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September 12, 2007

MEMORANDUM

TO: Legislative Education Study Committee

FR: David Harrell

RE: STAFF REPORT: FULL-DAY KINDERGARTEN

Introduction

The kindergarten year can be especially challenging. More than 10 years ago (1996), the International Reading Association and the National Association for the Education of Young Children issued a joint position statement describing the diversity common in kindergarten classrooms at that time. The description seems just as apt today:

Experienced teachers throughout the United States report that the children they teach today are more diverse in their backgrounds, experiences, and abilities than were those they taught in the past. Kindergarten classes now include children who have been in group settings for three or four years as well as children who are participating for the first time in an organized early childhood program. Classes include both children with identified disabilities and children with exceptional abilities, children who are already independent readers and children who are just beginning to acquire some basic literacy knowledge and skills. Children in the group may speak different languages at varying levels of proficiency. Because of these individual and experiential variations, it is common to find within a kindergarten classroom a five-year range in children's literacy-related skills and functioning.

For these reasons, and perhaps others as well, New Mexico has taken the kindergarten year quite seriously.

Full-day Kindergarten in New Mexico

Review of Legislation and Agency Rule

The 2000 Legislature passed legislation to implement voluntary full-day kindergarten programs statewide, to be phased in over a five-year period, allowing one-fifth of the kindergarten classes to become full-day each year. As required by law, the programs were first implemented in schools with the highest proportion of students most in need (based on the at-risk index in the Public School Funding Formula) and in schools with available classroom space.

At that time, a number of districts were already offering full-day kindergarten on a limited basis, funded through a variety of means, but the 2000 legislation established a state-supported program to provide full-day kindergarten in every school district. Among its provisions, this legislation:

- requires the Public Education Department (PED) to adopt rules for the development and implementation of “child-centered and developmentally appropriate full-day kindergarten programs”;
- requires school districts to apply to PED for funding; and
- requires PED to monitor the programs and notify them that failure to meet the benchmarks prescribed by PED will “result in the cessation of funding for the following school year.”

The law also authorizes PED to require schools with full-day kindergarten programs to conduct “age-appropriate assessments.”

- More specifically, the PED rule requires literacy-based pre-tests by September 30 and post-tests by April 30, with the student test data reported to PED by May 30 of each school year.
- Since school year 2003-2004, PED has required that the programs use as their assessment instrument the Dynamic Indicators of Basic Early Literary Skills (DIBELS), an instrument designed by researchers at the University of Oregon to measure student reading development. According to PED, DIBELS uses a set of standardized, individually administered measures of early literacy development to predict a student’s later reading proficiency.

Finally, the PED rule requires that school districts provide professional development to teachers, assistants, and principals in three specific areas:

- scientifically based reading research and its implications for instruction;
- best practices of English as a second language and English language learner instruction; and
- the principles of peer and expert coaching.

A study published by the Education Commission of the States (ECS) in June 2005 highlights New Mexico's program as an effective method of providing universal access to full-day kindergarten.

Full Implementation

School year 2004-2005 marked the completion of the five-year phase-in of voluntary full-day kindergarten statewide so that now students in all 89 school districts in New Mexico have access to full-day kindergarten.

For school year 2006-2007, according to data submitted by school districts and compiled by PED, 25,551 students were enrolled in full-day programs and 91 in half-day programs. Thus, during that school year 99.6 percent of kindergarten children in public schools in New Mexico were enrolled in full-day programs.

Furthermore, the enrollment in half-day programs may even be overstated. Apparently, no school districts offer half-day programs specifically; rather, the handful of students reported as half-day attend a full-day program part-time, often at the request of parents who feel that their children, for one reason or another, would be better served by attending half-day. One district, Albuquerque Public Schools (APS), requires attendance in the morning when literacy skills are emphasized. Moreover, according to district comments to the Legislative Education Study Committee (LESC) staff, some of the students reported as attending half-day kindergarten are in special circumstances: alternative schools, hospitals, or home schools. In other cases, the number reported may simply be in error.

From FY 01 through FY 05, the Legislature appropriated more than \$50.0 million in operational funds for full-day kindergarten through the Public School Funding Formula. Since then, full-day kindergarten has been fully funded as part of base program cost each year. This level of fiscal support makes New Mexico, according to ECS, one of only seven states to provide a "strong incentive" for full-day kindergarten, which ECS defines as providing more funding for full-day kindergarten than for half-day and providing a weight to full-day kindergarten that is equal to or greater than the weight provided to first grade.

The Legislature has also provided funding for facilities for full-day kindergarten. This funding has been allocated through the Public School Capital Outlay Council (\$18.3 million); the General Fund (\$5.0 million); and the proceeds of two General Obligation Bonds (for \$5.0 million each), the more recent of which was approved during the November 2004 election, after the beginning of school year 2004-2005. The Public School Facilities Authority (PSFA) reports that every full-day kindergarten class has a room, whether in a school building or a portable building that accommodates kindergarten-age children. The PSFA further reports that, as new elementary schools are built or existing ones renovated, the PSFA works with the school district to include kindergarten rooms in the permanent structures that meet the adequacy standards developed by the Public School Capital Outlay Council.

Full-day Kindergarten in Other States

According to a 2005 study by ECS, as of school year 2000-2001, nearly 63 percent of kindergarten students across the country were enrolled in full-day programs. In addition, 18 states (New Mexico among them) define full-day kindergarten in statute although the definitions vary widely; nine states require that districts offer full-day kindergarten; and two of those – Louisiana and West Virginia – require children to attend full-day programs. Since 2005, as indicated by a variety of reports from ECS and other sources, still more states have implemented or expanded full-day kindergarten evidently on the premise that it makes a good investment of state resources.

As a sample of state-level activities in 2007:

- Washington enacted legislation to phase in funding for full-day kindergarten, beginning in school year 2007-2008 with schools with the highest poverty levels, and to require full-day programs to meet certain criteria;
- the Michigan legislature is considering requiring all districts to offer full-day kindergarten; and
- Indiana included in its budget \$33.5 million for grants to help full-day kindergarten programs cover expenses in school year 2007-2008 and another \$58.5 million for school year 2008-2009.

As a sample of state-level activities in 2006:

- Delaware enacted legislation to require school districts, beginning in school year 2008-2009, to offer full-day kindergarten to any parents who want it; and
- Arizona enacted legislation to roll out state-funded full-day kindergarten over two years beginning with school year 2007-2008.

One factor often cited as a contributor to the growth of full-day kindergarten classes is the *No Child Left Behind Act of 2001* (NCLB). Although the testing to determine a school's adequate yearly progress under this federal law does not begin until grade 3, schools and teachers increasingly see full-day kindergarten as part of the foundation to prepare students for those third grade tests. Perhaps to the state's credit, New Mexico's decision to phase in full-day kindergarten statewide predates NCLB.

The increasing state interest in and inclination toward full-day kindergarten notwithstanding, in some places there is still considerable debate whether full-day kindergarten produces significantly better results than half-day kindergarten.

- In one sense, this question is moot in New Mexico because the state has already made its commitment to full-day kindergarten and because virtually every kindergarten student in the state is enrolled in a full-day program.

- In another sense, however, especially in light of the LESC’s focus on results of existing programs during the 2007 interim, the question still applies as it affords an opportunity to assess the effects of what the state has done. That opportunity is limited, however, in part because of the limited amount of state-level data. It is also limited because the data available elsewhere, though often quite extensive, are not necessarily conclusive. What ECS noted in a report in September 2004 still seems to apply: that, despite the large volume of research on the effects of full- versus half-day kindergarten, “definitive answers remain elusive.”

Short-term Effects of Full-day versus Half-day Kindergarten

It would seem reasonable to assume that, the quality being even, spending more time on something would produce better results than spending less time on it. Such appears to be the case with kindergarten as most studies have found better results – whether academically, socially, or personally – from full-day programs.

The 2004 ECS report cited above also notes that experts generally agree that there are no detrimental effects of full-day kindergarten and that those students “show significantly stronger academic gains over the course of the kindergarten year than their half-day counterparts.” More recently, another source has summarized the findings of research across the country:

In studies about the benefits of full-day kindergarten vs. half-day programs, researchers found evidence supporting stronger academic achievement and grade retention, fewer special education referrals, and improved social and behavioral attitudes.

A number of states and school districts throughout the country have conducted studies of their own kindergarten populations. One example is an analysis by the Florida Department of Education in 2005 that found that children in full-day classes made greater gains in reading and math than half-day students, even after adjusting for such factors as poverty status and class size.

At the national level, perhaps the best source of data for studies of kindergarten is the collection maintained by the National Center for Education Statistics (NCES). An extensive collection of data on a nationally representative sample of kindergartners, their families, their teachers, and their schools, this data set supports the Early Childhood Longitudinal Study – Kindergarten Class of 1998-1999 (ECLS-K), which focuses on children’s early school experiences beginning with kindergarten and continuing through grade 8. The fall 1998 base year sample contains data on nearly 23,000 children who attended approximately 1,000 schools (public and private) with kindergarten programs in school year 1998-1999.

The overall plan calls for collecting data on the same children at several points in their schooling: as they enter kindergarten, at the end of their kindergarten year, in the fall and spring of first grade, and in the spring of third, fifth, and eighth grades. According to NCES, “[t]he multifaceted data collected across the years allows researchers and policymakers to study how various student, home, classroom, school, and community factors at various points in the child’s life relate to cognitive and social development.” Moreover, as one study that makes use of the data observes, “not until [ECLS-K] has the opportunity been available to describe full-day and half-day kindergarten differences at the national level.”

One study of these data that focused on the half-day versus full-day question was published by NCES in June 2004: *Full-day and Half-day Kindergarten in the United States: Findings from the Early Childhood Longitudinal Study, Kindergarten Class of 1998-99*.

- In addition to describing the differences in instructional activities between the two formats, this study examines students' gains in reading and math under each format as demonstrated by assessments given in the fall and the spring of the kindergarten year. The authors caution against drawing causal conclusions from these data, however, because the full-day and half-day classes were not configured as experimental and control groups.
- Be that as it may, however, the authors report that the children enrolled in full-day programs made significantly greater gains in reading language arts and in mathematics over the course of the kindergarten year.

Also published in 2004 was another study of the ECLS-K data by researchers at the University of Michigan, the University of Oregon, and the Erikson Institute, *Full-Day vs. Half-Day Kindergarten: In Which Program Do Children Learn More?* These authors cite numerous prior studies comparing full-day and half-day kindergarten, most of which have "documented favorable effects for full-day programs" but many of which, they contend, contain statistical or analytical limitations.

- In brief, this study found that children who attend schools that offer full-day programs learn more in literacy and mathematics over the kindergarten year than their counterparts in half-day programs. Overall, the authors say, the results are clear: "When children's social and academic backgrounds are taken into account, as well as structural, social, and academic features of their schools, children who experience full-day kindergarten as a whole-school program are advantaged in terms of their cognitive learning . . . with less affluent children learning slightly more."
- While this fundamental finding is perhaps the most relevant to the present discussion, more particular findings may also be of interest:
 - full-day kindergarten "is neither more nor less effective for children of different social backgrounds";
 - among the regional differences, children in full- and half-day kindergarten schools in the West showed similar learning gains, and children in half-day programs in the West generally learned more than children in half-day programs elsewhere; and
 - greater gains occurred when there was more time between tests.
- This study also estimated that full-day kindergarten produces over one month of additional literacy learning and approximately one month of additional math learning. This figure may be an underestimate, however, the authors state, because in some cases the fall pre-test was not administered until as late as December, thus leaving substantial amounts of time in full-day kindergarten unaccounted for.

- Continuing this point, the study examines the ratio of time spent in full-day versus half-day programs: that is, whether full-day kindergarten is “a double-dose” of half-day kindergarten. The short answer is, No.
 - The study found that full-day kindergarten classes spend 28 percent more time on instruction in reading and language arts than half-day classes and 48 percent more time on math – approximately 15 extra minutes per day of additional instruction in each subject.
 - The teachers surveyed reported spending approximately one-third more time on instruction.
 - As the NCES study cited above also indicated, full-day kindergarten spends more time on other activities like physical education, which are also important to a child’s development, and on broadening students’ social and academic experiences.
- Finally, while they contend that their findings are statistically significant, the authors caution against making any policy decision about kindergarten based upon a single outcome, like children’s cognitive growth, because kindergarten affects so many other aspects of a child’s life and development.

Long-term Effects of Full-day versus Half-day Kindergarten

While full-day kindergarten may indeed produce better results than half-day over the course of the kindergarten year, the bigger question – and the more problematic question – is whether the benefits extend into subsequent grades. As ECS explains, there is “less agreement about the degree to which benefits gained from attending full-day kindergarten carry forward throughout a student’s academic career.” Nonetheless, ECS strongly recommends full-day kindergarten as a component of each state’s early learning and elementary school reform efforts.

Some studies have found evidence of prolonged benefits while others find either no such evidence or even indications of detrimental effects. Part of the issue is the length of time itself: that is, while longitudinal studies can be valuable, the longer the time period that the study covers, the greater the chance for variables that will affect the outcome.

Among the studies that point to extended benefits:

- a longitudinal study in a school district in Indiana showed significantly higher basic skills test scores in grades 3, 5, and 7 for students who had attended full-day kindergarten; and
- a study in Baltimore found that test scores for first- and second-graders have risen since full-day kindergarten was introduced in 215 schools in 2001.

On the other hand:

- a December 2002 study by the Northwest Regional Educational Laboratory concluded that there is no “strong evidence showing that academic gains made in full-day programs last beyond 1st grade for all students”; and

- citing a number of other studies from the early 1990s through 2006, a study by the RAND Corporation (see below) concludes, “The existing literature on the effects of full-day kindergarten on student achievement finds positive outcomes in the proximal years but little difference as children progress through school.”

In addition, two studies using the ECLS-K database have also concluded that full-day kindergarten programs do not produce lasting benefits.

- Published in August 2004, *From Kindergarten Through Third Grade: Children’s Beginning School Experiences*, another in the NCES study series, examined a cohort of children from kindergarten through grade 3. Among other things, this study found that children’s gains in reading and math during their first four years of school, whether public or private, “did not differ substantively” according to the type of program they attended (that is, full-day or half-day).
- A more recent study (2006) to use the ECLS-K database is *Ready for School: Can Full-Day Kindergarten Level the Playing Field?* conducted by the RAND Corporation. The authors say that their study “extends previous research by examining longer-term achievement outcomes, namely test scores at the end of fifth grade, and gives an indication of how the other nonacademic areas of school readiness (i. e., physical and socio-emotional development) may be related to test performance.” In addition, this study produced several findings unlike those of other studies, often in the context of the nonacademic areas.
 - To begin, this study found that students who had attended a full-day kindergarten tended to demonstrate more externalized behavior (acting up) and more internalized behavior (feeling anxious or lonely) and that they tended to have more negative attitudes toward learning, self-control, and interpersonal skills.
 - In general, this study found that full-day kindergarten had little or no effect on students’ achievement in reading or mathematics in fifth grade; however, when the study controlled for nonacademic readiness, it found that children who had attended a full-day program at kindergarten “showed poorer mathematics performance in fifth grade than did children who had attended a part-day kindergarten program.”
 - In addition, the study found “no evidence that full-day kindergarten participation enhanced mathematics and reading achievement for [poor] students” or improved their readiness for school in nonacademic areas.
 - Among the cautions, however, the authors acknowledge that the study did not control for a potential self-selection bias, in which parents with certain characteristics are more likely to choose full-day kindergarten programs; and they suggest that one explanation for the poorer showing of full-day kindergarten is that the study did not fully account for “the great variability in the quality of the full-day programs in our data.”

- Moreover, the negative findings notwithstanding, the authors of the study did find evidence to suggest “that investments in the development of nonacademic school readiness skills may not only raise overall achievement but may also narrow the achievement gap between minority and white students. Indeed, on average, white students enter kindergarten with better nonacademic skills than do blacks and Hispanics. Our findings indicate that racial/ethnic differences in achievement might be narrowed if we could enhance the nonacademic readiness skills of minority students . . . at an early age.”
- And they advise that nonacademic readiness skills are more consistently associated with home background factors than with school factors, that the relationship between these factors and academic outcomes has not been well researched, and that generalizations about full-day versus half-day programs “must be made with caution.”

Although ECS may be correct about the elusive nature of definitive answers, much of the research on the lasting effects of full-day kindergarten does cast some doubt upon the long-term return on a state’s investment in the program. A recent commentary in the *Michigan Education Report* (fall 2007) probably overstates the case: “. . . most research also indicates that the academic effects of early education programs disappear soon after children leave the programs”; however, it seems difficult to prove otherwise.

It should be noted, however, that the lack of evidence of lasting benefits in some studies does not necessarily mean that full-day kindergarten is less effective than half-day kindergarten over the long term. It may instead be more of an indication that the single-year gains must be deliberately sustained through aligned, effective programs in subsequent grades – an acknowledgement of the principle that a skill that is not practiced or reinforced is lost.

Evaluating Kindergarten in New Mexico

Somewhat prophetically, the first two questions in the list at the end of the LESC staff brief in November 2005 were:

- What evidence is there that full-day kindergarten is working in New Mexico?
- What plans are there to conduct a longitudinal study of the effects of New Mexico’s full-day kindergarten program? How might such a study be best conducted and supported?

For answers, one might turn first to PED’s statutory duty to monitor the programs (see “Review of Legislation and Agency Rules,” above).

PED’s Oversight of Full-day Kindergarten

The PED oversight of the full-day kindergarten program has been limited. The department does require annual reports from each program, but the reports are not always timely filed nor do they offer much evidence to support program quality. Although the format of the required report has changed somewhat over the years, for the most part the reports still consist of basic enrollment and demographic data; a check-off identification of assessments (in addition to DIBELS) and curricula employed, special education referrals made, and the kinds of professional development

that the teachers received; and a group of statements about the nature of the programs themselves: for example, “Following the full-day kindergarten program, our school continues to provide a sequential comprehensive literacy program in first and second grade.” After each of these statements, the reporting school merely checks “yes” or “no.” One reporting item that has not been used since school year 2003-2004 is an opportunity for respondents to add descriptive or explanatory information, especially to address highlights of their programs (see “Indications of the Effects of Full-day Kindergarten in New Mexico,” below).

Regarding professional development in particular, the reporting form for school year 2006-2007 includes a checklist containing the three kinds of professional development noted above (see “Review of Legislation and Agency Rule”) and such additional items as child development, brain research, core literacy programs, phonemic awareness, reading comprehension, vocabulary, and oral language development. Beyond compiling these reports, however, the department does not monitor the professional development offered to teachers of full-day kindergarten unless the schools are implementing the Reading First program or, perhaps, unless the schools are in the latter stages of the school improvement cycle. Nor does the department provide professional development. That task is left to the districts. To provide an example, LESC staff contacted APS.

APS focuses its professional development on teachers who are new to teaching or new to teaching kindergarten, with particular attention to developmentally appropriate teaching practices in a kindergarten setting. APS further explains that the professional development provides teachers with professional literature and addresses the following areas – planning for the learning environment, assessment, standards, curriculum, and parent engagement. Another feature of the professional development program at APS is the use of Early Childhood Mentors – master early childhood teachers who work with kindergarten teachers on a voluntary basis – and Early Childhood Leaders – teachers who receive a salary differential to attend additional professional development sessions and then work with the other teachers in their schools.

When PED has reported recently to the LESC on the quality of full-day kindergarten programs, the department has based its evaluation on DIBELS data, which are received, compiled, and reported through contract with the University of Oregon.

- During the 2004 interim, for example, the LESC received a written report for school year 2003-2004 that showed at least modest gains in most of the areas measured but that did not identify which programs met the prescribed benchmarks.
- Then in November 2005, in response to a committee request for additional information, PED testified to the LESC that some 76 percent of the full-day kindergarten programs statewide needed either some support or substantial support, according to DIBELS data.
- Since then, PED has explained to LESC staff that this support has typically taken the form of alerting the principals of the schools in question, suggesting particular programs or resources, and providing information through newsletters or other means. Given the department’s limited resources, PED explains, there are few opportunities for more direct or intensive interventions.
- Although it was intended as an accountability measure in the law, PED has never exercised the authority it was granted to withhold funding from a full-day kindergarten program that has failed to meet the prescribed benchmarks.

- Finally, as reported during the August LESG meeting, PED does intend to take a more active role in the evaluation of early learning programs beginning with school year 2007-2008, when the department plans to use the unique student identification number to track the progress of students beginning with New Mexico PreK.

In the meantime, there are several kinds of information that might be examined to obtain a sense of the effectiveness of full-day kindergarten in New Mexico.

Indications of the Effects of Full-day Kindergarten in New Mexico

The concerns noted above notwithstanding, DIBELS data continue to show generally consistent gains during the kindergarten year.

- These data illustrate that, over a five-year period (from school year 2002-2003 through school year 2006-2007), students have consistently begun at approximately the same skill levels on the four components tested by DIBELS and then demonstrated consistent growth by the end of the year.
 - For school year 2006-2007 in particular, DIBELS data show that, with few exceptions, school districts and charter schools demonstrate significant growth in the percentage of students at benchmark levels at the end of the school year compared to the levels at the beginning (see Attachment). Statewide, the average growth is 40.94 percent. In a few cases, however, there is no growth at benchmark level or even negative growth.
 - The most unusual case is one of the charter schools, Mountain Mahogany Community School, which posted a benchmark growth of -50.0 percent. As at least a partial explanation, PED reports that the school had two different principals in school year 2006-2007 and changed its curriculum in mid-year. The PED Charter Schools Bureau and the APS Charter School Office are both working with the school in hopes of improving its performance.
- Presumably, the overall growth shown by DIBELS data is attributable at least in part to children's attendance in full-day kindergarten programs; however, it is impossible to know for certain. Moreover, these data are for the kindergarten year only; they provide no follow-up into the next years.

Of course, the opportunity for a large-scale comparison of half-day to full-day kindergarten in New Mexico has passed. Such a comparison would have been possible during the first, second, and perhaps third years of the five-year phase-in; but even then the two groups would not have been truly comparable because, rather than having been randomly assigned to half-day or full-day programs, most of the children in full-day programs, at least in years one and two of the phase-in, were from schools with the greatest need.

One study in New Mexico that compared half-day with full-day kindergarten was conducted at Lowell Elementary School in APS during school years 1989-1990, 1990-1991, and 1991-1992.

- This study found that the average kindergarten student entered Lowell already a year and 10 months below grade level; and it determined that half-day students gained less than six months during the nine-month school year, whereas full-day students gained from 16 months to more than 19 months during the same period.
- As the study reports, “Comparing half day and full day programs in a variety of ways at Lowell Elementary has shown that a traditional half day program does not hold a great enough benefit for the child, as the average child makes less than a six month gain during a nine month period of time.”
- The Lowell study also included a follow-up into first grade: “By the end of their first grade year, all but one of the students remaining at Lowell and all of the children who had transferred that we were able to contact were reading at grade level or above!”

Another indication of the effectiveness of full-day kindergarten is the observations of the teachers and principals in those schools that implemented the program. Although they are strictly anecdotal and probably not statistically significant, these comments are nonetheless interesting and valuable because they express the professional judgments of the people directly involved in administering or teaching full-day kindergarten. They also provide a before-and-after picture as they are couched in terms of comparing the former half-day program with the current full-day program, either explicitly or implicitly. A convenient source of such comments is the set of district reports filed for school year 2003-2004, the fourth year of the five-year phase-in (see “PED’s Oversight of Full-day Kindergarten,” above).

- The vast majority of these comments note increased student skills in academics – reading or reading readiness in particular – as well as a higher level of confidence among the children and a generally greater level of preparation for first grade.
 - “The implementation of the Full Day Kindergarten has improved reading readiness skills, letter identification, decoding, phonemic awareness, sight words, number identification, and some students already reading. FDK also establishes expectations and procedures that allow the teacher to get to the academic areas faster: how to hold a pencil, staying awake all day, eating in the cafeteria, going to the library, going to the computer lab, keyboarding skills, exposures to reading materials.”
 - “Kindergarten students are well-integrated into whole-school activities and experiences, including performances, assemblies, field trips . . . Kindergarten students enter first grade better prepared to deal with academic, social, and operational (i.e., schedule) expectations.”
- Some of the respondents cite continued benefits in later grades, too:
 - “Every year our children are more prepared. This year’s third grade was stronger than any of the 3 previous years.”
 - “Our students are better prepared for first and second grades. We have seen an academic growth trend in the lower grades that will hopefully continue as students progress to higher grade level.”

- Enhanced student/teacher relationships were sometimes noted:
 - “. . . teachers have become more focused on providing quality academic instruction in the FDK Program.”
 - “FDK allows teachers to meet many needs both academically and emotionally that could not have been met with the short time allowed for ½ day programs.”
- Several respondents noted benefits for teachers in addition to the benefits for students:
 - “With a schedule identical to that of the rest of the staff, kindergarten teachers have the opportunity to participate in site-based ongoing professional development through grade-level collaboration, cross-grade articulation, study groups, and collaborative learning communities. These experiences allow them to reflect on their practice, share and extend their knowledge, and examine student work, all to the ultimate benefit of their students.”
 - “Kindergarten teachers are using data to drive instruction and to identify at-risk students.”
- Several of the respondents cite DIBELS data (either implicitly or explicitly) as evidence of student gains; however, the attitudes toward DIBELS as a kindergarten assessment are mixed.
 - “We found the DIBELS measure to be inadequate. It does a good job of measuring the ‘mechanics’ of reading but is inadequate in the area of language and concept development.”
 - “The DIBELS Assessment requirement . . . has been a positive move forward. I know now where my students are having trouble and I have specific strategies to use to help them excel.”
- Finally, some of the respondents cited benefits for special education students in particular:
 - “We are finding that we have [fewer] students referred for special education because we spend more time with them on quality instruction.”
 - “Full-day kindergarten also promotes inclusion/integration of students with special needs into the kindergarten program.”
 - “Students who have been identified as having learning disabilities are performing nearly at grade level expectations.”

Full-day Kindergarten and Student Proficiency in Math and Reading

One of the respondents in the school year 2003-2004 collection made this prediction: “We believe that we will begin seeing significant score increases on the third through fifth grade state mandated tests as the students who had FDK reach those grades.” Whether the prediction has been realized is difficult, if not impossible, to determine; but an attempt may be made nonetheless.

In the absence of any true longitudinal studies, by PED or anyone else, it is possible to compare the performance of students from full-day kindergarten schools to that of all students in the district in grades 3, 4, and 5 using data from the annual school district report cards published since the adoption of the current standards-based assessment.

The current standards-based assessment was first administered in school year 2004-2005. Because testing experts generally agree that results of the first year's administration of a new test are likely to be less indicative than those of subsequent administrations, LESC staff selected school year 2005-2006 as the comparison year. During that year, the first group of full-day kindergarten students (from school year 2000-2001) was in grade 5 and the second was in grade 4; and together they constituted at least two-fifths of the full-day kindergarten students statewide.

- Of the 68 schools to implement full-day kindergarten in school year 2000-2001, only 19, or 27.9 percent, posted proficiency rates in math during school year 2005-2006 either equal to or greater than the district average for all students in grades 3, 4 and 5; and only 16, or 23.5 percent, equaled or exceeded the district average in reading.
- For the second wave of full-day kindergarten schools, the picture is considerably brighter. Of 86 such schools, 37, or 43 percent, posted proficiency rates in math during school year 2005-2006 either equal to or greater than the district average for all students in grades 3, 4 and 5; and 41, or 47.7 percent, equaled or exceeded the district average in reading.
- When the first two waves of full-day kindergarten schools are combined, the comparative proficiency rates fall, of course, between the two individual rates: 56 of 164, or 34.1 percent, of full-day kindergarten schools posted proficiency rates in math during school year 2005-2006 either equal to or greater than the district average for all students in grades 3, 4 and 5; and 59 of 164, or 36 percent, equaled or exceeded the district average in reading.

Clearly, this comparison contains serious deficiencies. For one thing, it does not follow the same cohort of students (in fact, it compares schools, not students); and for another thing, it makes no attempt to account for other factors between kindergarten and subsequent grades. Thus, it cannot produce definitive conclusions, only impressions. But after the fact of full implementation of full-day kindergarten, it is perhaps the best comparison that circumstances allow.

Finally, this report should note, at least in passing, one other sign that New Mexico's full-day kindergarten program either has the potential of greater effectiveness or is already realizing that potential. As previous testimony to the LESC has shown, students have derived demonstrable benefits from the Kindergarten-Plus program, which extends the full-day kindergarten year for up to 40 additional days of instruction. And the newly enacted K-3 Plus Program hopes to carry those benefits into subsequent grades.

Background

Formal movement in the direction of full-day kindergarten in New Mexico began at least as early as 1993, when the State Senate passed SM 77, which requested that the LESC, in cooperation with the State Department of Education (SDE), study the feasibility of funding full-day kindergarten programs for those districts choosing to offer them. In testimony to the LESC during the 1993 interim, the Full-day Kindergarten Task Force that SDE formed in response to

the memorial presented its conclusion that funding full-day kindergarten programs for districts and schools that choose to implement them would be not only feasible and but also advisable. In addition, an LESC staff brief noted that the task force report “indicated that every longitudinal study on the effect of developmentally appropriate full-day kindergarten and early childhood education indicated improvement, particularly for children from lower socioeconomic backgrounds.”

The LESC continued its study of full-day kindergarten during the late 1990s. According to SDE testimony during the 1998 interim, 51 of the 89 school districts in New Mexico provided full-day kindergarten either district-wide or in selected schools. This testimony also noted findings of research that children benefit academically and socially from participation in full-day kindergarten. Committee testimony during the 1998 interim also included a position paper from the Early Childhood Interagency Action Team, listing a number of reasons in support of making public full-day kindergarten available to all children and families in the state. Another proponent of full-day kindergarten was Think New Mexico, which, in the fall of 1999, issued its inaugural publication, *Increasing Student Achievement in New Mexico: The Need for Universal Access to Full-Day Kindergarten*. These activities ultimately led to the legislation that provided full-day kindergarten statewide.

Policy Options

Given the inconsistent findings of research, the investment that the state has made, and the virtually universal enrollment in full-day kindergarten programs, policy options might focus on assurances that the program realizes its potential.

- To provide a more data-driven evaluation of the effectiveness of full-day kindergarten, and other early childhood education programs as well, the committee may wish to consider asking PED to determine the most effective and reliable single assessment – whether DIBELS or the Early Childhood Environment Rating Scale used in New Mexico PreK or yet some other assessment – to provide consistent and comparable data through several grades. Such data could then be incorporated into the Student Teacher Accountability Reporting System (STARS) as part of a research design to conduct a longitudinal study of students’ progress.
- While PED continues to collect annual reports from full-day kindergarten programs, the information in them, as noted earlier, is limited and seldom verified. Moreover, the question soliciting comments about program highlights has not appeared in the reporting form since school year 2003-2004. Therefore, the LESC might consider asking PED to add questions about follow-up in subsequent grades or to request more information to support the school’s responses to what are currently simple yes/no questions about program content and quality. Reinserting the opportunity for additional comments may be helpful as well.
- A survey of kindergarten teachers, school principals, and parents of elementary-age children could reveal satisfaction levels with full-day kindergarten and perhaps suggest useful modifications to the program. Such a survey may also identify other features of full-day kindergarten beyond the instructional one that may require attention.

- Given the importance of professional development, the LESC might consider asking PED or the Office of Education Accountability to examine the professional development provided to full-day kindergarten teachers, especially in terms of time management, to see whether teachers are making full use of the full school day.
- Now that the five-year phase-in is complete and full-day kindergarten has been available in every district for two years, the committee may wish to amend statute so that full-day kindergarten is funded not by applications from schools but like any other grade.
- According to ECS, New Mexico is one of only 12 states with separate standards for kindergarten. Some of these standards, however, predate the beginning of the five-year phase-in, and all of them predate the completed phase-in. Therefore, as part of its alignment initiative, the committee may wish to request a re-examination of the state's content standards for kindergarten to ensure (1) that they are designed to take full advantage of the full-day program and (2) that they align with the early learning outcomes expected through New Mexico PreK. This option is in keeping with a recommendation of ECS, that state policymakers ensure that kindergarten policies connect and align with policies that support children's learning experiences both before and after the kindergarten year. This option also corresponds to a finding of the RAND Corporation study: "there is some evidence that the initial academic advantages held by students in full-day programs erode if the curriculum in the upper grades is not changed to reflect the progress made during kindergarten."

**New Mexico Full-day Kindergarten
Growth by District, School Year 2006 - 2007**

DIBELS Data, University of Oregon

Beginning = Fall Assessment (Beginning of Year) / End = Spring Assessment (End of Year)

District Name	% Beginning Intensive	% Beginning Strategic	% Beginning Benchmark	N	% End Intensive	% End Strategic	% End Benchmark	N	Benchmark Growth
Alamogordo Public Schools	18.71%	42.03%	39.26%	425	5.98%	8.07%	85.95%	425	46.70%
Albuquerque Public Schools	32.97%	35.93%	29.88%	5887	17.28%	17.45%	61.75%	5829	32.20%
Anansi Charter School	7.00%	33.00%	60.00%	15	0.00%	27.00%	73.00%	15	13.00%
Animas Public Schools	0.00%	45.50%	54.50%	11	0.00%	55.60%	44.40%	9	-10.10%
Artesia Public Schools	23.11%	41.83%	35.06%	251	6.77%	9.56%	83.67%	251	48.61%
Aztec Municipal School District	19.29%	39.66%	41.05%	466	4.92%	15.55%	79.53%	462	38.48%
Belen Consolidated Schools	32.39%	44.19%	23.42%	324	9.51%	12.35%	78.15%	324	54.72%
Bernalillo Public Schools	17.37%	50.18%	32.45%	181	14.24%	16.25%	69.51%	182	37.06%
Bloomfield School District	27.44%	41.77%	23.29%	178	5.66%	7.56%	86.77%	178	63.48%
Capitan Municipal Schools	21.43%	52.38%	26.19%	42	16.67%	9.52%	73.81%	42	47.62%
Carlsbad Municipal Schools	24.51%	40.69%	34.80%	408	6.13%	8.82%	85.05%	408	50.25%
Carrizozo Municipal Schools*	7.10%	35.70%	57.10%	14	7.10%	21.40%	71.40%	14	14.30%
Central Consolidated School District	42.82%	40.57%	17.18%	437	9.58%	13.61%	76.80%	436	48.89%
Chama Valley Independent School District	28.10%	50.00%	21.90%	32	0.00%	12.50%	87.50%	32	65.60%
Cimarron Municipal Schools	18.75%	50.00%	31.25%	16	12.50%	43.75%	43.75%	16	12.50%
Clayton Public Schools	18.75%	41.67%	39.58%	48	2.13%	4.26%	93.62%	47	54.03%

District Name	% Beginning Intensive	% Beginning Strategic	% Beginning Benchmark	N	% End Intensive	% End Strategic	% End Benchmark	N	Benchmark Growth
Cloudcroft Public Schools	13.00%	32.00%	55.00%	31	10.00%	10.00%	80.00%	30	25.00%
Clovis Municipal	21.86%	36.51%	33.39%	528	9.10%	11.08%	71.41%	528	38.02%
Cobre Consolidated Schools	41.82%	34.16%	18.21%	91	11.07%	9.46%	54.46%	83	36.25%
Corona Public Schools	12.50%	50.00%	37.50%	8	0.00%	12.50%	87.50%	8	50.00%
Cottonwood Valley Charter School	11.11%	33.33%	55.56%	18	11.11%	22.22%	66.67%	18	11.11%
Cuba Independent School District	32.14%	46.43%	21.43%	28	10.71%	14.29%	75.00%	28	53.57%
Deming Public Schools	51.02%	33.60%	15.37%	238	22.93%	14.70%	62.37%	257	47.00%
Des Moines	20.00%	20.00%	60.00%	5	20.00%	20.00%	60.00%	5	0.00%
Dexter	23.53%	44.12%	32.35%	68	4.55%	1.52%	93.94%	66	61.59%
Dora Consolidated	25.00%	33.33%	41.67%	12	8.33%	8.33%	83.33%	12	41.67%
Dulce Independent Schools	23.80%	45.20%	31.00%	42	0.00%	6.70%	93.30%	45	62.30%
Elida Municipal Schools	0.00%	17.00%	83.00%	6	0.00%	0.00%	100.00%	6	17.00%
Espanola School District	43.79%	33.11%	23.09%	354	7.24%	8.12%	84.64%	357	61.55%
Estancia Municipal Schools	12.00%	20.00%	68.00%	49	0.00%	2.00%	98.00%	52	30.00%
Eunice Public Schools	45.24%	35.71%	19.05%	42	2.33%	9.30%	88.37%	43	69.32%
Farmington Municipal Schools	33.67%	38.65%	27.68%	688	10.85%	11.71%	77.44%	688	49.77%
Floyd Municipal Schools	10.00%	10.00%	80.00%	10	0.00%	0.00%	100.00%	10	20.00%
Fort Sumner Elementary	3.00%	29.00%	58.00%	24	0.00%	21.00%	79.00%	24	21.00%

District Name	% Beginning Intensive	% Beginning Strategic	% Beginning Benchmark	N	% End Intensive	% End Strategic	% End Benchmark	N	Benchmark Growth
Gadsden Independent School District	37.55%	52.16%	26.95%	460	20.77%	20.00%	75.90%	459	48.95%
Gallup-McKinley County Schools	39.82%	43.25%	22.49%	734	14.67%	17.21%	73.67%	733	51.18%
Grady Municipal Schools	0.00%	80.00%	20.00%	5	0.00%	33.30%	66.70%	6	46.70%
Grants-Cibola School District	27.41%	40.76%	31.97%	234	4.17%	4.47%	91.36%	237	59.39%
Hagerman School District*	10.50%	26.30%	63.20%	19	10.50%	5.30%	84.20%	19	21.00%
Hatch Valley Public Schools	36.36%	36.36%	27.27%	44	9.09%	11.36%	79.55%	44	52.27%
Hobbs Municipal School District	39.17%	42.26%	27.67%	621	9.51%	10.29%	89.29%	621	61.62%
Hondo Valley Public Schools	40.00%	40.00%	20.00%	5	14.00%	0.00%	86.00%	7	66.00%
Horizon Academy West	20.37%	37.04%	42.59%	54	11.11%	11.11%	77.78%	54	35.19%
House Municipal Schools	0.00%	50.00%	50.00%	2	50.00%	0.00%	50.00%	2	0.00%
Jal Public Schools	31.58%	42.11%	26.32%	19	33.33%	22.22%	44.44%	18	18.13%
Jemez Mountain	35.00%	45.00%	20.00%	20	0.00%	13.00%	87.00%	23	67.00%
Jemez Valley Public Schools	36.40%	63.60%	0.00%	11	8.30%	0.00%	91.70%	12	91.70%
Lake Arthur Municipal Schools	0.00%	28.60%	71.40%	7	0.00%	14.30%	85.70%	7	14.30%
Las Cruces Public Schools	34.94%	40.66%	28.94%	1327	10.92%	10.89%	82.73%	1330	53.79%
Las Vegas City Schools	17.68%	38.48%	43.85%	170	7.24%	14.00%	78.76%	171	34.92%
Logan Municipal Schools	20.00%	46.70%	33.30%	15	0.00%	6.70%	93.30%	15	60.00%
Lordsburg Municipal Schools	33.33%	52.38%	14.29%	42	7.14%	21.43%	71.43%	42	57.14%
Los Alamos Public Schools	7.93%	26.50%	65.58%	192	5.02%	5.78%	89.20%	193	23.62%

District Name	% Beginning Intensive	% Beginning Strategic	% Beginning Benchmark	N	% End Intensive	% End Strategic	% End Benchmark	N	Benchmark Growth
Los Lunas Schools	36.83%	40.91%	22.26%	496	19.15%	16.29%	64.56%	496	42.30%
Loving Municipal Schools	30.00%	42.00%	28.00%	50	12.00%	10.00%	78.00%	50	50.00%
Lovington Municipal Schools	43.98%	32.87%	23.15%	216	2.31%	5.09%	92.59%	216	69.44%
Magdalena Municipal Schools	No Data								
Maxwell Municipal Schools	25.00%	75.00%	0.00%	4	0.00%	25.00%	75.00%	4	75.00%
Melrose Public Schools	No Data								
Mesa Vista Consolidated School District	12.50%	37.50%	50.00%	16	0.00%	0.00%	100.00%	17	50.00%
Montessori of the Rio Grande Charter	5.56%	33.33%	61.11%	18	11.11%	22.22%	66.67%	18	5.56%
Mora Independent SD	19.51%	39.02%	41.46%	41	7.32%	7.32%	85.37%	41	43.90%
Moriarty Municipal Schools	33.33%	38.60%	28.07%	57	1.75%	3.51%	94.74%	57	66.67%
Mosquero Municipal Schools	0.00%	100.00%	0.00%	1	0.00%	0.00%	100.00%	1	100.00%
Mountain Mahogany Community School	11.11%	33.33%	55.56%	18	61.11%	33.33%	5.56%	18	-50.00%
Mountainair Public Schools	14.81%	59.26%	25.93%	27	18.52%	44.44%	37.04%	27	11.11%
Pecos Independent Schools	14.80%	44.40%	40.70%	27	11.10%	22.20%	66.70%	27	26.00%
Penasco Independent Schools	9.09%	39.39%	51.52%	33	9.09%	12.12%	78.79%	33	27.27%
Pojoaque Valley Schools	16.24%	35.90%	47.86%	117	7.69%	17.95%	74.36%	117	26.50%
Portales Municipal	34.24%	33.70%	32.07%	184	2.72%	2.72%	94.57%	184	62.50%
Quemado ISD	44.40%	44.40%	11.00%	9	0.00%	0.00%	100.00%	10	89.00%
Questa	29.00%	43.00%	28.00%	21	0.00%	60.00%	40.00%	20	12.00%

District Name	% Beginning Intensive	% Beginning Strategic	% Beginning Benchmark	N	% End Intensive	% End Strategic	% End Benchmark	N	Benchmark Growth
Raton Public Schools	28.30%	40.57%	31.13%	106	17.92%	12.26%	69.81%	106	38.68%
Red River Valley Charter School	33.00%	50.00%	17.00%	12	55.00%	27.00%	18.00%	11	1.00%
Reserve School District	37.50%	12.50%	50.00%	8	23.10%	23.10%	53.80%	13	3.80%
Rio Rancho Public Schools	14.57%	37.71%	47.72%	931	11.34%	16.15%	72.52%	931	24.80%
Roswell Independent Schools	32.46%	42.20%	33.43%	712	15.19%	9.93%	83.21%	720	49.78%
Roy Municipal Schools	0.00%	100.00%	0.00%	1	0.00%	0.00%	100.00%	1	100.00%
Ruidoso Municipal Schools	35.07%	37.31%	27.61%	134	8.96%	8.96%	82.09%	134	54.48%
San Diego Riverside	25.00%	75.00%	0.00%	16	13.00%	60.00%	27.00%	15	27.00%
San Jon Municipal Schools	No Data								
Santa Fe Public Schools	32.20%	41.03%	30.46%	735	25.90%	18.22%	63.57%	735	33.11%
Santa Rosa Consolidated Schools	28.06%	31.17%	40.28%	56	13.33%	11.11%	75.56%	45	35.28%
Silver Consolidated Schools	16.42%	50.05%	33.53%	214	16.84%	11.51%	71.66%	214	38.13%
Socorro Consolidated Schools	38.70%	32.94%	28.36%	123	16.73%	24.10%	59.18%	123	30.82%
Springer Municipal	7.69%	69.23%	23.08%	13	7.69%	23.08%	69.23%	13	46.15%
Taos Municipal Schools	16.21%	32.05%	24.40%	108	14.87%	15.38%	69.74%	95	45.34%
Tatum Municipal Schools	20.00%	40.00%	40.00%	15	35.00%	18.00%	47.00%	17	7.00%
Texico Municipal Schools	35.00%	30.00%	35.00%	40	15.00%	17.00%	68.00%	46	33.00%
Truth or Consequences Municipal Schools	43.85%	41.11%	15.04%	87	51.83%	16.42%	31.75%	87	16.71%
Tucumcari Municipal Schools	16.00%	39.00%	45.00%	98	17.00%	12.00%	71.00%	95	26.00%

District Name	% Beginning Intensive	% Beginning Strategic	% Beginning Benchmark	N	% End Intensive	% End Strategic	% End Benchmark	N	Benchmark Growth
Tularosa Municipals Schools	24.00%	49.00%	27.00%	74	19.00%	12.00%	69.00%	67	42.00%
Vaughn Municipal Schools	20.00%	40.00%	40.00%	10	8.30%	16.70%	75.00%	12	35.00%
Wagon Mound Public Schools	0.00%	66.70%	33.30%	3	0.00%	0.00%	100.00%	3	66.70%
West Las Vegas Schools	18.05%	41.76%	40.52%	117	3.41%	14.79%	81.80%	117	41.28%
Zuni Public School District	14.76%	44.61%	40.63%	89	8.51%	14.73%	76.75%	89	36.12%
STATE TOTALS	23.76%	42.31%	33.80%	20295	10.90%	14.41%	74.85%	20248	40.94%

* Used Middle of Year Data