

Academic and social-emotional effects of full-day kindergarten: The benefits of time

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This study used a mixed-methods approach to examine academic and social-emotional effects of full-day kindergarten. Quantitative data analysis indicated a significant difference in academic achievement for children in full-day versus half-day kindergarten. Personal perspectives from teachers, administrators, and parents provided insight into how an extension of the school day promoted that achievement. Those perspectives also helped paint a picture of students' social-emotional development and other effects of the new program that supports previous research on full-day kindergarten. Results suggest that students in a small rural community benefited both academically and developmentally from the extended kindergarten experience.

Keywords: Full-day kindergarten, social-emotional development, academic achievement, kindergarten curriculum, and parental involvement.

Schools are under tremendous pressure from policy makers, both national and state, to ensure an equitable education for all children. The demand for *Adequate Yearly Progress* requires school districts to consider all avenues available to increase student achievement. One such possibility is the change from half-day to full-day kindergarten. While the transition from half-day to full-day has increased steadily in the past 40 years (Bruno & Adams, 1994), the debate continues about the appropriate nature of kindergarten. Despite that debate, most research on the effects of full-day versus half-day kindergarten has been focused on student achievement, with a special emphasis on at-risk students. Consistently, results of many of those studies show positive increases in student achievement linked to full-day kindergarten (Fusaro, 1997; Lee, Burkam, Ready, Honigman, & Meisels, 2006; Puleo, 1988). Conversely, research is inconsistent in finding differences in students' social, emotional, or developmental factors because of full-day kindergarten (Puleo). This inconsistency merits a closer examination for two reasons. On one hand, the debate about the nature and purpose of kindergarten is immersed in ideas of social-emotional development and the appropriateness of academic expectations for kindergarten-aged children. Alternately, kindergarten-aged children are at a "critical period" for development, and future success in school is largely dependent upon a successful transition into the full-day school environment (Entwisle & Alexander, 1998, p. 351).

The purpose of this mixed methods study was to examine the impact of full-day kindergarten on social, emotional, and developmental factors of students, as well as academic achievement. The study focused on how changing from half-day to full-day kindergarten in one small rural midwestern school district affected students, parents, and teachers. Attention was given to a variety of factors related to delivery of an all-day kindergarten program, such as pedagogy, course curriculum, student and teacher relationships, perceptions

of teachers, parents, and administrators, communication between teachers and parents, satisfaction and motivation, and other topics that emerged from the data.

LITERATURE REVIEW

It is important to understand the complexity of a learning environment in order to maximize educational benefits for young children. However, exactly how to achieve that ideal environment is still in question. What past research supports is that the foundation for the ideal environment should be based on the connection between students' social-emotional development and academic growth. That connection is also firmly supported by theorists such as Piaget, Vygotsky, and Bruner. Such developmental theories share common elements that link cognitive development and learning, and also support the importance of peer interaction in development (Driscoll, 2000).

Social-emotional development

According to Entwisle and Alexander (1988), the child who easily moves into the role of "student" enhances his or her own development and is therefore more inclined to fit in and excel academically. The process utilized to familiarize kindergarten students with expectations of elementary students was described by McCadden (1997, p. 239) as a "series of rituals to help the children shed their external (home) roles, make the transition to their school roles, and reaggregate as students (as opposed to children)." Extending kindergarten from half day to full day raises several important questions. One important question is how increased instructional time should be planned to best meet student needs. Puleo (1988) advocated that time on task in academically engaged activities is essential to meeting academic goals. He further suggested that unstructured class time could be a key element in meeting students' social and

emotional goals. While implementation of the *No Child Left Behind* educational legislation places social and emotional goals secondary to academic, research purports that a child's social role is positively affected by the transition to full-day schooling.

Findings from a large number of kindergarten studies indicated no significant differences in social and emotional development as a result of full-day versus half-day kindergarten attendance, according to reviews by Entwisle, Alexander, Cadigan, and Pallas (1987) and Puleo (1988). There are a few studies, however, that claim significant increases in both academic achievement and social development as a result of full-day kindergarten (Finn & Pannozzo, 2004; Winters, Saylor, & Phillips, 2003). As methodological problems in quantitative studies are often indicated as a factor in research inconsistencies, an alternate approach would be to consider parents' assessments of their child's social development. In a study of full-day and half-day kindergarten, Elicker and Mathur (1997) found parents satisfied that the full-day program had positively impacted their children's social development. Parents rankings of the importance of social development and academic goals however, are inconsistent or subject to change. Whereas research by Goulet in 1975 found parents ranked social development a priority, later studies by Dank (1978) and Kean (1980) found parents ranking academic goals higher (as cited in Harris & Lindauer, 1988). Each of these reports of parental preference was in opposition to the rankings of teachers in those studies.

Academic achievement

The research is consistent in finding that full-day kindergarten results in higher student academic achievement (Entwisle & Alexander, 1998; Puleo, 1988), especially for children from disadvantaged backgrounds. Likewise, student attendance was found to be significantly higher in full-day, and that increased attendance positively affected first-grade achievement (Entwisle & Alexander). Long-term effects have been found to be much less reliable (Cannon, Jackowitz, & Painter, 2006; Lee et al., 2006). However long lasting, the kindergarten experience is critical as even small differences in the transition to first grade affect the likelihood of being retained, and those differences endure and strengthen over time, according to Entwisle and Alexander.

In summary, research supports increased academic achievement and attendance in full-day kindergarten, although results are inconsistent with regards to the long-term effects. Additionally, while developmental theories provide support for the hypothesis that an increase in interaction time would stimulate social-emotional development, studies of that topic have also been inconsistent.

To that end, this project was designed to examine both issues using a mixed methods approach.

PURPOSE AND RESEARCH QUESTIONS

The purpose of this study was to examine the effects of full-day kindergarten. Based on findings from past research, the project was approached with the view that successful "schooling" involves the whole child. It was therefore important to consider all the forces that interact in the schooling process. To that end, this study examined academic achievement and social-emotional aspects, as well as teachers', parents', and administrators' perspectives of the program using both qualitative and quantitative methods. Attention also was given to a variety of aspects related to delivery of an all-day kindergarten program such as pedagogy, course curriculum, student and teacher relationships, communication between teachers and parents, and other topics as they emerged from the data. The overarching research question that guided this study was: "How does a full-day kindergarten program impact kindergarten-aged students?" Subordinate questions explored were:

1. What is the nature of the full-day kindergarten program for the identified small rural midwestern school district?
2. In what ways did delivery of a full-day kindergarten program impact social, emotional, and developmental factors of students?
3. Is there a difference in the academic achievement of children in full-day compared to half-day kindergarten?
4. What other impacts of full-day kindergarten not associated with student development or achievement will be discovered?

METHODS

A mixed methods design was utilized to investigate the effects of full-day kindergarten in relation to both social-emotional development and academic achievement. Quantitative data included student achievement scores and a developmental measure. Qualitative data was gathered through interviews with administrators, teachers, and parents.

Participants

Participants in this study were 27 kindergarten students and their parents, two kindergarten teachers, two first-grade teachers, and two administrators. The study was conducted in a small rural midwestern school district located in a town with a population of approximately 2,800. It is an agricultural and railroad community situated within a 30 to 60 mile radius of three cities with populations of more than 50,000 each. Kindergarten teachers, referred to in this study as Julia and Karen (fictitious names), were female with 14 combined years

teaching experience and had both taught the half-day kindergarten classes the year before. Both teachers have a full-time classroom aide and use similar teaching methods. School administrators included a building principal and a district superintendent with 16 combined years of administrative experience. The 2004-2005 academic year was the first year for implementation of full-day kindergarten.

Students in the two classes were similar in demographics. One class had nine females and four males, the other class consisted of nine females and five males. Students were predominantly White with only one child from each class identified as White and African American. All but five of the 29 children had previously attended either Head Start or preschool. Permission to conduct the research project was received prior to the start of the school year. All individuals involved (students' parents, teachers, and administrators) were informed of study details and procedures and consented to participate in the study. Students and parents mentioned or quoted in this report were given fictitious names to protect their identities.

Research design

The research project was approached as a case study using a mixed methods design in order to examine the effects of full-day kindergarten in one rural school district. This was the first year of a complete conversion to full-day kindergarten with no option available to parents for a half-day program. According to the school superintendent and kindergarten teachers, this change was approved by the board of education, and had raised few concerns among the community.

Quantitative data were collected to determine the effect of full-day kindergarten on students' academic achievement and social-emotional development. Qualitative data were also collected in an effort to examine the social-emotional growth of children during kindergarten, and to gain an understanding of the effects of full-day kindergarten from the perspectives of teachers, administrators, and parents. That data, along with fieldnotes, provided a triangulation of data determined to be the most appropriate method for establishing a "picture" of the new program. More importantly, triangulation of data utilized the strengths of each method while offsetting weaknesses (Creswell, 2005).

Instruments

Dynamic Indicators of Basic Early Literacy Skills (DIBELS). The DIBELS (Good et al., 2002) is a battery of literacy tests for grades K-3 administered either three times per year in whole group settings to monitor reading development, or weekly to monitor the needs of students identified as at-risk. The timed tests provide scores on Letter Naming Fluency

(administered August and December), Initial Sound Fluency (administered August, December, and April), Phoneme Segmentation Fluency (administered December and April), Nonsense Word Fluency (administered December and April), and Word Use Fluency (not utilized by the school). Reliability measures for the subscales are acceptable ranging from 0.64 (alternate form) to 0.97 (test-retest), and evidence for predictive and concurrent validity is comparable to the Woodcock-Johnson Reading test. The instrument has been identified as problematic in its ability to measure reading comprehension and vocabulary, but adequate when supported by supplemental tests (Shanahan, 2006).

Criterion Referenced Tests (CRTs). District developed CRTs include pre-tests and post-tests in reading, science, and problem solving (problem solving and algebraic concepts). Also assessed are end-of-the-year performance in reading, science, and math using portfolios. No data regarding validity or reliability exists for these teacher-made instruments.

Developmental Assessment of Young Children (DAYC). The DAYC (Voress & Maddox, 1998) is a developmental assessment battery for children from birth to 5 years 11 months. Separate scales are available for evaluating Adaptive Behavior, Physical Development, Social-Emotional Development, Communication, and Cognitive Development. Internal consistency is high across all age intervals (coefficient alphas 0.90 or higher), and test-retest reliability produced correlation coefficients from 0.94 to 0.99. There is also evidence of high content and construct validity (Watson, 1995).

Although information gained from employment of other subscales would have been useful, only the Social-Emotional subscale was used in this study in order to limit interruptions to instructional time. The Social-Emotional subtest is a list of abilities sectioned by five age groups: birth, 12 months, 24 months, 36 months, and 48 months. Adaptations were made to the instrument so that the final instrument scored by teachers began with starting age 36-month abilities, resulting in 29 items, as suggested by the authors. These included abilities such as *usually takes turns* and *asks for assistance when having difficulty*. Starting age 48-month abilities included *changes from one activity to another when required by teacher or parent*, *gains attention from peers in appropriate ways*, and *understands rules of fair play* (Voress & Maddox, 1998). Teachers used the instrument to rate each child at the beginning and end of the school year.

Qualitative methods

The qualitative portion of this study was designed as a case study (Creswell, 1998; Patton, 1990). Patton stated that "Case studies are particularly valuable when the evaluation aims to

capture individual differences or unique variations from one program setting to another or from one program experience to another” (p. 54). A qualitative case study attempts to present a holistic depiction of the context, detail, and depth of the case.

Beliefs rather than facts form the basis of perception in qualitative research. Lincoln and Guba (1985, p. 17) stated that

Qualitative research assumes that there are multiple realities—that the world is not an objective thing out there, but a function of personal interaction and perception. It is a highly subjective phenomenon in need of interpreting rather than measuring.

Utilization of qualitative methodology produces research that is “exploratory, inductive, and emphasizes process rather than ends” (Lincoln & Guba). In this research study, perceptions of the impact of full-day kindergarten upon student achievement and developmental factors were documented through open-ended participant interviews and nonparticipant observations of classroom instruction and dynamics. Care was taken by the researchers merely to observe the delivery of instruction and interactions of students and teachers during class observations as unobtrusively as possible.

Fieldnotes detailing classroom observations were recorded in a clear and concise format for ease of accessing desired information (Merriam, 1998). Those notes were then transcribed verbatim in order to allow data to be utilized for interpreting, coding, and analysis. Reflective information can take many forms. For the purpose of this study, the researcher followed the advice of Miles and Huberman (1994) to utilize structured reflective summary forms after each interview, observational protocol for reflective and descriptive fieldnotes, and a reflective journal as formats for recording reflective notes. The purpose of reflection regardless of the format is to cause the researcher to ponder and focus on issues, themes, main concepts, and questions observed during the contact. Use of the reflective format allowed the researchers to plan and guide subsequent contacts with research participants.

Interviews, an established mode of obtaining information in qualitative research, were conducted with each kindergarten teacher at the beginning of the year, mid year, and end of the year. A focus group interview was also conducted with teachers and administrators at the end of the year. Parent interviews were conducted by telephone or email communication. First-grade teachers were contacted and asked to respond with their perceptions of the students at the beginning of the next year. Lincoln and Guba (1985) suggested that the purpose of interviews is to obtain the here-and-now constructions related to person, activities, feelings, events, motivations, and concerns. All interviews, open-ended format, were tape

recorded and transcribed. These interviews allowed participants the opportunity to verbalize in-depth reflections regarding the delivery of a full-day kindergarten program, student achievement, student development, and any concerns or impressions about the program. Structured summaries were utilized to record salient points, emerging ideas, thoughts, hunches, and impressions.

Classroom documents also were collected and provided a “ready-made source of data” thus allowing easy access to important information about the classroom (Merriam, 1998, p. 112). Written documentation enriches what is seen and heard, supporting, challenging, and expanding the researcher’s “portrayals and perceptions” (Glesne & Peshkin, 1992, p. 54). Glesne and Peshkin (1992) claim, “Documents corroborate your observations and interviews and thus make your findings more trustworthy” (p. 52). Furthermore, written documentation may raise new questions and redirect observations and interviews. Documents collected included teacher correspondence to parents, lesson plans, and student progress reports.

Multiple data sources were utilized to generate the data of this case study over the period of one academic year (2004-2005). Utilization of these combined data collection procedures offered a holistic perspective of the issues being explored and served as sources of data that facilitate confirmation of the findings across several sources of evidence, resulting in increased trustworthiness of the investigation (Lincoln & Guba, 1985; Miles & Huberman, 1994; Yin, 1994). The triangulation of data in this study served to strengthen the design and paint a realistic picture of full-day kindergarten.

RESULTS

Academic Achievement

To examine whether students in full-day kindergarten experience greater academic achievement than students in half-day programs, data from the DIBELS, CRTs, and end-of-year performance assessments in reading, science, and mathematics were analyzed. We also examined data from interviews with teachers and parents to extend our understanding of quantitative results. A comparative analysis was conducted to locate possible differences in students’ achievement using a quasi-experimental design with student records from the previous year as a control group ($n = 29$). Despite the fact that many early studies received disparaging critiques because of problematic methodologies such as this quasi-experiment design (Adcock, Hess, & Mitchell, 1980; Lee et al., 2006; Puleo, 1987; Terens, 1984), this method remained the only option. In an effort to offset this drawback, pretest scores from the DIBELS and CRTs from full-day and control groups were compared using *t*-tests. No statistically

significant differences were found between scores from the control groups and the full-day group.

To answer the research question concerning whether academic achievement differed for students in full-day versus half-day kindergarten, multivariate analysis of variance (MANOVA) was used to compare the achievement levels in the two full-day programs and the previous year half-day programs. Comparisons on the end-of-year performance assessment indicated no significant differences in reading, science, or math performance due to group. Likewise, MANOVA results with dependent variables being CRT scores in problem solving, reading, and science also showed no significant difference between groups. In contrast, MANOVA results did indicate that attending full-day kindergarten significantly affected the combined dependent variables from the DIBELS, Wilks' $\Lambda=0.569$, $F(4,51)=9.67$, $p < 0.001$, multivariate $\eta^2=0.431$. Univariate ANOVA results indicate that Initial Sound Fluency and Phoneme Segmentation Fluency scores were significantly higher for full-day kindergarten students. Nonsense Word Fluency and Letter Naming Fluency did not significantly differ for the kindergarten group (see Table 1).

Teacher interviews also supported higher academic achievement in full-day kindergarten because, as Julia described, students "are not rushed all day long and have more time to spend on all topics rather than being limited." Karen liked the idea that the full-day program does not require the same structure as did the half-day program. She said, "Last year we had, you know, forty-five minutes for language arts and if we didn't get it done then we didn't have the afternoon to slide into, so it's more relaxed, my teaching style is more relaxed." That relaxed environment allowed teachers to complete the teaching of the curriculum, an accomplishment unlikely in previous years. According to Karen, "I haven't seen any of the testing they've done yet, but their achievement is higher. They'll get through the entire math program." Many

of these children, according to Julia, scored very low on the kindergarten screening assessment: "Many couldn't write their names and a lot didn't know their letters yet." Despite that problem, Julia found her class excelling:

We're getting farther into the phonics lessons, ... the first-grade kinds of things. We're doing more group time for kids who are ready for more reading activities, ... we're working on reading books. A lot of the kids are working on addition and subtraction. Subtraction is nothing that I ever introduced in kindergarten before, but they are ready for that.

So, while expanding the curriculum was not intended, the extra time allotted by the full-day program provided teachers the flexibility to promote appropriate academic enhancement for children, as well as to intervene when problems arose.

Parents also noticed the difference in curriculum. According to one mother with older children who had attended both full and half-day programs, her daughter "can count by two's and five's and yeah, that's something the others didn't do, not even my son when he was in the full-day program. No, they never did any of that." When asked if she thought her daughter was less, more, or as prepared for first grade as her other children, that mother claimed, "Oh yeah, she's real excited, and ready. I mean, she can read, and the other kids didn't even start that." Even those children whose parents initially believed they were not ready for a full-day program, benefited tremendously: "He loves school and I think he is going to do well."

Social-emotional development

To examine growth in students' social-emotional development, the DAYC was administered by teachers at the beginning and end of the school year. Student raw scores from the DAYC, pretest and posttest, were converted to standard scores as suggested in the testing manual. Scores were then compared using a dependent t -test to determine whether students had significantly improved in social-emotional abilities. Results showed a significant difference in student social-emotional abilities from pretest to posttest, $t(0.05; 28) = 4.825$, $p < 0.001$.

Further analysis found six items on the ability list that fewer than half of all students could do at the beginning of the year. Those items were examined qualitatively. Some of the abilities many children lacked at the beginning of the year, but could do at the end of the year were those such as *waits for turn when playing in group games, gains attention from peers in appropriate ways, has best friend of same sex, expresses anger with nonaggressive words rather than with physical action, and states goal for himself or herself and carries out activity.*

Table 1. Multivariate Analysis of Variance Results for DIBELS.

Variable and source	df	MS	F	p
Initial sound fluency	1	1329.090	32.725**	0.000
Error	54	40.613		
Phoneme segmentation	1	1941.231	6.028*	0.017
Error	54	322.024		
Nonsense word fluency	1	501.217	2.430	0.125
Error	54	206.263		
Letter naming fluency	1	681.380	3.229	0.078
Error	54	211.000		

* $p < 0.05$. ** $p < 0.01$.

Because the extended day allowed teachers to incorporate play and social activities into the curriculum, children learned appropriate social behaviors and routines. According to Karen, the children had great advancements in social-emotional development:

Some of them didn't know how to play with another person when they first came, and they're doing a lot better now. ... Pretty early we started with, if they came up with a problem we told them to go back and solve it on their own, to talk through it, which last year took long time before we got to that point, you know, before they were going to be able to solve their problems on their own. We got to that point quicker this year where they're solving their own problems.

Julia also witnessed greater social-emotional growth in her students and attributed that growth to more time to play, and group interactions between children. She said, "We have more play times where they can interact with peers. I think with the all-day program I probably see more different friendships. ... In half-day they would play with their best buddy. ... There wasn't a lot of mixing." Julia asserted that part of her students' ability to socialize with different children was due to the time allowed for grouping, and varying student work groups. The teachers' report of social-emotional growth was also supported by parents. Charity's mother said that although Charity had attended preschool, this year was "the only time she's made friends in school outside of our home. ... She isn't shy and now has lots of friends."

INDICATIONS FOR THE FUTURE

Since most studies identify significant academic gains for full-day kindergarten students over those attending half-day programs, but are less convincing as to lasting effects, we decided to gain yet another perspective. We asked the first grade teachers to respond when, at the beginning of the next year, they had an opportunity to evaluate the full-day children's readiness for first grade. Although information gained does not translate to long-lasting results, it does provide a picture of possibilities and those possibilities are encouraging. Response from first grade teacher Rachel indicated that children who had attended the full-day kindergarten were better prepared, both academically and socially-emotionally, upon entering first grade. According to Rachel, students accustomed to full-day kindergarten had an advantage in several areas:

They were a little further along on knowing letter names/sounds with less review and seemed better at ending consonants. Handwriting was better in general so I assume they were able to spend more time on that. I would say that as a class they were a little farther along in math

in areas like number recognition and counting ... and more comfortable with writing workshop format. Perhaps the main benefit was not having to go through the usual adjustment of getting students used to spending the whole day at school. They were used to the all day format so it was easier to get into routines and do more school work in the day sooner instead of taking so many breaks. Little things like having them already know how to get their lunch were helpful.

Parental involvement

Parents were not content to sit back and wait for results of full-day kindergarten; they were actively involved. During classroom observation, parents were often present. That involvement may be due to the extra time that allowed teachers to communicate with parents and encourage a participatory role in their children's education. Julia reasoned the increased parent involvement as a two-way street. She said,

I have the time to reach out more to the parents as far as notes and letters, you know, during rest time I have time to sit down and type those notes and even behavior notes, if the child has a rough day. In the half-day program I didn't have time to within that two or three hours span to write out a note ... now I'll sit down at lunch and type out a note, 'Your child had a rough day today. Here's what happened.' So maybe that gives the parent the opportunity to be more involved. Then the next thing you know, they'll send me a note, "Okay, we talked about it and here's what we're going to do." I have the time to reach out to the parents better.

Besides the notes sent home, teachers also reached out to communicate with parents through progress updates, special event notices, and monthly posting of current kindergarten events on the school website.

Teaching

Observations in the classroom and personal perspectives from teachers, parents, and administrators about learning and development point to quality of instruction. Teachers stressed how additional time affected their ability to provide higher quality instruction, enhance the curriculum, and initiate needed interventions. They voiced their relief in no longer finding it necessary to fit the curriculum into the constrained half-day environment. They were now able to present curriculum in a time frame more conducive to learning. According to Karen, the half-day program forced her to try to "cram everything in, in three hours. ... Three hours and then you also had P.E. and music in there. ... We were just cramming things down their throats." Referring to the half-day schedule, Julia commented, "We really had to be on a

tight schedule and if we didn't get something done, I didn't even have time to make it up. This year, if I have kids falling behind, I can usually catch them up." Teachers now have time to reflect on their teaching, be flexible, and intervene when students are at-risk. Julia believes the extended day "provides a chance for those students who come in academically behind to not remain academically behind" because she now has more time to remediate and make recommendations for students needing intervention.

That intervention is made possible by teachers' time to reconstruct teaching activities as small group and one-on-one instead of whole group instruction. Julia remarked that instructional changes were a great benefit to full-day kindergarten. She said,

When we work in small groups, the kids just thrive. I mean they love when they have that time with the teacher. ... I'm trying now to individualize it more so kids who are more advanced can work on more advanced skills. I can do ability grouping and help those who most need it.

Parents also acknowledged the full-day program as an advantage for children who were not thought to be academically or developmentally prepared to start school. One parent, while expressing initial hesitancy about her child's readiness for kindergarten, later enthusiastically claimed that "full-day couldn't have come at a better time. ... He needed the extra assistance that full-day offered him. The intervention on the part of the teacher and staff to get Cole the added help needed was great."

Benefits and surprises

While teachers, parents, and administrators were satisfied with results of the full-day program in terms of academic achievement and social-emotional development, they were also pleasantly surprised by an increase in attendance. The increase in attendance may have been related to parents' perception of the full-day program as being more like real school instead of another preschool type setting. According to one mother, full-day kindergarten is "real school you know, with real time for learning."

Not all surprises are good, however, and in this case there were several learning adventures for teachers and administrators. Lunch time, both teachers and administrators agreed, presented a slight problem in that "kindergartners can't cut up their lunch food. ... We may need to hire some additional staff cause if it wasn't finger food they couldn't cut it up. ... They even needed help carrying their trays." Likewise, transportation also presented its own problems. Parents had to assume more responsibility in waiting with their children at the bus stop and being prepared when

children arrived home. Furthermore, in the half-day program children were picked up and returned home separately, but in the full-day program they boarded and debarked from buses with the big kids. According to one administrator, transportation was one of the biggest problems to deal with in the full-day program.

A researcher's perspective (GC)

First day of school in the full-day kindergarten classroom: Children enter the classroom with their parents. The classroom is large, brightly lit, and has windows all along one wall with brightly colored curtains. There are five round tables with chairs, a separate small area with a sink and countertops where supplies are kept, a quiet-time reading area, play area, and a carpeted area between the teacher's desk and a chalkboard. Most of the children are staying close to their parents, but appear alert in taking in the new unfamiliar surroundings. Many of them have a teddy bear or a toy. The children do not seem to be familiar with one another. At about 8:35 a.m. the teacher encourages children to gather on the carpet, then begins to read *The Night Before Kindergarten*. The children are attentive, but frequently look back to their parents sitting in the back of the room as if for support and reassurance. My first thought, and one that persisted for at least 2 weeks, is "Are these babies really ready for full-day school." After the story, the teacher's aide takes the kindergartners to the cafeteria for work on a project. While children are gone the teacher reviews general school information (transportation, supplies, and daily activities) with parents. Thus begins the year for the full-day kindergarten students, and as they go about the business of becoming students, I watch and learn.

April, 2005: Few weeks remain for this class of kindergartners. Changes were slow and subtle, but I now clearly see students instead of babies. The children react quickly and naturally to cues from the teacher; a flick of the light switch or hand signal sets children in motion as they move from one activity to another. Later that day, as children prepare to leave, I observe seamless organization as they clean up and put away supplies. They help one another stuff backpacks and tie shoes. Two children catch my hand and lead me to the window where plants are growing. They explain that the plants were purchased during a field trip and give details of their care of the plants. I see no hesitancy in their expressions or behavior. These are students well acquainted with the routines of "real school."

From the first to last observation of students, and interviews with teachers, parents, and administrators, perspectives were made clear: this full-day kindergarten setting provided an optimal environment for students, and the key variable was time. Time was the essential element needed for high quality

teaching, learning, interaction and play, and time was the ultimate facilitator necessary for transition from child to successful student.

DISCUSSION

Unsurprisingly, results of this study showed modest increases in academic achievement for full-day kindergarten over half-day; those results are consistent with literature previously discussed. Peculiar though, were nonsignificant results in mathematics achievement. Since previous research supports gains in mathematics achievement for full-day kindergarten (Lee et al., 2006), and both teachers and parents specifically mentioned enhanced curriculum and achievement in math, results were perplexing. Discussion with teachers, however, helped provide at least one explanation of why differences in mathematics achievement, as well as other areas, might not have been found. The performance assessments were created by district teachers and were not changed to measure any additional curriculum presented in the full-day program. Therefore, mathematics achievement, above the normal curriculum, would not have been detected, if in fact it existed as attested to by teachers and parents. Not unexpected, but nevertheless exciting, were qualitative results aligned with other research findings. Parent and teacher perceptions were positive, students' social-emotional growth was notable, and both teachers and parents presume that children will be more successful in first grade as a result of the full-day kindergarten experience.

CONCLUSIONS

The appropriate length of a kindergarten program has been an issue of debate for more than two decades. Results from this study, like many others, attest to the academic advantage for students in full-day versus half-day programs. However, while previous studies are less consistent regarding the effects of full-day kindergarten on social-emotional development, unique perspectives drawn from this study suggest those effects are real and positive. Full-day kindergarten buys teachers the time to implement high quality instruction, and creates for students the social environment necessary for the transformation of "child" to "student" so that high-quality instruction results in enhanced academic achievement. We are certainly not suggesting that high quality instruction does not occur in half-day programs, but results of this study do imply that instruction and student learning benefit from the luxury of time. In an age where testing and accountability are emphasized in order to ensure "no child is left behind," results of this study suggest that full-day kindergarten is an appropriate place to begin ensuring high quality education. Furthermore, if districts actually save money because of lower grade-retention rates in later years (Weiss as cited in Viadero, 2002), then the immediate expense of additional teachers,

and possibly lunch room aides, is well worth the cost in terms of student success. In regards to apparent bias at the beginning of this study, this researcher no longer questions whether those babies were ready for full-day school. We watched their metamorphosis from timid unsure children to confident, successful, and seemingly well-adjusted students.

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