agency (TEA) Academic Excellence Indicator System (AEIS).

## **Participants**

Participants in the present study were 450 students and 91 classroom teachers from 18 (86%) of the district's 21 elementary schools (see Table 5). The distribution of grade-levels in the study was: 38% pre-kindergarten and kindergarten ( $n = 35$ ), 32.6% first-grade ( $n = 30$ ), and 29.3% second-grade ( $n = 27$ ). Class sizes ranged from 10 to 25 students, with a mean of 16.8 students. Of the 450 students, 240 were female (53.4%) and 210 (46.6%) were male. Table 5 displays the breakdown of student ethnicity in the study sample (52.8% Hispanic, 16.2% White, 18.8% African American, and 12.2%

Asian). All student participants were enrolled in pre-kindergarten or kindergarten ( $n = 177$ ) (pre-kindergarten and kindergarten classes were combined, due to the small sample size), first-grade ( $n = 139$ ), or second-grade ( $n = 134$ ). Of the 91 teachers who participated in the study, 90 were female and one was male.

*Table 5*  
**Ethnic Breakdown of Students by Grade-Level**

|                    | Pre-K/Kinder | First-grade | Second-grade | %<br>of sample |
|--------------------|--------------|-------------|--------------|----------------|
| African American   | 31           | 24          | 30           | 18.9%          |
| Asian              | 20           | 23          | 12           | 12.2%          |
| Hispanic           | 96           | 70          | 71           | 52.7%          |
| White              | 30           | 22          | 21           | 16.2%          |
| Totals ( $N=450$ ) | 177          | 139         | 134          |                |

*Note.* From 2009-2010 Texas Education Agency (TEA) Academic Excellence Indicator System (AEIS).

Table 6 shows the percentages of economically disadvantaged students and students who were classified as limited English proficient (LEP) at the 18 elementary schools in the sample. Ten of the 18 elementary schools had a higher percentage of economically disadvantaged students than the overall district average percentage (47.5%) of economically disadvantaged students. Seven of the 18 schools had the same or a lower percentage of LEP students than the overall district percentage (13.9%).



*Table 6*  
**Percentage of Economically Disadvantaged Students, LEP Students, and  
 Campus Achievement Rating by School**

| School                         | % Economically<br>disadvantaged<br>students | % LEP<br>students   | Campus<br>achievement rating |
|--------------------------------|---|---------------------|------------------------------|
| J                              | 3.2%  | 3.2%                | Exemplary                    |
| I                              | 4.8%  | 3.7%                | Exemplary                    |
| D                              | 7.6%  | 4.1%                | Exemplary                    |
| A                              | 24.6%                                       | 12.1%               | Exemplary                    |
| B                              | 28.5%                                       | 7.9%                | Exemplary                    |
| H                              | 29.3%                                       | 13.9%               | Exemplary                    |
| C                              | 32.0%                                       | 24.5%               | Exemplary                    |
| M                              | 32.5%                                       | 27.8%               | Exemplary                    |
| L                              | 52.8%                                       | 13.0%               | Exemplary                    |
| K                              | 60.1%                                       | 15.7%               | Exemplary                    |
| F                              | 76.1%                                       | 16.5%               | Exemplary                    |
| G                              | 77.3%                                       | 31.7%               | Exemplary                    |
| E                              | 80.3%                                       | 30.2%               | Exemplary                    |
| R                              | 80.5%                                       | 24.4%               | Exemplary                    |
| P                              | 81.5%                                       | 37.7%               | Recognized                   |
| Q                              | 92.1%                                       | 39.7%               | Recognized                   |
| N                              | 93.3%                                       | 42.6%               | Recognized                   |
| O                              | 94.5%                                       | 17.9%               | Recognized                   |
| <b><i>Overall District</i></b> | <b><i>47.5%</i></b>                         | <b><i>13.9%</i></b> | <b><i>Recognized</i></b>     |

*Note.* From 2009-2010 Academic Excellence Indicator System (AEIS).

The state in which data was collected for the current study annually assigns an overall campus achievement rating based on how the school collectively performed on the statewide standardized test of knowledge and skills. A campus receives an *Exemplary* rating (TEA, 2010a) if all students *and* each student group (African American, Hispanic, White, and economically disadvantaged) meet 90% standard for each subject area *or* students meet the standard with the *Texas Projection Measure*

(TPM)—a measure of how student performance at the end of a school year positions a student to meet the performance standard in the future projection year after receiving grade-level instruction (TEA, 2010b). A campus receives a *Recognized* rating (TEA, 2010a) if all students *and* each student group meets 80% standard for each subject area, *or* if all students meet 75% floor *and* required improvement, *or* if students meet standard with TPM. Of the elementary schools in the current study, 14 of the 18 were rated as *Exemplary*, and four were rated as *Recognized* (see Table 6). During the 2009-2010 school year, the school district, as a whole, was rated as *Recognized*.

### **Instruments**

Three observational instruments (see Appendices A, B, and C), based on best practices in primary classrooms as well as on previous classroom observation research (Waxman, 2003; Waxman & Padrón, 2004; Waxman, Tharp, & Hilberg, 2004), were modified for this study to include items related to early childhood student and teacher behaviors and practices. The *PK2 Student Behavior Observation Schedule*, adapted from the *Student Behavior Observation Schedule* (Waxman, Wang, Lindvall, & Anderson, 1988), was designed to systematically obtain information on students' classroom behaviors. The PK2 Student Behavior Observation Schedule served as an instrument for documenting student behaviors in the context of ongoing classroom instructional-learning processes. Individual students were observed with reference to: (a) setting in which behavior occurred; (b) whether the student was on- or off-task, waiting for the teacher, or distracted; (c) student's interactions with teachers or other students; (d) type

of activity on which student was working; (e) nature of student's interaction with others; and (f) whether student language used was English, Spanish, or other. Approximately five students, randomly selected and stratified by sex and ethnicity, were observed in each classroom for six to ten 30-second intervals during the 30-minute data collection periods.

The *PK2 Teacher Roles Observation Schedule* was used to systematically obtain information on teachers' classroom behaviors. Adapted from the *Teacher Roles Observation Schedule (TROS)* (Waxman, Wang, Lindvall, & Anderson, 1990), the systematic observation instrument was designed to document teacher behaviors in the context of ongoing classroom instructional-learning processes. Teachers were observed with reference to (a) interactions with students; (b) instructional setting in which observed behavior occurred; (c) whether instruction was of a direct, seatwork, or learner-centered orientation; (d) nature of interaction; (e) purpose of interaction; (f) instructional practices; and (g) language used. Each teacher was observed for six to ten 30-second intervals during the data collection periods.

The *PK2 Overall Classroom Observation Measure* was a high-inference instrument used to examine: (a) teachers' general instructional practices, (b) student behaviors and activities, and (c) classroom environment/arrangement observed in ECE classrooms visited. The PK2 Overall Classroom Observation Measure was adapted from the *Classroom Observation Measure (COM)* (Ross & Smith, 1996) and measured the extent to which certain effective instructional strategies were demonstrated during a class period. The COM, used in a number of studies, has been found to be reliable and valid

(Ross, Smith, Lohr, & McNelis, 1994; Ross, Troutman, Horgan, Maxwell, Laitinen, & Lowther, 1997). The PK2 Overall Classroom Observation Measure was used at the end of the class visitation to rate, on a 3-point scale (1=not at all, 2=some, 3=great), the extent to which certain instructional strategies were demonstrated during the class period.

Prior to initial observations, researchers were trained. The mean inter-rater reliabilities across all observers were: PK2 Student Behavior Observation Schedule,  $M = 0.98$ ; PK2 Teacher Roles Observation Schedule,  $M = 0.97$ ; and PK2 Overall Classroom Observation Measure,  $M = 0.91$ .

## **Procedures**

The research questions were investigated via the use of systematic classroom observation. Teachers were informed of the project by the school district, their principals, and via a workshop conducted at the district level. Arrangements were made to observe regular classroom instruction. Classes devoted to special activities (e. g., standardized tests, laboratory, etc.) were avoided. The research team that visited the campuses was trained in: research techniques, the necessary methodology for ensuring systematic data collection, and the necessary steps for validity and reliability in the observations. Prior to each campus visit, researchers were further instructed on the use of the specific observational protocols for the study in question. Researchers observed in each randomly selected classroom for approximately 40 minutes using the PK2 Student Behavior Observation Schedule and the PK2 Teacher Roles Observation Schedule. At

the end of each classroom observation, the PK2 Overall Classroom Observation Measure was completed.

### **Data Analysis**

In the present quantitative study, variables from observational data (demographics, type and purpose of instruction, student behaviors, etc.) were coded and electronically entered for analysis using Statistical Package for the Social Sciences (SPSS) software. Descriptive statistics were calculated and reported to answer questions about the types of activities in which young children were participating and to what extent teachers of students in pre-kindergarten and early elementary classrooms utilized child-centered instructional practices versus more didactic, direct-instructional approaches.

A factor analysis was conducted to group 21 student activity types into factors. The number of factors retained was determined by using eigenvalues greater than 1. A three-way Multivariate Analysis of Variance (MANOVA) was conducted to determine if significant differences ( $p < .05$ ) existed by student sex, student ethnicity, and grade-level among the new activity type extracted scales.

An additional factor analysis was conducted to group 31 teacher instructional practices into factors. The number of factors retained was determined using eigenvalues greater than 1. A follow-up one-way MANOVA was conducted to explore whether or not there were significant ( $p < .05$ ) differences by grade-level on teacher instructional behaviors.

Furthermore, a two-way MANOVA was conducted to investigate whether there were significant ( $p < .05$ ) differences by the percentage of economically disadvantaged and LEP students on instructional orientation (e.g., direct instruction, learner-centered instruction, seatwork). Schools were coded based on their percentages of economically disadvantaged students (1= $< 30\%$ ; 2= $31-79\%$ ; 3= $> 80\%$ ) and their percentages of LEP students (1= $<10\%$ ; 2= $10-20\%$ ; 3= $21\%$ ). Post-hoc tests were performed to further examine significant main effects and possible interactions.

Finally, the extent to which activity structures (e.g., whole class, small group, dyads, individual) and teacher behaviors impacted students' academic engagement was analyzed via multiple regression analyses. These procedures were used to examine the effects of classroom instruction and activity structures on students' academic engagement.

## CHAPTER IV

### RESULTS

This chapter reports the results for each of the six research questions posed in the current study. The purpose of this study was to observe pre-kindergarten through second-grade public school classrooms, specifically noting child-centered and teacher-directed pedagogical approaches by simultaneously examining: student behavior and activity structure; teacher instructional orientation and rationale; and overall classroom environment. Additionally, the current study examined classroom instruction and its subsequent effect on student engagement and educational quality. Findings are grouped into four separate results sections, as related to: (a) student activity types, (b) teacher instructional practices, (c) instructional differences by school characteristics, and (d) teacher instructional impact on student engagement.

#### **Results Related to Student Activity Types**

Two research questions addressed the activities in which young children are participating within early childhood classrooms. Question one considered the types of activities, while question two considered differences in activities, based on student sex, ethnicity, and grade-level. The results of both questions are discussed in this section.

*Research question one.* The first research question was answered using data collected from the PK2 Student Behavior Observation Schedule. The two most frequently viewed student activity types were *listening/watching* (38.8%) and *written*

*assignment* (27.3%), with the 450 students observed having participated in these behaviors 43% of the observation time (see Table 7). With the exception of *miscellaneous activity* (e.g., approaching the teacher, putting away supplies, etc.) (15.7%), none of the remaining 18 activities (generally learner-centered) were observed more than 9.8% of the time. Nine of the activities were seen less than 1% of the total classroom observation time. Since multiple student activity types could be observed during an observation period, the percentages do not sum to 100%. Standard deviations for student behaviors were high, suggesting a great deal of variation (from classroom to classroom) in the observed frequency of the various student activities.

*Research question two.* The second research question asked whether there were significant differences ( $p < .05$ ) in activity types by student sex, student ethnicity, and grade-level. Differences were analyzed using data collected from the PK2 Student Behavior Observation Schedule. First, a factor analysis (using a Varimax rotation) was conducted in order to determine whether the 21 student activity types could be grouped into factors. The factor analysis revealed ten factors with eigenvalues greater than 1.00, accounting for 62.49% of the variance. Consequently, I examined each of the 21 activity types in a three-way MANOVA to determine whether there were any statistically significant differences ( $p < .05$ ) by student sex, ethnicity, and grade-level. No statistically significant differences in activity type by student sex, student ethnicity, and grade-level were found (see Table 8).



*Table 7*  
**Mean Percentage Values of Student Activity Types (n=450)**

| Activity   | Mean percentage | <i>SD</i> |
|--|-----------------|-----------|
| Listening/watching                                 | 38.8%           | 38.0      |
| Written assignment                                 | 27.3%           | 35.2      |
| Miscellaneous activity                             | 15.7%           | 39.4      |
| Distracted   | 9.8%            | 23.6      |
| Reading  | 8.9%            | 23.1      |
| Answering a teacher-posed question                 | 7.2%            | 16.9      |
| Working kinesthetically                            | 7.1%            | 19.4      |
| No activity/transition                             | 5.9%            | 14.1      |
| Learning centers                                   | 4.8%            | 18.5      |
| Discussing   | 4.8%            | 15.2      |
| Assessment   | 3.4%            | 14.6      |
| Working with concrete/authentic learning materials | 3.3%            | 13.7      |
| Answering a peer-posed question                    | 1.2%            | 8.1       |
| Playing – game with rules                          | 0.9%            | 7.2       |
| Playing – dramatic play                            | 0.7%            | 7.0       |
| Tutoring   | 0.7%            | 6.0       |
| Questioning  | 0.6%            | 4.9       |
| Playing – constructive                             | 0.6%            | 4.7       |
| Acting out (behavior)                              | 0.5%            | 4.8       |
| Presenting   | 0.3%            | 3.2       |
| Free exploration/inquiry                           | 0.1%            | 2.4       |

*Source.* PK2 Student Behavior Observation Schedule.

*Table 8*  
**Summary Statistics for MANOVA Results for Activity Type by  
 Student Sex, Grade-Level, and Ethnicity**

| Effect                          | Wilks' lambda | <i>F</i> | <i>df</i> | <i>p</i> |
|---------------------------------|---------------|----------|-----------|----------|
| Student sex                     | .882          | 1.296    | 1, 203    | .181     |
| Student ethnicity               | .772          | .874     | 3, 607    | .743     |
| Grade-level                     | .808          | 1.090    | 2, 406    | .330     |
| Sex by ethnicity                | .804          | .731     | 3, 607    | .940     |
| Sex by grade-level              | .856          | .782     | 2, 406    | .835     |
| Grade-level by ethnicity        | .550          | 1.022    | 6, 1185   | .421     |
| Sex by ethnicity by grade-level | .561          | .987     | 6, 1185   | .525     |

### **Results Related to Teacher Instructional Practices**

Two research questions dealt with teacher instructional practices in early childhood classrooms. Data collected using the PK2 Teacher Roles Observation Schedule were analyzed in order to answer these questions. The first instructional practices question considered the extent to which teachers of students in pre-kindergarten and early elementary classrooms are utilizing child-centered instructional practices versus more didactic, direct-instructional approaches. Mean percentage values of classroom activity structure (e.g., whole class, small group, etc.), instructional orientation (e.g., direct instruction, seatwork, etc.), and the frequency of instructional practices are reported. The second instructional practices question asked whether or not there are differences by grade-level in teacher instructional behaviors. This section describes the findings related to both questions.

*Research question three.* Table 9 shows the mean percentage values of six observed activity structures, as observed using the PK2 Teacher Roles Observation Schedule. The majority (57.2%) of teachers utilized *whole class* instruction during the

observation periods. The remaining five categories of activity structure were each observed less than 18% of the time: *small group* instruction was used 17.8% of the time; *individual* instruction was used 14.8% of the time; *teacher traveling among students* (e.g., monitoring, checking students' work) was seen 6.2% of the time, and *dyads* (groups of two students) were observed 3.2% of the classroom observation time. Standard deviations for classroom activity structure were high, suggesting a great deal of variation (from classroom to classroom) in the observed frequency of the various structures.

*Table 9*  
**Mean Percentage Values of Classroom Activity Structure (n=92)**

| Activity structure       | Mean percentage | SD   |
|--------------------------|-----------------|------|
| Whole class              | 57.2%           | 42.9 |
| Small group              | 17.8%           | 36.1 |
| Individual               | 14.8%           | 29.2 |
| Traveling among students | 6.2%            | 16.1 |
| Dyads                    | 3.2%            | 14.3 |
| Other                    | 1.1%            | 10.4 |

*Source.* PK2 Overall Classroom Observation Measure.

Table 10 shows four types of instructional orientations (*direct instruction*, *learner-centered instruction*, *seatwork*, *other*) observed in the 92 pre-k, kindergarten, first-grade, and second-grade classrooms observed—again, using the PK2 Teacher Roles Observation Schedule—in this study. *Direct instruction* (55.2%) was observed at a much greater rate than the other three categories of instructional orientation; with *seatwork* being observed 11.2% of the time, and *learner-centered instruction* observed 7.3% of the time. Observers rated the instructional orientation as “other” (13.2%) in those

instances where teachers were assessing, transitioning, or engaging in other non-instructional activities. Standard deviations for instructional orientation types were high, suggesting a great deal of variation (from classroom to classroom) in the observed frequency of instructional orientation type.

*Table 10*  
**Mean Percentage Values of Instructional Orientation Types (n=92)**

| Instructional orientation    | Mean percentage | <i>SD</i> |
|------------------------------|-----------------|-----------|
| Direct instruction           | 55.2%           | 39.1      |
| Other                        | 13.2%           | 27.6      |
| Seatwork                     | 11.2%           | 26.5      |
| Learner-centered instruction | 7.3%            | 20.3      |

*Source.* PK2 Overall Classroom Observation Measure.

Table 11 shows mean percentage values of 20 observed teacher *purpose of interaction* behaviors, as measured by the PK2 Teacher Roles Observation Schedule. Since multiple purposes could be observed during an observation period, the percentages do not sum to 100%. *Focus on content* was the most frequently observed (58.8%) teacher purpose of interaction, with *focus on process* (36.1%) and *focus on product* (29.8%) occurring with the second and third highest frequencies. Additionally, of the 20 behaviors included on the teacher observation instrument, only two additional behaviors (*praise student performance* and *correct student behavior*) were observed at a rate greater than 10% (15.7% and 15.6%, respectively). The remaining 15 behaviors (e.g., redirecting student thinking, encouraging extended student responses, encouraging

student questioning, encouraging students to help each other, connecting content to other disciplines, etc.) were observed less than 7% of the time.

Table 11

**Mean Percentage Values of Teacher Purpose of Interaction (n=91)**

| Purpose of interaction                | Mean percentage | SD   |
|---------------------------------------|-----------------|------|
| Focus on content                      | 58.8%           | 36.5 |
| Focus on process                      | 36.1%           | 36.5 |
| Focus on product                      | 29.8%           | 36.8 |
| Praise student performance            | 15.7%           | 22.3 |
| Correct student behavior              | 15.6%           | 22.3 |
| Assessment                            | 6.5%            | 19.9 |
| Correct student performance           | 5.0%            | 12.5 |
| Praise student behavior               | 4.9%            | 11.9 |
| Redirect student thinking             | 4.4%            | 11.7 |
| Encourage extended student responses  | 3.0%            | 9.0  |
| Encourage students to succeed         | 3.0%            | 10.0 |
| Other                                 | 2.6%            | 10.0 |
| Show personal regard for student      | 1.5%            | 7.1  |
| Encourage student self management     | 1.2%            | 6.2  |
| Present multiple perspectives         | 1.2%            | 7.5  |
| Encourage student questioning         | 1.1%            | 5.7  |
| Show interest in student work         | 1.1%            | 5.2  |
| Encourage students to help each other | 1.0%            | 4.1  |
| Connect content to other disciplines  | 0.6%            | 3.5  |
| Connect content to global communities | 0.5%            | 3.9  |

Source. PK2 Teacher Roles Observation Schedule.

Table 12 shows mean percentage values of six observed instructional practices of 92 teachers, per the PK2 Teacher Roles Observation Schedule. Two practices—*using technology to present material* (11.7%) and *provides opportunities for students to sing/listen to/move to music* (11.2%) were observed with the highest frequency.

*Teachers interacted with students during their play* was only observed 1.4% of the time. Three key ECE instructional best practices—learner-centered practices that NAEYC and other child development specialists would characterize as essential in any quality early childhood classroom—were observed less than 1% of the observed instructional time: *facilitates opportunities for students to play* (0.9%), *observes and documents students’ play for assessment purposes* (0.5%), and *allocates extended periods for students to engage in play* (0.4%). Standard deviations for instructional practices were high, suggesting a great deal of variation (from classroom to classroom) in the observed frequency of the various instructional practices.

*Table 12*  
**Mean Percentage Values of Instructional Practices (n=92)**

| Instructional practice  | Mean percentage | <i>SD</i> |
|---|-----------------|-----------|
| Uses technology to present material                                 | 11.7%           | 24.2      |
| Provides opportunities for students to sing/listen to/move to music | 11.2%           | 11.7      |
| Interacts with students during their play                           | 1.4%            | 10.7      |
| Facilitates opportunities for students to play                      | 0.9%            | 5.3       |
| Observes and documents students’ play for assessment purposes       | 0.5%            | 5.2       |
| Allocates extended periods of time for students to engage in play   | 0.4%            | 3.5       |

*Source.* PK2 Teacher Roles Observation Schedule.

*Research question four.* The second question addressing instructional practices asked whether or not there are differences by grade-level in teacher instructional behaviors. First, a factor analysis (using a Varimax rotation) was conducted in order to

group 31 teacher instructional practices (observed with the PK2 Teacher Roles Observation Schedule) into factors. The factor analysis revealed 12 factors with eigenvalues greater than 1.00, accounting for 74.45% of the variance. Next a one-way MANOVA was run to see if there were any statistically significant differences ( $p < .05$ ) by grade-level on teachers' instructional behaviors. No statistically significant differences by grade-level on teachers' instructional behaviors were found (see Table 13).

*Table 13*  
**Summary Statistics for MANOVA Results for  
 Instructional Practices by Grade-Level**

| Effect      | Wilks' lambda | <i>F</i> | <i>df</i> | <i>p</i> |
|-------------|---------------|----------|-----------|----------|
| Grade-level | .028          | 32.151   | 2, 47     | .522     |

Additionally, the high-inference PK2 Overall Classroom Observation Measure was completed at the end of each classroom observation and was used to analyze differences by grade-level. Regarding the overall teacher instructional variables related to ECE developmentally appropriate practices, observed behaviors were rated on a 3-point scale (1=not observed at all, 2=observed once or twice, 3=observed three or more times). Table 14 shows the mean values of the eight instructional variables. On average, none of the eight practices were observed to a great extent. The practices observed with the greatest frequency (though still only falling in the “not observed at all” to “observed once or twice” range) were: *Teacher actively facilitated students' engagement in activities and lessons to encourage participation* ( $M=1.8\%$ ) and *Teacher asked many*

*open-ended questions* ( $M=1.7\%$ ). The two instructional practices observed with the least frequency (just above the “not observed at all” grouping) were: *Teacher provided opportunities for students to be creative and/or generate their own ideas and/or products* ( $M=1.3\%$ ); and *Teacher provided students opportunities for problem solving* ( $M=1.3\%$ ). Standard deviations for ECE developmentally appropriate instructional practices were high, suggesting a great deal of variation (from classroom to classroom) in the observed frequency of practices.

*Table 14*  
**Mean Percentage Values of ECE Developmentally  
Appropriate Instructional Practices ( $n=92$ )**

| Instructional practice   | Mean | <i>SD</i> |
|--|------|-----------|
| Teacher actively facilitated students' engagement in activities and lessons to encourage participation     | 1.8  | .66       |
| Teacher asked many open-ended questions  | 1.7  | .64       |
| Teacher used a variety of modalities including auditory, visual, and movement                              | 1.6  | .67       |
| Teachers allowed students to develop concepts or procedures  | 1.5  | .69       |
| Teacher provided opportunities for students to assume responsibility by initiating classroom activities    | 1.4  | .60       |
| Teacher related concepts to students' lives  | 1.4  | .61       |
| Teacher provided opportunities for students to be creative and/or generate their own ideas and/or products | 1.3  | .60       |
| Teacher provided students opportunities for problem solving  | 1.3  | .50       |

*Source.* PK2 Overall Classroom Observation Measure.

*Note.* 3-point scale (1=not observed at all, 2=observed once or twice, 3=observed three or more times).

Additionally, a one-way MANOVA was run to see if there were statistically significant differences ( $p < .05$ ) by grade-level on ECE developmentally appropriate



instructional practices. No statistically significant differences by grade-level on ECE developmentally appropriate instructional practices were found (see Table 15).

*Table 15*

**Summary Statistics for MANOVA Results for ECE Developmentally Appropriate Instructional Practices by Grade-Level**

| Effect      | Wilks' lambda | <i>F</i> | <i>df</i> | <i>p</i> |
|-------------|---------------|----------|-----------|----------|
| Grade-level | .862          | .911     | 2, 166    | .548     |

**Results Related to Instructional Differences by School Characteristics**

*Research question five.* This question dealt with the effect of school characteristics, such as percentage of economically disadvantaged students and percentage of LEP students, on ECE instruction, as measured by instructional orientation (e.g., direct instruction, learner-centered instruction, and seatwork). Crosstabs were run, and due to empty data cells, a two-way MANOVA examining instructional orientation (e.g., direct instruction, learner-centered instruction, seatwork) by percentage of LEP students and percentage of economically disadvantaged students was not conducted. Two separate one-way MANOVAS were subsequently run, analyzing instructional orientation by percentage of LEP students and instructional orientation by percentage of economically disadvantaged students. No statistically significant differences ( $p < .05$ ) by percentage of LEP students on teacher instructional behavior (see Table 16) and by percentage of economically disadvantaged students on teacher instructional behavior were found (see Table 17).

Table 16

**Summary Statistics for MANOVA Results for Instructional Orientation  
by Percentage LEP Students**

| Effect                  | Wilks' lambda | <i>F</i> | <i>df</i> | <i>p</i> |
|-------------------------|---------------|----------|-----------|----------|
| Percentage LEP students | .973          | .291     | 2, 170    | .968     |

Table 17

**Summary Statistics for MANOVA Results for Instructional Orientation by  
Percentage Economically Disadvantaged Students**

| Effect   | Wilks' lambda | <i>F</i> | <i>df</i> | <i>p</i> |
|--|---------------|----------|-----------|----------|
| Percentage economically disadvantaged students | .884          | 1.348    | 2, 170    | .223     |

### **Results Related to Teacher Instructional Impact on Student Engagement**

*Research question six.* The final question dealt with whether or not learner-centered instruction versus direct instruction impacts students' academic engagement (e.g., on-task versus off-task behaviors). Two setwise multiple regressions were used to examine the effect of activity structure on on-task and off-task student behavior. Regarding on-task behavior, a significant model emerged ( $F_{5, 444}=2468.77, p<.003$ ). Activity structure accounted for 4% of the variance in on-task student behavior. Regarding off-task behavior, a significant model also emerged ( $F_{5, 444}=1330.14, p<.035$ ). Activity structure accounted for 3% of the variance in off-task student behavior.

While these two models were significant, they accounted for an extremely small percentage of the variance; therefore, a composite score for ECE developmentally appropriate instructional practices (DAIP) was calculated in order to analyze its affect on student engagement. Using eight developmentally appropriate teacher behaviors, as

observed using the high-inference PK2 Overall Classroom Observation Measure instrument, a new variable (DAIP [developmentally appropriate instructional practice] score) was created, which averaged the eight developmentally appropriate behaviors listed in Table 14. Two categories emerged: lower DAIP ( $M \leq 2$ ) and higher DAIP ( $M > 2$ ). Each teacher received a calculated DAIP score, and students were matched with their teachers.

A four-way MANOVA was conducted, analyzing student engagement by DAIP score, student sex, student ethnicity, and grade-level. MANOVA results revealed a statistically significant difference ( $p < .05$ ) on student engagement by DAIP score (*Wilks' lambda*=.968,  $F(1,402)=6.72$ ,  $p=.001$ ).

The MANOVA did not reveal any statistically significant interactions or significant differences on student engagement by student sex, student ethnicity, and grade-level. In the follow-up MANOVA (see Table 18), on-task and off-task behavior was statistically significant for higher DAIP and lower DAIP scores. The effect size of student on-task behavior ( $\eta_p^2 = .032$ ), as well as the effect size of student off-task behavior ( $\eta_p^2 = .021$ ) indicate a small effect between student engagement and DAIP score. Students taught by teachers with a higher DAIP score were more likely to be on-task and less likely to be off-task.

*Table 18*  
**Summary Statistics for MANOVA Results for Student Engagement by  
 Teacher Developmentally Appropriate Instructional Practices (DAIP) Score**

| Effect   | DAIP score |          |           |          |           |       |          |            |
|----------|------------|----------|-----------|----------|-----------|-------|----------|------------|
|          | Higher     |          | Lower     |          | Overall   |       | <i>p</i> | $\eta_p^2$ |
| <i>M</i> | <i>SD</i>  | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> |       |          |            |
| On-task  | 96.10      | 13.65    | 81.45     | 27.30    | 83.60     | 26.23 | .000     | .032       |
| Off-task | 3.53       | 11.88    | 13.74     | 24.77    | 12.24     | 23.60 | .003     | .021       |

Since research question two revealed no statistically significant differences in student activity type by student characteristics (sex, ethnicity, and grade-level), the newly-created DAIP score variable was used to examine whether there were differences in the 21 student activity types by teacher's DAIP score. A one-way MANOVA was conducted on student activity type by DAIP score. MANOVA results revealed a statistically significant difference ( $p < .05$ ) on student activity type by DAIP score (*Wilks' lambda*=.805,  $F(1,225)=2.60$ ,  $p=.000$ ). Table 19 shows the results.

In the follow-up MANOVA, student activity type was statistically significant for higher DAIP and lower DAIP scores. The effect size of student activity type ( $\eta_p^2 = .195$ ) indicates a medium effect between student activity type and DAIP score. Students taught by teachers with a higher DAIP score were significantly more likely to be working kinesthetically, answering teacher-posed questions, and freely exploring. Conversely, students taught by teachers with a lower DAIP score were significantly more likely to be distracted and/or not engaging in activity/transitioning.

*Table 19*  
**Summary Statistics for MANOVA Results for Student Activity Type by  
 Teacher Developmentally Appropriate Instructional Practices (DAIP) Score**

| Effect                   | DAIP score |           |          |           |          |           | <i>p</i> | $\eta_p^2$ |
|--------------------------|------------|-----------|----------|-----------|----------|-----------|----------|------------|
|                          | Higher     |           | Lower    |           | Overall  |           |          |            |
|                          | <i>M</i>   | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> |          |            |
| Written assignment       | 35.23      | 42.15     | 28.91    | 37.51     | 30.00    | 38.33     |          |            |
| Assessment               | 3.57       | 13.03     | 3.35     | 14.96     | 3.39     | 14.62     |          |            |
| Discussing               | 4.36       | 16.89     | 3.81     | 15.27     | 3.91     | 15.52     |          |            |
| Reading                  | 3.17       | 16.14     | 8.11     | 22.54     | 7.27     | 21.64     |          |            |
| Tutoring                 | 0.00       | 0.00      | 0.90     | 6.51      | 0.75     | 5.94      |          |            |
| Working kinesthetically  | 17.70      | 30.17     | 5.15     | 16.03     | 7.29     | 19.68     | .000     | .058       |
| Answering teacher quest. | 14.92      | 28.10     | 5.94     | 15.74     | 7.47     | 18.67     | .004     | .033       |
| Answering peer quest.    | 0.00       | 0.00      | 1.37     | 9.74      | 1.13     | 8.89      |          |            |
| Questioning              | 0.00       | 0.00      | 0.75     | 5.84      | 0.62     | 5.32      |          |            |
| Presenting               | 0.00       | 0.00      | 0.42     | 3.56      | 0.35     | 3.24      |          |            |
| Learning centers         | 4.76       | 21.55     | 2.52     | 13.60     | 2.90     | 15.22     |          |            |
| Constructive play        | 0.00       | 0.00      | 0.73     | 5.73      | 0.61     | 5.23      |          |            |
| Dramatic play            | 0.00       | 0.00      | 1.32     | 9.84      | 1.09     | 8.97      |          |            |
| Games with rules         | 1.19       | 7.72      | 1.31     | 9.55      | 1.29     | 9.25      |          |            |
| Free exploration         | 1.19       | 7.72      | 0.00     | 0.00      | 0.20     | 3.18      | .027     | .020       |
| Concrete lng. materials  | 8.81       | 17.97     | 3.58     | 15.92     | 4.47     | 16.37     |          |            |
| Listening/watching       | 37.74      | 39.88     | 37.41    | 39.88     | 37.47    | 39.29     |          |            |
| Distracted               | 1.98       | 9.16      | 11.47    | 25.28     | 9.86     | 23.60     | .017     | .023       |
| Acting out               | 0.00       | 0.00      | 0.59     | 5.22      | 0.49     | 4.76      |          |            |
| No activity/transition   | 0.00       | 0.00      | 4.23     | 11.07     | 3.51     | 10.20     | .014     | .024       |
| Other activity           | 10.00      | 24.11     | 16.88    | 52.01     | 15.71    | 48.44     |          |            |

## Summary

In summary, results from the current study were broken-down into four separate categories: (a) student activity types, (b) teacher instructional practices, (c) instructional differences by school characteristics, and (d) teacher instructional impact on student

engagement. Regarding student activity types, the two most frequently viewed student activity types were *listening/watching* and working on a *written assignment*. With the exception of *miscellaneous activity*, none of the remaining 18 activities (generally learner-centered) were observed more than 9.8% of the time. Nine of the activities were seen less than 1% of the total classroom observation time. Furthermore, no statistically significant differences in activity type by student sex, student ethnicity, and grade-level were found.

In terms of teacher instructional practices, the majority (57.2%) of teachers utilized *whole class* instruction during the observation periods. The remaining five categories of activity structure were each observed less than 18% of the time: *small group* instruction was used 17.8% of the time; *individual* instruction was used 14.8% of the time; *teacher traveling among students* (e.g., monitoring, checking students' work) was seen 6.2% of the time, and *dyads* (groups of two students) were observed 3.2% of the classroom observation time. *Direct instruction* (55.2%) was observed at a much greater rate than the other three categories of instructional orientation; with *seatwork* being observed 11.2% of the time, and *learner-centered instruction* observed 7.3% of the time.

The purposes of teachers' interactions were also examined. *Focus on content* was the most frequently observed (58.8%) teacher purpose of interaction, with *focus on process* (36.1%) and *focus on product* (29.8%) occurring with the second and third highest frequencies. Of the 20 behaviors included on the teacher observation instrument, only two additional behaviors (*praise student performance* and *correct student behavior*)

were observed at a rate greater than 10% (15.7% and 15.6%, respectively). The remaining 15 behaviors were observed less than 7% of the time. *Teachers interacted with students during their play* was only observed 1.4% of the time. Three key best instructional practices in ECE were observed less than 1% of the observed time: *facilitates opportunities for students to play* (0.9%), *observes and documents students' play for assessment purposes* (0.5%), and *allocates extended periods for students to engage in play* (0.4%). No statistically significant differences by grade-level on teachers' instructional behaviors were found.

Regarding the overall teacher instructional variables related to ECE developmentally appropriate practices, on average, none of the practices were observed to a great extent. The practices observed with the greatest frequency (though still only falling in the “not observed at all” to “observed once or twice” range) were: *Teacher actively facilitated students' engagement in activities and lessons to encourage participation* and *Teacher asked many open-ended questions*. The two instructional practices observed with the least frequency (just above the “not observed at all” grouping) were: *Teacher provided opportunities for students to be creative and/or generate their own ideas and/or products*; and *Teacher provided students opportunities for problem solving*. No statistically significant differences by grade-level on ECE developmentally appropriate instructional practices were found.

Instructional differences by school were also examined. No statistically significant differences by percentage of LEP students on teacher instructional behavior

were found. Furthermore, no statistically significant differences by percentage of economically disadvantaged students on teacher instructional behavior were found.

Lastly, the effect of teacher instructional impact on student engagement was examined. No statistically significant interactions or significant differences on student engagement by student sex, student ethnicity, and grade-level were found; however, students taught by teachers with a higher DAIP score were more likely to be on-task and less likely to be off-task. Also, students taught by teachers with a higher DAIP score were significantly more likely to be working kinesthetically, answering teacher-posed questions, and freely exploring. Conversely, students taught by teachers with a lower DAIP score were significantly more likely to be distracted and/or not engaging in activity/transitioning.



## CHAPTER V

### DISCUSSION, IMPLICATIONS, AND CONCLUSION

This chapter is divided into five sections. The first section discusses the research findings related to student activity types, teacher instructional practices, and teacher instructional impact on student engagement. The second section addresses implications for research literature. The third section looks at implications for practice. The fourth section offers implications for future research. And the fifth presents conclusions.

#### **Discussion of Findings**

*Student activity types.* The study sample included 450 pre-kindergarten, kindergarten, first-grade, and second-grade students in a large public school district. While the sample was ethnically diverse (52.7% Hispanic, 18.9% African American, 16.2% White, 12.2% Asian) the types of activities in which the students were engaged was startlingly uniform. Across student sex, ethnicity, and grade-level, in the 91 observed ECE classrooms, the student activities observed with the greatest frequency were *listening/watching* and working on *written assignments*. Of the 18 possible learner-centered student activities analyzed in the current study, none occurred at a rate greater than 9.8% of the time. Perhaps most disturbing is the fact that play-based learning activities, such as dramatic play, games with rules, and constructive play, occurred less than 1% of the total classroom observation time. Rather than allowing children to collaboratively negotiate their own thoughts and meanings about learning concepts,

several teachers in the current study were overheard making comments such as, “Listen!” “Sit down!” “Shh!” In one pre-k classroom observed in the current study, for example, when a student appeared to ask a peer for clarification, the observer noted the teacher’s response as, “No talking!” as the entire class sat quietly at tables, practicing written letter formation. Activity types that encouraged student cooperation and social learning (e.g., working in learning centers, discussing, working with concrete/authentic learning materials, answering a peer-posed questions, playing [games with rules, constructive play, dramatic play], and questioning) were rare. Even in those few cases where learning centers were utilized, researchers—via the use of field notes—made observations such as: “Students were working in centers; but they were entirely teacher-directed with scripted instructions.”

When examining student activity type as a function of teacher’s use of developmentally appropriate instructional practices, students taught by teachers who most frequently displayed DAP instruction were more likely to be working kinesthetically, answering teacher-posed questions, and freely exploring. On the contrary, students taught by teachers who utilized DAP instruction the least were more likely to be distracted and/or not engaging in any activity/transitioning. This finding is particularly interesting considering that one of the purposes of the current study was to concurrently examine student activity types and teacher instruction. While most of the statistical analyses revealed no significant differences, one of the two that did indeed show significance linked a higher level of teacher DAP with several student activities typically associated with positive ECE teaching practices. Conversely, students who

were distracted and/or inactive were linked to teachers who showed lower levels of developmentally appropriate instructional practice.

*Teacher instructional practices.* Despite research that supports the critical impact of learner-centered instruction in the early years, the majority of early childhood teachers from 18 different elementary schools consistently utilized whole class, didactic, teacher-centered instructional practices in their classrooms—regardless of the sex and/or ethnic make-up of their students. The following field notes (recorded by a researcher in a first-grade classroom) from the current study were typical:

*Throughout the entire observation time, students were seated at desks, watching the teacher point-out parts of a hundreds chart. Little to no feedback/interaction. The students make written responses to closed-ended questions, based on test-type concepts (basic skills, drill), rather than inquiry/exploration.*

Prior studies have revealed variation in teacher practices across grade-levels (Vartuli, 1999). Teachers' developmentally appropriate ECE beliefs tended to decrease as grade-level increased from kindergarten to third-grade. Instructional practices observed in the current study were relatively constant. Furthermore, notwithstanding prior studies finding didactic teaching to be the virtual norm in classrooms with a higher proportion of African American students, and constructivist, more learner-centered approaches towards teaching to be common in classrooms with a higher proportion of White children, results from the current study show that teacher instructional practices did not vary by the ethnic composition of students in the class. Moreover, no instructional differences by student sex were observed.

A focus on content, progress, and product were the key purposes for teachers' interactions with their students. A large percentage of different instructional purposes were rarely observed. That is to say, the vast majority of teachers passed the time with their students in the same manner, for the same reasons. There were no instructional differences by grade-level or by school characteristics (percentage of LEP and/or percentage of economically disadvantaged students). The two instructional practices observed the least were: teacher provided opportunities for students to be creative and/or generate their own ideas and/or products, and teacher provided students opportunities for problem solving.

*Teacher instructional impact on student engagement.* Prior research showed that girls tend to be more engaged in instructional activity than boys (Finn & Pannozzo, 2004; Marks, 2000); however, findings from the current study did not arrive at the same conclusion: No sex, ethnicity, and/or grade-level differences in student engagement were noted—a finding that could be attributable to the fact that instruction was so generally standardized. While most of the students appeared to be on-task, engagement typically occurred in the form of listening and watching or working on a written assignment. The findings did reveal, however, that those students who were taught by teachers with a higher overall use of ECE-specific developmentally appropriate instructional practices score were more likely to be on-task and less likely to be off-task. In other words, students whose teachers utilized developmentally appropriate instructional practices were more engaged than those students whose teachers used fewer DAPs. Furthermore,

students taught by teachers with a lower DAIP score were significantly more likely to be distracted and/or not engaging in activity or transitioning.

Such findings related to the uniformity of instruction are hardly surprising when one considers that the state in which the current study occurred has had a standardized, statewide, student assessment program in place for over 25 years (TEA, 2010c). The academic accountability system in Texas demands that, in order to receive an *exemplary* campus rating, all students, regardless of ethnicity, must reach a certain level of [standardized test] proficiency. The findings from the present study, as well as those from other studies, suggest that all students are being taught in the same way—one in which reaching a designated standardized test score appears to be the singular objective; in other words, we may have finally reached the point where uniform accountability procedures have been in place long enough that the seemingly homogenous results from the current study could arguably be the feasible outcome.

### **Implications for Research Literature**

The following section discusses the current study's implications for research in the field. It is worth noting that the overall findings from the current study contribute to previously published studies regarding classroom observation, ECE teacher practices, and student engagement (see Tables 1, 2, and 3 in Chapter II); however, several differences in the current study distinguish it from previously published studies.

In an observation study of pre-kindergarten classrooms, Pianta and colleagues (2005) examined the extent to which teacher attributes predicted observed classroom

quality. Stipek (2004) also assessed the nature of instruction in kindergarten and first-grade classrooms, examining the variable of student ethnicity. Findings from the Pianta, et al. study revealed that classrooms with at least 60% low-income children were rated lower in quality and offered less time in free-choice center-type activities; likewise, Stipek's results indicated that the quality of classroom instruction was associated with the demographics of the student body.

Findings from the current study differed from those of both the previous studies, with no statistically significant differences found in classroom instruction by percentage of students from economically disadvantaged families or by student ethnicity. Stipek's (2004) findings also indicated that schools serving relatively high percentages of lower-income children and children of color emphasized more basic skills and engaged in more didactic teaching, and constructivist teaching was higher in classrooms with a higher percentage of Caucasian students. Notwithstanding prior findings that support the notion of didactic teaching as the norm in classrooms with a higher proportion of African American students and constructivist, more learner-centered approaches being more prevalent in classrooms with a higher proportion of Caucasian children, results from the current study show that ethnicity was not a statistically significant factor in teacher's instructional practices.

Pianta, La Paro, Payne, Cox, and Bradley (2002) observed kindergarten classrooms and classroom activities, examining the impact of classroom quality on student outcomes. Somewhat differently, the current study looked at the affect of instructional practices on student engagement. Both studies, however, found that the

most frequently observed forms of classroom activity were structured teacher-directed activity and whole-group instruction.

In a study of first-grade classrooms, Stuhlman and Pianta (2009) described four types of classrooms; and, similar to the current study, classroom quality was examined. Stuhlman and Pianta's study, however, found a greater percentage of classrooms that would be considered "high overall quality" than did the current study. Perhaps more salient to literature implications, the ethnic makeup in the 2009 study was 75% Caucasian, 12% African American, 4% Asian, and 4% Hispanic—a much lower concentration of ethnic minorities than was the current study's student ethnic makeup.

Similar to the current study, Lo-Casale-Crouch and colleagues (2007) observed classroom quality by examining teacher behavior. But while the Lo-Casale-Crouch study examined teachers' emotional behaviors and interactions with their students, the current study looked at instructional practices. LoCasale-Crouch, et al. found no significant associations between teacher and program. And while the current study looked at possible associations between teacher and student (as opposed to program), findings did show differences in student DAP activity type, as well as by level of engagement (on-task versus off-task behavior), resultant of teachers' developmentally appropriate instructional practices.

This same relationship (better teacher quality and students' increased on-task behavior) was also the result of Pianta, La Paro, Payne, Cox, and Bradley (2002). Like the current study, classroom observation was used to observe classroom quality and its relation to teacher and child outcomes. Similar to the Pianta et al. (2002) study, the

current study found evidence linking students' on-task behaviors to higher classroom quality; however, unlike the Pianta et al. (2002) study, child-centered environments in the current study were no less prevalent in higher-poverty schools than they were in lower-poverty environments.

Vartuli (1999) examined variations in the reported beliefs and observed instructional practices of Head Start, kindergarten, first-, second-, and third-grade teachers. Vartuli found that teacher practices varied across and within grade-levels. Specifically, teachers' developmentally appropriate ECE beliefs and practices tended to decrease as grade-level increased from kindergarten to third-grade. Contrary to findings in the prior study, instructional practices observed in the current study remained relatively constant across grade-level.

Chien, et al. (2010) described patterns of children's engagement in pre-kindergarten classrooms by grouping children into profiles. Although the current study considered student engagement, no profiles were created, and no attempt was made to link student engagement to gains in school readiness—a purpose of the 2010 Chien et al. study. Also, three of the four profiles to emerge in the study by Chien and colleagues were *free play*, *individual instruction*, and *scaffolded learning*—activities and structure types rarely observed in the current study.

In looking at kindergarten students in public and private schools, Finn and Pannozzo (2004) found student engagement to vary as a function of the percentage of a school's minority student enrollment—a finding that was not supported by classroom observations in the current study. Also, Finn and Pannozzo found girls to be rated as



better behaved than boys. This was not the case in the current study, as no statistically significant differences by student sex were found. Finally, their study correlated engagement to achievement scores, whereas the current study was entirely observational in nature (i.e., no student cognitive outcomes were measured).

Greenwood, Horton, and Utley (2002) explored classroom behaviors that enable academic learning and engagement. Like the current study, classroom observation was the methodology employed in the prior study. Also, Marks (2002) investigated the level of consistency in classroom engagement across grade-levels. The 2002 study found that engagement in academic responses increased from kindergarten through second-grade, and the 2000 study noted that girls were significantly more engaged in instructional activity than were boys. Though the current study did not consider *academic* engagement per se, no statistically significant differences in student engagement were found across grade-levels or by student sex.

In summary, differences and similarities existed between findings from the present study and those from previous research. In terms of differences, the current study was comprised of a largely ethnically diverse sample, whereas prior observational studies analyzed samples largely made-up of White children. Also unlike prior studies, findings from the current study differed, in that results showed no statistically significant differences in classroom instruction based on the percentage of students from economically disadvantaged families or the by the percentages of student ethnicities. Additionally in the current study, learner-centered approaches to instruction were no more prevalent in classrooms with a higher proportion of White children than they were

in classrooms with higher percentages of ethnic minorities. Also unlike previous findings, teachers' developmentally appropriate ECE beliefs and practices did not decrease as grade-levels increased from kindergarten to third-grade; rather, practices remained relatively constant across grade-levels. Finally, when looking at student engagement in the current study, no statistically significant differences by student sex or grade-level were found.

Similar to prior studies, the current study used classroom observation to observe classroom quality and its relation to teacher and child outcomes. The most frequently observed forms of classroom activity revealed by the current study, as well as prior studies, were structured, teacher-directed activities and whole-group instruction. Also like other studies, findings from the present study found evidence linking students' on-task behaviors to higher classroom quality.

### **Implications for Practice**

This section discusses implications for practice, as related to the present study's findings. An obvious concern lies in the fact that quality early childhood programs must take into account multiple developmental domains—cognitive, social/emotional, and physical. Young children differ greatly from each other in each of these areas; therefore, the need for teachers to individualize and differentiate their instruction is great. Higher-quality and effective instructional strategies must, therefore, consider a student's prior knowledge, culture, and overall levels of development. An almost entirely direct instruction, whole class approach to a singular group of children injudiciously discounts

the range of differences and contexts that are present within an early childhood classroom.

I previously raised the point that, despite much research describing the negative effects that highly teacher-centered, non-constructivist classrooms have on young students' engagement and ensuing learning outcomes, that formal, "academic" early childhood settings continue to be the norm, rather than the exception. Findings from the current study, however, necessitate an expansion of this initial characterization of the crisis: The issue not only exists in *how* young children are being taught, it occurs in the way in which policy-makers, politicians, administrators, and even parents are *defining* a school's success—by standardized test scores. Of the elementary schools observed in the current study, 14 of the 18 were rated as *Exemplary*, and four were rated by the state's education agency as *Recognized*, despite the fact that, overall, best practices were not utilized.

Measures of children's academic achievement have taken precedence over their gains in social and emotional development and their levels of motivation and engagement. In the current study, it was not unusual to hear teachers make comments pertaining specifically to "the test." First-graders, for example, were observed seated at desks, working as a whole group, identifying parts of paragraphs as a class, while the teacher looked for mistakes—preparing students for "the test." The developmentally appropriate concept of *play* for young learners, for example, has been erroneously portrayed as directly oppositional to the more "worthy" academic counterpart of academic *work*. The humorless paradox lies in the fact that classrooms where direct

instructional practices are used have been associated with less positive academic outcomes (Bryant, Burchinal, Lau, & Sparling, 1994). As Vygotsky suggested, play is children's work—it is what they do—and placing active, experiential approaches to learning in one box and cognitive skills acquisition in another puts forth a flawed premise from the start. (Hirsh-Pasek, Golinkoff, Berk, & Singer, 2009). The two ideas (e.g., developmentally appropriate pedagogy and positive learning outcomes) are inextricably linked.

The use of developmentally appropriate instructional practices offers an opportunity for young learners to gain the self-regulatory skills needed to engage in the learning process. In particular, the incorporation of play in the classroom has been described as a key factor in creating a learning environment in which children are able to function at higher levels of competence (Bodrova & Leong, 2001); however, students in the current study were largely taught in a manner that involved much student listening, watching, and working on written assignments, rather than engaging in a setting that encouraged open-ended, child-initiated learning.

An additional implication to consider is the affect on teacher education and teacher professional development. Developmentally appropriate practice requires professionals to make decisions about the education of young children based on: child development and learning, individual characteristics and experiences, and social and cultural contexts (NAEYC, 2009); yet in the current environment of increased teacher accountability as related to measurable academic outcomes (often in the form of standardization), individualizing instruction and viewing children as distinct beings are

challenging realities to create. Moreover, Darling-Hammond et al. (1999) found that teachers' skills and knowledge are among the most critical factors in affecting how much a young child learns. The National Research Council (2001) has recommended that pre-service education programs offer deeper and more specific infrastructure to future teachers in such areas as child development, social and affective behavior, and children's thinking. Institutions that offer undergraduate early childhood programs will therefore have to identify and strike the critical balance of meeting the needs of young children while simultaneously preparing pre-service teachers for a career of high-stakes expectations.

Additionally, policies should be implemented at a district or state level in order to improve the education of young children. Research programs specifically targeting child development and the effective preparation of ECE teachers should be created. Model ECE classrooms and schools (for professional development), mentor programs (for pre-service and new teachers), and the ability to monitor these programs could aid in the facilitation of more appropriate early childhood environments within public schools.

Finally, the use of observation to evaluate teachers continues to gain traction. Via feedback from principals and peers, Denver Public Schools, for example, are set to implement a district-level program of teacher observation in order to provide additional professional development and support to their teachers (Denver Public Schools, 2011). The ongoing use of observation in education research will only continue to guide and inform such attempts in the future.

### **Implications for Future Research**

Observational studies, by their inherent nature, have an obvious downside: The research design is non-experimental and therefore does not utilize randomized participant selection. In the absence of such an experimental methodology, it is not possible to ensure that the findings of an observational study are as predictive in nature as those of a randomized study. A limitation to the current study, therefore, was the threat to external validity. The early childhood classrooms in the sample were all situated within elementary schools in a public school district, located in a large metropolitan area in southeast Texas. One therefore must consider context before generalizing the study results to the population at large.

An additional threat to external validity is the possibility that the Hawthorne effect may have come into play. Some of the study subjects—the teachers, in particular—may have “performed” differently in the classroom, knowing that they were being observed. Due to the one-time classroom visits, as well as limited observation periods, there was no way to know how authentic the observed teacher instructional behaviors were.

Also, due to the fact that researchers were attempting to capture what typically occurred in public school classrooms (figures for the current study came from a secondary data set), the classroom observation data collection instruments used targeted a wide-range of classrooms. Although the focus sample of the current study was pre-kindergarten through second-grade, several of the instrument items (e.g., tutoring, presenting, etc.) were originally intended for grade-levels as high as fifth-grade and may

not have been particularly applicable to young children. The majority of these indicators, however, were excluded from analyses in the present study.

Additional ECE observational research should examine more comprehensive aspects of quality instruction in learning environments, as the benefits related to classroom observation and improved ECE policies are seemingly infinite. As Pianta (2003) stated, policy debates provide sound rationale for more systematic attempts at observing and assessing young learners' experiences within the classroom. Identifying and tackling early education's deficiencies only strengthens the quality of learning for all children.

Future observational research that takes into account known teaching approaches and compares them to student outcomes is yet another approach to consider. By comparing an equal number of classrooms and teachers who implement developmentally sound practices to those classrooms and teachers who endorse a more didactic pedagogical methodology, additional evidence can be gained in order to support (or refute) current beliefs about young children's learning environments.

Additionally, alternate student outcomes should also be considered. An example is the need to include student outcome measures and examine the impact of teacher and student behaviors. In addition to academic achievement, such student outcomes to be considered are issues related to student motivation and issues related to self-efficacy.

Qualitative data (e.g., open-ended interviews, focus groups, etc.) with teachers and principals regarding their attitudes and experiences surrounding developmentally appropriate practices would add to the professional discussion. The use of systematic

classroom observation provides great insight into a school and classroom; however, qualitative components could offer additional understanding as to why teachers instruct in the way they do and why principals make the decisions they make.

Perhaps most importantly, future research should move past the singular tactic of measuring cognitive outcomes and take a more holistic and longitudinal approach towards young children's learning. Future research should be universal with regard to gains in development, as well as look specifically at various learners with regard to cultural context.

## **Conclusion**

The purpose of the current study was to observe pre-kindergarten through second-grade public school classrooms, specifically noting child-centered and teacher-directed pedagogical approaches, by simultaneously examining: student behavior and activity structure, teacher instructional orientation and rationale, and overall classroom environment. The current study built upon the work of Pianta, examining classroom instruction and its subsequent effect on student engagement and educational quality; however, unlike previous studies, researchers observed the nature of activity structure and various student demographic variables. Additionally, dissimilar to prior classroom observation research studies, which typically included an overwhelming percentage of White students, Hispanic and African American students comprised a large percentage of the overall sample in the current study.



The multi-faceted approach (e.g., classroom setting, student ethnicity, grade-level, activity structure, purpose of teacher interaction, and classroom environment) to classroom observation in pre-kindergarten through second-grade classrooms yielded one central and critical result: Little to no variation existed in the activities in which young children were engaged in their classrooms or in the instructional practices utilized by their ECE teachers. Accordingly, the study showed few differences in student behavior and teacher practices by student sex, student ethnicity, grade-level, English language proficiency, and/or economic status. In essence, early childhood education in these classrooms was entirely standardized; however, three significant findings showed that: (a) students taught by teachers rated as having a higher developmentally appropriate instructional score were more likely to be on-task and less likely to be off-task; (b) students taught by teachers with a higher DAIP score were significantly more likely to be working kinesthetically, answering teacher-posed questions, and freely exploring; and (c) students taught by teachers with a lower DAIP score were significantly more likely to be distracted and/or not engaging in activity/transitioning.

High-quality early childhood settings consider all the domains of a young child's development, not just cognition. The need for teachers to individualize and differentiate their instruction in ethnically, culturally, and developmentally diverse environments is all but compulsory. Future ECE research and practice must utilize a more all-inclusive, farsighted approach towards young children's learning. Ultimately, the answer to providing effective instruction for young children lies in bridging the gap between

developmentally appropriate and direct instruction and striking a successful balance between both ideologies and practices.

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## APPENDIX A

**PK2 Student Behavior Observation Schedule**

School Name \_\_\_\_\_ Teacher Name \_\_\_\_\_ Grade Level \_\_\_\_\_ Student Sex \_\_\_\_\_ Student Ethnicity \_\_\_\_\_

| Observer _____  | Date _____ | Time Began _____ | Time Ended _____ | Content Area |   |   |   |   |   |   |   |   |    |       |
|---|------------|------------------|------------------|--------------|---|---|---|---|---|---|---|---|----|-------|
| (30 second time intervals)  |            |                  |                  | 1            | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Total |
| <b>SETTING (check one)</b>  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 1. Whole class  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 2. Small group (more than 2 students)   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 3. Dyad (2 students)  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 4. Individual   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 5. Other  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| <b>MANNER (check one)</b>   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 1. On-task  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 2. Off-task   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 3. Waiting for teacher  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 4. Disruptive   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 5. Other  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| <b>INTERACTION (check one)</b>  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 1. No interaction   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 2. With teacher – instructional   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 3. With teacher – managerial/social   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 4. With other students  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 5. Other  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| <b>ACTIVITY TYPES (check all that are observed)</b>                                 |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 1. Written assignment   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 2. Assessment   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 3. Discussing   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 4. Reading  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 5. Tutoring   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 6. Working kinesthetically  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 7. Answering teacher-posed questions  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 8. Answering peer-posed questions   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 9. Questioning  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 10. Presenting  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 11. Learning/activity centers   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 12. Constructive play (blocks, Legos)   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 13. Dramatic play (inventive, symbolic)   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 14. Games/rule-based play (e.g., board games, puzzles, child-created)               |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 15. Free exploration/inquiry  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 16. Using concrete learning materials that closely relate to daily life experiences |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 17. Listening/watching  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 18. Distracted  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 19. Acting-out (behavior)   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 20. No activity/transition  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 21. Other   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| <b>NATURE OF LEARNER INTERACTION (with other students)</b>                          |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 1. Onlooker   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 2. Parallel (next to, but not with another student)                                 |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 3. Associative (together, but without a common focus)                               |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 4. Cooperative (together, organized, with a shared purpose)                         |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| <b>TECHNOLOGY (check all that are observed)</b>                                     |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 1. MP3 player/iPod  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 2. Tape player/radio  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 3. Interactive whiteboard/SMART Board   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 4. Flip camera/video camera   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 5. Digital camera   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 6. DVDs/CDs & headphones  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 7. Skype/video communication  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 8. Laptop computer  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 9. Desktop computer   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 10. Television  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 11. Document reader   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 12. Overhead projector (traditional)  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 13. Handheld game/device  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 14. Student timers  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 15. Other   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| <b>EDUCATIONAL USE OF TECHNOLOGY (check one)</b>                                    |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 1. Basic skills/drill/practice  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 2. Problem solving (e.g., SimCity, Yukon Trail, Carmen Sandiego)                    |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 3. Creativity (e.g., Sketchpad, KidPix)   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 4. Individualized/Tracked (e.g., Accelerated Reader)                                |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 5. Word Processing  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 6. Other  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| <b>LANGUAGE USED (check all that apply)</b>   |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 1. English  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 2. Spanish  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |
| 3. Other  |            |                  |                  |              |   |   |   |   |   |   |   |   |    |       |

## APPENDIX B

## PK2 Teacher Roles Observation Schedule

School Name \_\_\_\_\_ Teacher Name \_\_\_\_\_ Teacher Sex \_\_\_\_\_ Grade Level \_\_\_\_\_

| # of students in class  | Observer | Date | Time Began | Time Ended |   |   |   |   |   | Content Area |   |   |    | Total |
|---|----------|------|------------|------------|---|---|---|---|---|--------------|---|---|----|-------|
|   |          |      |            | 1          | 2 | 3 | 4 | 5 | 6 | 7            | 8 | 9 | 10 |       |
| <b>INTERACTIONS (check one)</b>   |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 1. No interaction   |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 2. With student(s) (instructional)  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 3. With student(s) (managerial)   |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 4. With student(s) (social, personal)   |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 5. With student(s) (collaborative)  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 6. Other _____  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| <b>SETTING (check one)</b>  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 1. Whole class  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 2. Small group (more than 2 student)  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 3. Dyads (2 students)   |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 4. Individual   |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 5. Traveling  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 6. Other _____  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| <b>INSTRUCTIONAL ORIENTATION (check one)</b>                                      |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 1. Direct instruction (e.g., lecture)   |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 2. Seatwork (e.g., worksheets, textbooks)   |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 3. Learner-centered (e.g., cooperative learning, project-based, inquiry)          |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 4. Other _____  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| <b>NATURE OF INTERACTION (check all that are observed)</b>                        |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 1. Questioning  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 2. Explaining   |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 3. Positive Commenting (e.g., 'you look nice today')                              |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 4. Negative Commenting (e.g., 'traffic was terrible this morning')                |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 5. Neutral Commenting (e.g., general discussion about sports)                     |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 6. Listening  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 7. Cueing or prompting (scaffolding)  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 8. Modeling/Demonstrating   |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 9. Other _____  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| <b>PURPOSE OF INTERACTION (check all that are observed)</b>                       |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 1. Focus on content (e.g., subject area content)                                  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 2. Focus on process   |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 3. Focus on product (e.g., outcome)   |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 4. Connect content to other disciplines   |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 5. Connect content to global communities  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 6. Present multiple perspectives on topic   |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 7. Redirect student thinking  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 8. Show interest in student work  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 9. Show personal regard for student   |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 10. Encourage students to help each other   |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 11. Encourage students to succeed   |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 12. Encourage students to question  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 13. Encourage extended student responses  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 14. Encourage student self-management   |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 15. Praise student behavior   |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 16. Praise student performance  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 17. Correct student behavior  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 18. Correct student performance   |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 19. Assessment  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 20. Other _____   |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| <b>INSTRUCTIONAL PRACTICES (check all that are observed)</b>                      |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 1. Allocates extended periods of time for students to engage in play and projects |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 2. Facilitates opportunities for students to play with and learn from each other  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 3. Interacts with students during their play, while avoiding interference         |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 4. Talks with students about ideas related to their play                          |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 5. Observes and documents students' play to assess progress                       |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 6. Provides opportunities for students to sing, listen to, and/or move to music   |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 7. Uses technology to present material  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 8. Assists students with technology   |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 9. Uses technology as a communication tool  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 10. Uses technology to create   |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 11. Uses technology to access the Internet  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| <b>LANGUAGE USED (check all that apply)</b>                                       |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 1. English  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 2. Spanish  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |
| 3. Other _____  |          |      |            |            |   |   |   |   |   |              |   |   |    |       |

## APPENDIX C

## PK2 Overall Classroom Observation Measure

School Name \_\_\_\_\_ Teacher Name \_\_\_\_\_ Grade Level \_\_\_\_\_  
 Observer \_\_\_\_\_ Date \_\_\_\_\_ Time Began \_\_\_\_\_ Time Ended \_\_\_\_\_ Content Area \_\_\_\_\_

At the end of the classroom observation, indicate to what extent each of the following activities was used or demonstrated during the observation period:

## Rating Scale

1 - Not observed at all    2 - Some extent (once or twice)    3 - Great extent (3 or more times)

|   | 1 | 2 | 3 |
|---|---|---|---|
| <b>INSTRUCTION</b>  |   |   |   |
| 1. Teacher actively facilitated students' engagement in activities and lessons to encourage participation                             |   |   |   |
| 2. Teacher linked concepts and activities to one another and to previous learning   |   |   |   |
| 3. Teacher applied new concepts to similar situations (elaborated)  |   |   |   |
| 4. Teacher connected ideas and concepts   |   |   |   |
| 5. Teacher initiated experiences, discussions and activities  |   |   |   |
| 6. Teacher acted as coach/facilitator   |   |   |   |
| 7. Teacher allowed students to develop concepts or procedures   |   |   |   |
| 8. Teacher provided students opportunities for problem solving  |   |   |   |
| 9. Teacher asked many open-ended questions  |   |   |   |
| 10. Teacher provided feedback (answers, information, etc.)  |   |   |   |
| 11. Teacher provided ample wait-time for student responses  |   |   |   |
| 12. Teacher assisted students to organize thinking (identify and describe patterns)   |   |   |   |
| 13. Teacher integrated technology into lesson   |   |   |   |
| 14. Teacher integrated feedback and assessment into instructional cycle   |   |   |   |
| 15. Teacher distributed feedback evenly   |   |   |   |
| 16. Teacher redirected student thinking   |   |   |   |
| 17. Teacher related concepts to students' lives   |   |   |   |
| 18. Teacher provided opportunities for students to assume responsibility by initiating classroom activities                           |   |   |   |
| 19. Teacher used a variety of modalities including auditory, visual, and movement   |   |   |   |
| 20. Teacher varied styles of conversation and participation to include students' cultural preferences                                 |   |   |   |
| 21. Teacher provided opportunities for students to be creative and/or generate their own ideas and/or products                        |   |   |   |
| 22. Teacher offered encouragement of students' efforts that increased students' involvement and persistence                           |   |   |   |
| 23. Teacher appeared to have warm, supportive relationships with students   |   |   |   |
| 24. Teacher used appropriate vocabulary based on students' language proficiency   |   |   |   |
| 25. Teacher emphasized key and new vocabulary   |   |   |   |
| 26. Teacher explained tasks using a step-by-step manner with visuals  |   |   |   |
| 27. Teacher provided opportunities for clarification in native language, if possible  |   |   |   |
| 28. Teacher integrated all language skills: listening, speaking, reading, and writing   |   |   |   |
| <b>STUDENT</b>  |   |   |   |
| 1. Students initiated and assumed responsibility for learning activities  |   |   |   |
| 2. Students connected ideas and concepts  |   |   |   |
| 3. Students used different ways to answer (alternative solutions)   |   |   |   |
| 4. Students used technology to enhance problem solving/creativity   |   |   |   |
| 5. Students used technology to learn basic skills (e.g., tutorials, drill & practice)   |   |   |   |
| 6. Students used technology to access the Internet  |   |   |   |
| 7. Students were engaged in classroom activities  |   |   |   |
| 8. Student activities were learner-centered   |   |   |   |
| 9. Students solved problems using real objects in the classroom environment   |   |   |   |
| 10. Students engaged in activities that integrated multiple subjects and content areas (reading, math, science, social studies, etc.) |   |   |   |
| 11. Students had freedom of movement and placement during activities  |   |   |   |
| <b>CLASSROOM ARRANGEMENT/ENVIRONMENT</b>  |   |   |   |
| 1. Materials and/or manipulatives were available for hands-on student practice  |   |   |   |
| 2. Space was divided into activity areas/centers and organized in a manner to encourage children's learning through play              |   |   |   |
| 3. Blocks and/or other construction materials were available for exploration/play   |   |   |   |
| 4. Student work was displayed   |   |   |   |
| 5. Transitions were quick and efficient   |   |   |   |
| 6. Technology was accessible for student use  |   |   |   |
| <b>TECHNOLOGY</b>   |   |   |   |
| 1. MP3 player/iPod  |   |   |   |
| 2. Tape player/radio  |   |   |   |
| 3. Interactive whiteboard/SMART Board   |   |   |   |
| 4. Flip camera/video camera   |   |   |   |
| 5. Digital camera   |   |   |   |
| 6. DVDs/CDs & headphones  |   |   |   |
| 7. Skype/video communication  |   |   |   |
| 8. Laptop computer  |   |   |   |
| 9. Desktop computer   |   |   |   |
| 10. Television  |   |   |   |
| 11. Document reader   |   |   |   |
| 12. Overhead projector (traditional)  |   |   |   |
| 13. Handheld game/device  |   |   |   |
| 14. Student timers  |   |   |   |
| 15. Other   |   |   |   |

\*\*Field notes on back of page\*\*

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### Selected presentations:

**Alford, B. L.,** Padrón, Y. N., Rollins, K. B., & Waxman, H. C. (2011, April). *Systematic Classroom Observation in the Early Childhood Setting from a Student, Teacher and Classroom Perspective*. American Educational Research Association (AERA) – New Orleans, LA

Stillisano, J., **Alford, B.,** Lee, Y.-H., Rollins, K. B., & Waxman, H. C. (2011, April). *Evaluating the Effectiveness of IB Programs in Texas Schools*. American Educational Research Association (AERA) – New Orleans, LA

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**Alford, B.,** Braziel, K., & Collins, T. (2008, July). *Play Decisions and Interactions in a Children's Museum: Who Decides?* International Froebel Society Biennial Conference – Boston, MA