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Moving up the Grades: Relationship between Preschool Model and Later School Success

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Abstract

A follow-up study of children who began school at age 4 (referred to as Year 1 in this study) was conducted to examine the influence of three different preschool models on later school success. These children from an urban school district were studied again in Year 5 as they prepared to leave the primary grades and in Year 6 when they were scheduled to enter fourth grade if not previously retained. The study examined report card grades, retention rates, and special education placement of 160 children at the end of their fifth year in school and 183 children at the end of their sixth year in school. The sample was 96% African American and 54% female, with 75% of the children qualifying for subsidized school lunch and 73% living in single-parent families. Academically, girls surpassed boys at the end of Year 5, and this difference persisted into the next grade level. Children whose preschool experience was more academically directed had been retained less often than peers. No differences attributable to preschool model were found.

no significant differences in academic performance of children who had experienced three different preschool models. By the end of their sixth year in school, children whose preschool experiences had been academically directed earned significantly lower grades compared to children who had attended child-initiated preschool classes. Children's later school success appears to have been enhanced by more active, child-initiated early learning experiences. Their progress may have been slowed by overly academic preschool experiences that introduced formalized learning experiences too early for most children's developmental status.

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Introduction

In the ongoing debate over education reform designed to improve academic performance of American children, the Department of Education has issued a new set of standards for mathematics. The standards are designed to be more rigorous than the current standards and are expected to be implemented in the 2014-2015 school year. The standards are a result of a process that began in 2010 and involved a wide range of stakeholders, including educators, parents, and the public. The standards are a key part of the Department's effort to ensure that all students are prepared for college and careers in the 21st century.

teacher-centered kindergartens lower in conduct and work-study habits, and perceived them to be more distractible, less willing to follow directions, and less prosocial (Hart, Charlesworth, Burts, & DeWolf, 1993). Stipek, Feiler, Daniels, and Milburn (1995) also found motivational differences favoring a child-initiated view of early education compared to a more formalized, didactic approach. They cautioned that early academic gains in reading skills associated with didactic instruction of preschoolers "come with some costs" that could have long-term negative effects on achievement. DeVries, Reese-Learned, and Morgan (1991) expressed similar concerns, arguing that temporary benefits of highly didactic approaches with young children cannot be just

kindergarten and kindergarten when children of many middle-class families leave the public school system.

At age 4, all children had attended free, full-school-day preschool in the same urban school district, with approximately 84% of the sample having been enrolled in pre-kindergarten and 16% in Head Start. Eligibility for pre-kindergarten was based solely on age and residency, whereas Head Start eligibility had an additional federal requirement of low family income. All preschool teachers of children in this study, both pre-kindergarten and Head Start, held a bachelor's degree or higher. Their median pre-kindergarten or Head Start teaching experience was approximately 10 years. As previously classified (see "Measures and Procedures" section for details), approximately 33% of children in this follow-up sample had attended preschool classes that followed a child-initiated approach, 35% attended academically directed preschool classes, and the remaining 32% had been enrolled in middle-of-the-road preschool classes that combined the other two preschool approaches. No Head Start classes in this school district used an academically directed approach. Kindergarten in this school district was predominantly academic in focus, with all but a handful of teachers indicating a strong belief that academic preparation was a more important goal of kindergarten than children's socioemotional growth (Marcon, 1990, 1993). All first-grade teachers in this school district emphasized academics, with approximately two-thirds using a highly didactic, academically directed approach (Marcon, 1990). tely 33% of

Results

School Competence: Special Education Placement and Retention

Year 5. During the primary grades (first, second, and third grades), this school district was more inclined to use retention in grade rather than special education

increased to 8% of the sample. No significant differences in special education placement were found for preschool model or sex. Special education placement following the primary grades was somewhat related to family income, $\chi^2(1, N = 166) = 2.52, p = .11$. Only half as many children who did not qualify for subsidized lunch as expected statistically were receiving special education services. Special education placement in Year 6 was not related to growing up in a single-parent family ($p = .31$). Possibly due to increases in special education placement, teachers' recommendations for retention at the end of Year 6 (10%) decreased in comparison with retention recommendations made at the end of Year 5 (16%). No significant differences were found in recommended retention at the end of Year 6 for preschool model, sex, or family income. Teachers were more likely to recommend children from single-parent families for retention at the end of Year 6 than children living in two-parent families, $\chi^2(1, N = 149) = 4.25, p = .04$.

Year 5 Report Cards

A 3 x 2 (Preschool Model x Sex) analysis of covariance (ANCOVA) was used to test for differential effects of preschool model on children's grades, sex differences, and possible Preschool Model x Sex interactions at the end of Year 5 in school. The covariate used to control for possible economic differences between children was eligibility for subsidized school lunch (based on family income and size). Although a direct measure of family income would have been a more desirable covariate, it was not available. Eligibility for subsidized school lunch should be highly correlated with family income and is a widely used estimate of family income in public school evaluation research. All reported means have been adjusted for the covariate. Missing scores were not imputed. The academic performance of children who were "on schedule" at the end of Year 5 (third grade), as well as performance of children who had been retained prior to third grade, was examined in this follow-up study.

Preschool Model. No significant main effect for preschool model was found in Year 5 overall GPA or any specific subject area for either "on schedule" or "retained" children. A statistical trend toward significant differences between preschool models was found for Year 5 citizenship grades, $F(2, 153) = 2.66, p = .07$. Overall, Model AD children received citizenship grades that were 6% and 19% lower than Model CI and Model M children, respectively. Citizenship grades reflect children's deportment in school. At the end of Year 5, children from the three different preschool models were performing academically at a comparable level. Teachers did, however, see the school behavior of children who had attended academically directed preschools as being notably poorer than that of peers.

Sex Differences. A significant sex difference was found in overall Year 5 GPA,

$F(1, 153) = 4.05, p = .05$, with girls earning a 10% higher GPA than boys. Effect size for this difference was moderate (.34). As seen in Figure 1, girls earned higher grades in each of the 11 subject areas. A significant difference was found for citizenship grades, $F(1, 153) = 12.26, p = .001$, with teachers rating girls' school behavior 24% "better" than that of boys. Effect size for the difference in citizenship grades was large (.58). At the end of Year 5, girls were outperforming boys in school.

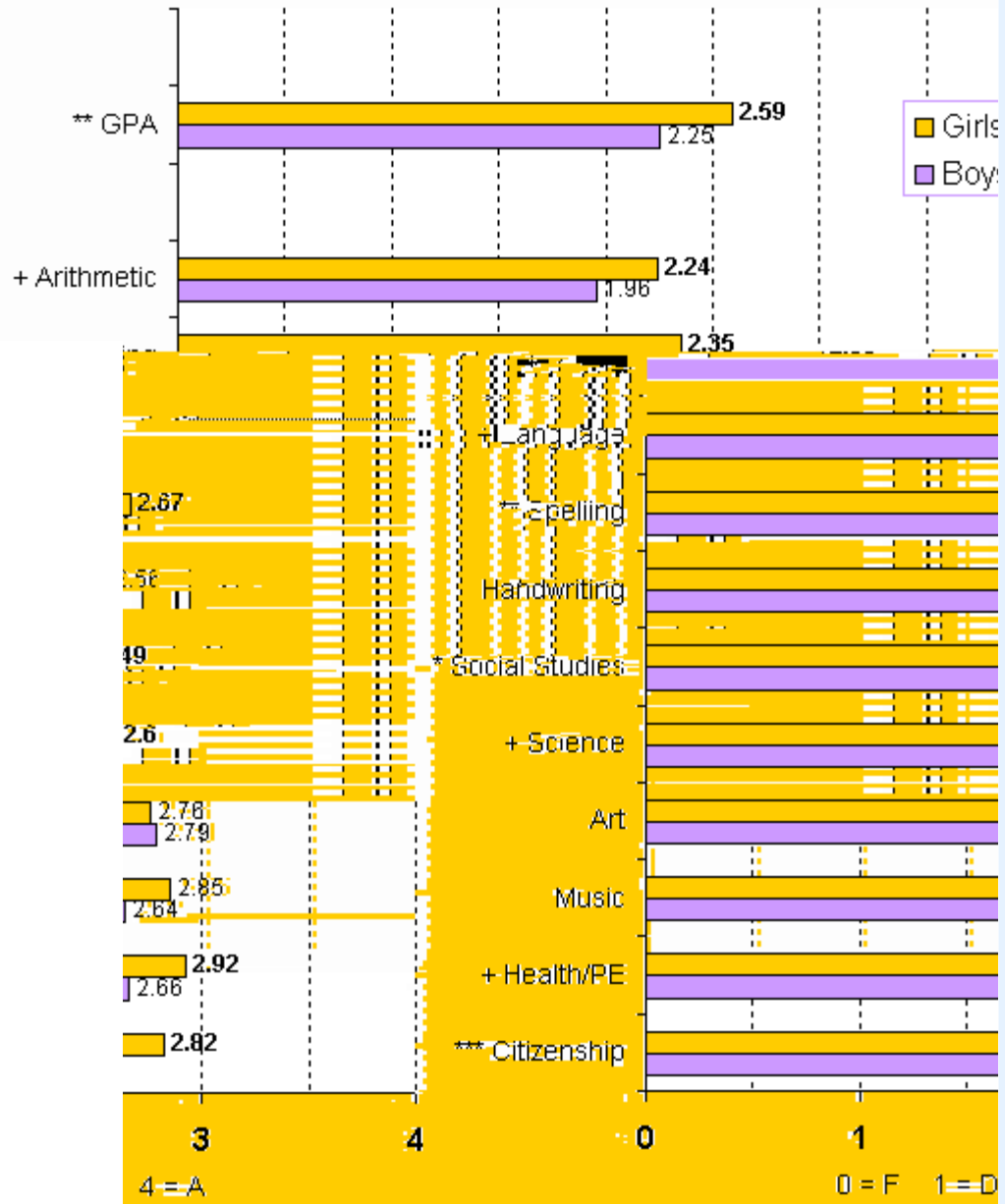
(language, spelling, art, and music), Model M boys received somewhat higher grades than did Model M girls. A similar pattern was not present in the other two preschool models.

Year 5 Summary. For children who had attended preschool and kindergarten prior to entering first grade, there was no significant difference in academic performance attributable to preschool model at the end of children's fifth year in school. Girls outperformed boys in school, but this difference was less noticeable among children who had attended "combination" preschool classes. Teachers rated boys' school behavior lower

grades in all of the 11 subject areas except art. These differences were statistically significant for reading, spelling, social studies, and citizenship. Effect sizes for sex differences were moderate to large, with the greatest effect size seen in citizenship grades (.76). A trend toward statistically significant differences between girls and boys was found in four other subject areas: arithmetic, language, science, and health/PE. At the end of Year 6, girls continued to outperform boys in school.

Sex Differences: Yr 6/Grade 4

+ p ≤ .10 * p < .05 ** p < .01 *** p < .001



decreases was found in 6 of the 11 subject areas: reading, language, spelling, science, health/PE, and citizenship. In an additional three subject areas (arithmetic, art, and handwriting), Model CI grades either remained constant or increased. Model M grades increased in only one subject area, music. Model AD grades increased in only one subject area, handwriting. Finally, all three

Transition from Yr 5/Grade 3 to Yr 6/Grade 4

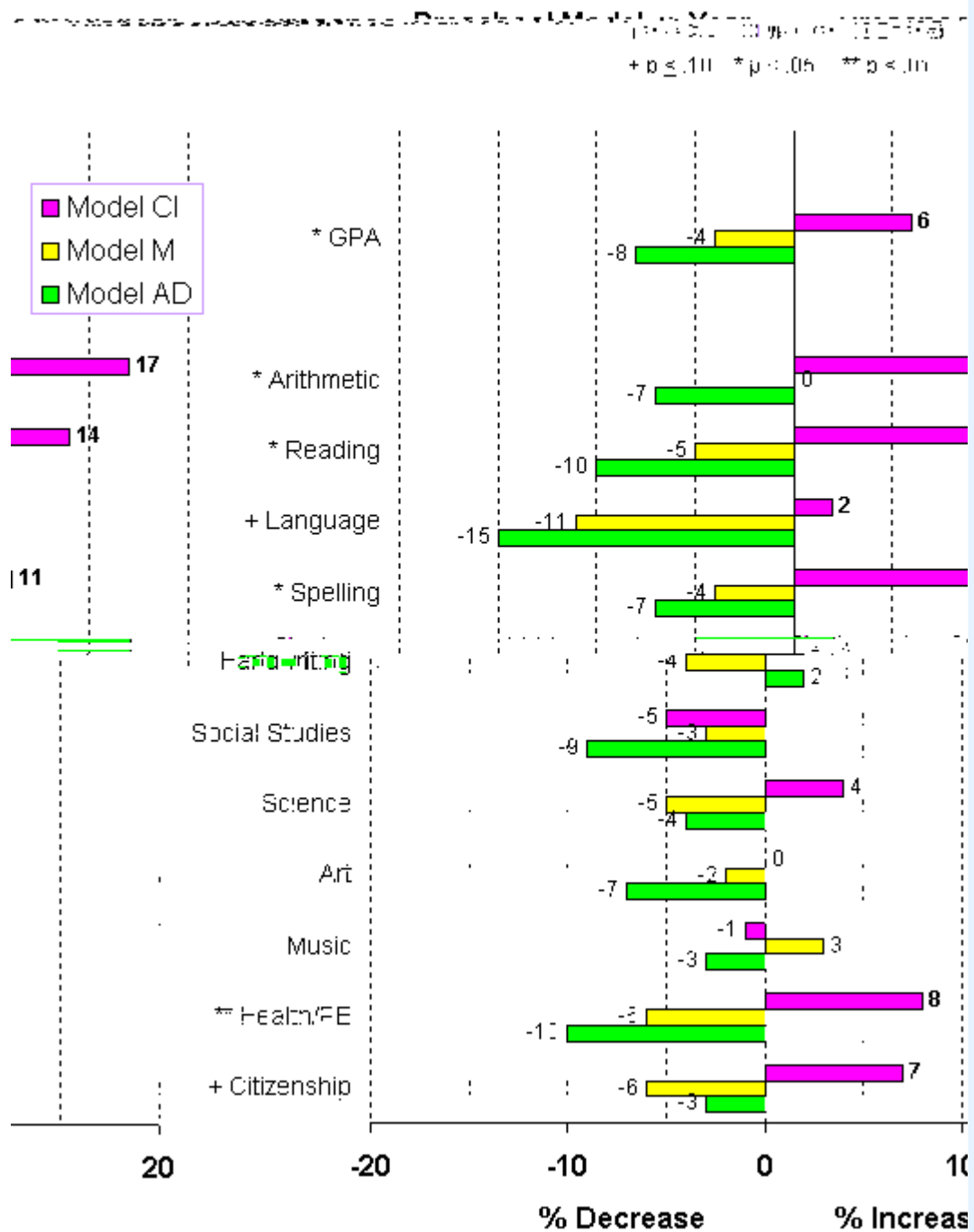


Figure 4

As shown in Table 2, four subject area Preschool Model x Year interactions were significant: arithmetic, reading, spelling, and health/PE. Statistical trends

toward significant interactions were found for language and citizenship. Only one Sex x Year interaction was found to be significant. Girls' grades in spelling increased 3%, and boys' grades decreased. A somewhat similar pattern was found for health/PE grades ($p = .07$), with boys' grades decreasing 6% and girls' grades remaining constant in health/PE. This Sex x Year interaction pattern, however, was not typical of other subject areas.

Figure 5 shows increases or decreases in boys' and girls' grades across years for each preschool model. As seen in Table 2, citizenship was the only subject area to show a significant three-way interaction between preschool model, children's sex, and year ($p = .05$). Model CI boys and girls had similar increases in citizenship grades across years (8% and 6%, respectively). The overall decrease in Model M citizenship grades was due primarily to a 19% drop in boys' grades; Model M girls decreased only slightly (2%). Citizenship grades of Model AD boys increased 26%, while girls' citizenship grades decreased 7%. The source of boys' improvement was due primarily to fewer failing Year 6 citizenship grades among boys whose school department had been previously unacceptable. Even with this improvement, however, Model AD boys remained 11% behind Model CI boys in Year 6 citizenship grades. And, although improved, these Year 6 citizenship grades for Model AD boys still remained lower than citizenship grades of girls (33%, 32%, and 18% lower compared to Models CI, M, and AD girls, respectively).

Transition from Yr 5/Grade 3 to Yr 6/Grade 4

Preschool Model x Sex x Year

* p < .05

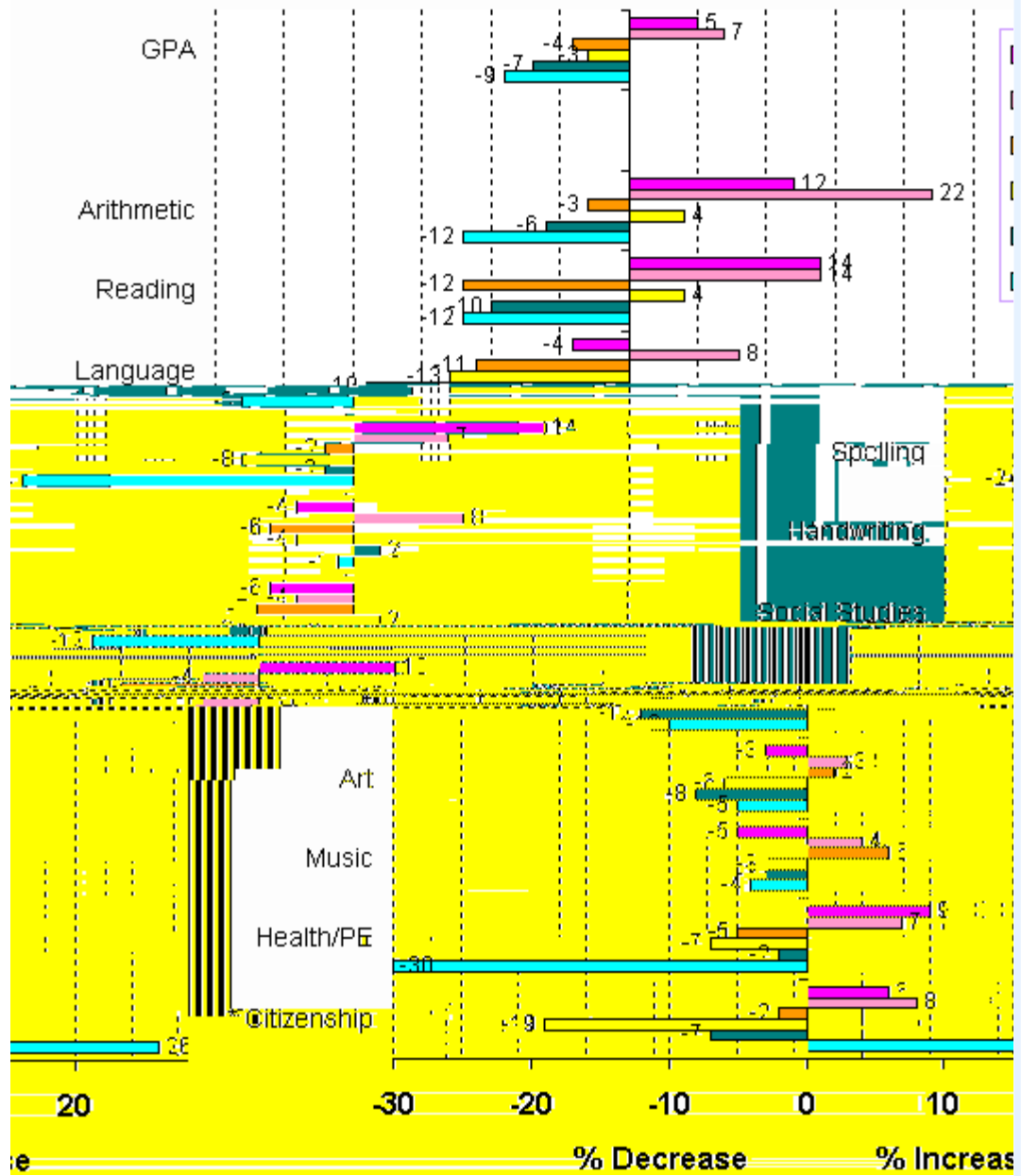


Figure 5

Discussion

may not be sufficient to sustain later academic performance when "pulling it all together" requires more than just "adding up the pieces" children have acquired along the way. Children with academically directed preschool experiences may have missed out on the more integrative experiences of peers in other preschool models. Future research to investigate each of these possibilities is needed.

By the end of the primary grades, there was little difference in the academic performance of children who had experienced three different preschool models. This finding was consistent with the developmental assumption that, by the end of third grade, most children will have attained the basic academic skills. Earlier limitations associated with a combination approach had been overcome, and children were generally academically comparable and on "even footing" when they entered the transition to the later elementary school grades. What happened on the other side of this transition? Why did academic performance of children from academically directed preschool classes begin to decline? The difference

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