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The Differences between Retained and Promoted Children in Educational Services Received

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Abstract

The purpose of this study was to determine whether students retained in first grade, relative to similarly low achieving students who were promoted, differed in the number of remedial educational services received by students in the year pre- retention year and in the repeat year. Study participants were 769 relatively low achieving first grade students, of whom 165 were retained in first grade and 604 were promoted. Controlling for students' conditional probability of being retained, based on propensity scores calculated prior to retention, retained students received the same number of services as promoted students during the pre-retention year. The following year, when retained students were in first grade and promoted students were in second grade, retained students received fewer services than promoted students. Furthermore, retained children had a larger decrease in services from year 1 to year 2. These data support the notion that grade retention is being employed as the primary intervention instead of a component of a more comprehensive remediation plan.

Grade retention is a common practice in schools today. Grade retention, also called repeating a grade, is the act of placing a student in the same grade for a second year. The practice of grade retention has been used for over 100 years in the schools, ever since the concept of sorting children by grade level was established (Beebe-Frankenberger, Bocian, MacMillan, & Gresham, 2004). Its popularity as a method to help students who have not mastered their grade's curriculum has steadily increased, becoming a common practice particularly in the last 30 years (McCollum, Cortez, Maroney, & Montes, 1999). This trend has been encouraged by the federal government; in his 1997, 1998 and 1999 State of the Union addresses, President Bill Clinton urged for an end to social promotion and an increase in standardized testing in order to show that students were meeting standards (Picklo & Christenson, 2005). This sentiment was put into law with the passage of No Child Left Behind in 2001, which holds schools accountable for student success and closing achievement gaps (Jimerson et al., 2006). As of 2007 nearly 10% of students in grades kindergarten through eighth grade had been retained in their educational career (Planty et al., 2009).

Beebe-Frankenberger and colleagues (2004) noted that the decision to retain a student is often based on assumptions that all children can be successful in their curriculum, each grade level is significantly different, and that children can become successful if given extra time in the grade level. Although failure to master grade-level academic skills is the most common reason for retaining a student (Picklo & Christenson, 2005), students are sometimes retained for non-academic reasons. In kindergarten, for example, children are

often retained for behavioral reasons, being considered too immature to handle the social and behavioral expectations of older grades and needing more time to develop (Hong & Yu, 2008). The majority of teachers in primary grades support the retention of children based on immaturity (Tomchins & Impara, 1992).

Grade Retention Research

The research base on grade retention shows that in most cases the student does not benefit from being retained. In Holmes's meta-analysis (Holmes, 1989), out of 63 studies on the effects of grade retention, 54 showed that grade retention had a negative effect on students. Negative effects were found for academic achievement, personal adjustment, self-concept, attitude toward school, and school attendance. Jimerson's (2001) meta-analysis of retention research done in the 1990s found similar results. Of 20 studies on the effects of retention, 16 reached negative conclusions, showing poor outcomes on academic and behavioral indicators. Other studies have shown that retention has long term negative effects, with increased rates of delinquency, dropout rates, and employment outcomes (Picklo & Christenson, 2005).

The research on grade retention is not conclusive. Lorence (2006) examined Holmes's and Jimerson's meta-analyses and concluded that the majority of the studies had design flaws that make them unreliable, and that newer, more methodologically sound studies show a less negative or positive effect of retention on grade retention. A recent meta-analysis of studies published from 1990 to 2007 found that studies that provide better controls for pre-retention differences between retained and promoted students yield less negative (or more positive) effects for retention (Allen, Chen, Willson, & Hughes, 2009). It has also been considered that grade retention as a concept is not flawed; rather, the children who are retained have characteristics that may not be best served by retention (Beebe-Frankenberger et al., 2004).

A solid support system may help children who are retained. In Holmes's (1989) meta-analysis, he found that in the relatively few studies in which retention was associated with positive outcomes, students at-risk for retention tended to be identified early and given special help. In the year they repeated the grade the students were put on individualized remediation plans and placed in classrooms with smaller student-teacher ratios. No study, however, has examined the level of remedial educational services received by retained and promoted students in the year pre-retention and post-retention.

An understanding of the services that retained students receive is important because considerable evidence shows that targeted interventions help struggling students improve their academic performance. Early studies demonstrated that in-school tutoring programs improve both the performance and attitudes of participants (Cohen, Kulik, & Kulik, 1982). The impact of peer tutoring on academic success has also been demonstrated (Utley & Mortweet, 1997). More recent studies have shown positive effects of small group or one-on-one structured programs such as Reading Recovery (D'Agostino, 2004) and Reading Rescue (Ehri, Dreyer, Flugman, & Ross, 2007).

Retention and Remediation Policies

It is important to understand the context of grade retention decision making. As previously noted, students may be retained for academic as well as behavioral reasons. In many districts, including the districts that participated in the current study, retention decisions are made at the school level based on academic data and other information on the child.

Retention and intervention decisions, while usually made locally, are influenced by state and national policies. Recent legislation in Texas, the site of the current study, establishes criteria for grade retention and mandates remedial instruction for students who are not

meeting minimum grade level competencies. Specifically, in 1999, the 76th Texas Legislature passed the Student Success Initiative (SSI), TEC §28.0211, in order to ensure that all students are successful in core academic subjects. According to SSI, success is defined by passing a standardized test created by the state (currently the Texas Assessment of Knowledge and Skills, or TAKS). In grades 5, 8, and 12, passage of one or more TAKS tests is required for promotion; if after three attempts a student still does not pass the test, the student must be retained, unless it is determined that the student can catch up in the next year. A Grade Placement Committee (GPC) must be assembled to make all decisions. SSI requires that any student who is at risk for not meeting grade level standards be provided “accelerated instruction.” SSI leaves the exact type of instruction up to the school, but does require that any pull-out group where this instruction is done must have a student-teacher ratio of 10:1 or lower. If a student does not meet standards after three attempts, the GPC must create an accelerated instruction plan (AIP) that details the accelerated instruction that will be given throughout the next school year.

In addition to the requirements put in place by SSI, Texas statutes are in place to address earlier grade levels. Since 1999, students in grades kindergarten through third grade have been required to be tested on their reading proficiency using a state-approved assessment. Students who are not reading on grade level are required to receive remedial instruction. The laws passed by Texas make it clear that while retention is being used as a tool to increase student success, it is not being used in isolation. These laws acknowledge that students at-risk for grade retention need extra academic supports during the pre-retention year and, perhaps, beyond. Other states have enacted similar legislation requiring remedial services to students at-risk for grade retention (Florida Department of Education, 2005). However, systems to monitor implementation of policies requiring remedial or “accelerated” instruction are virtually non-existent (Powell, 2008).

Purpose of study

The purpose of this study is to compare educational services received both during students’ first year in first grade and the following year for students retained in first grade and for students promoted to the second grade. Three research questions were used in guiding this research: a) Do retained and promoted students receive a similar number of services during the baseline year, when all students were in first grade for their first time? b) Do retained students and promoted students receive a similar number of services during the second year, when retained students are in first grade and the promoted students are in second grade? and c) Is the change in number of services between the first and second year the same between the retained and promoted students?

Methods

Participants

The participants in this study were recruited as two sequential cohorts, in fall 2001 and fall 2002, as part of a longitudinal study on the effects of grade retention. The participants were first-grade students enrolled in one of three public school districts in Texas (1 urban and 2 small city). During the 2001–02 and 2002–03 school years, public schools in Texas were required to assess the literacy skills of all students in grades K-2 who did not meet one of several exemptions (e.g., special education status; not Spanish or English speaking) using one of several literacy measures approved by the Texas Education Agency. The three districts participating in the current study each used a different but similar measure. Each measure assessed such early literacy skills as letter identification, word naming, oral comprehension, writing vocabulary, and phonological awareness. Children who were assessed by the district as having greater language proficiency in Spanish than in English

were administered the Spanish version of the measure the district used. Children's scores on the literacy measure were standardized across all first grade students in that district. Children with scores falling below the district median (i.e., z score less than 0) were eligible for participation in the study. A total of 784 students were recruited into the larger study; of these, 769 had data available on their educational services and retention status and were thus included in the current study. The sample (52.4% male) was similar to the 1374 students who met student inclusionary criteria on a range of demographic variables. Of the 769 participants, 165 were retained at the end of their first grade year, and 604 were promoted. Descriptive information for retained and promoted students are provided in Tables 1 and 2.

Across all three districts, retention decisions in first grade are based primarily on a combination of performance on benchmark tests of literacy and teacher grades in reading and language arts. The recommendation is made by a committee consisting of the teacher and principal, at a minimum. According to conversations with school administrators in each district, although the school may retain a child even if the parent objects to that decision, the school will frequently acquiesce to the parent's wishes to advance the child to the next grade. Similarly, the schools will also acquiesce to a parent's request to retain a child who is obtaining passing grades and scores on the district literacy test.

Measures

Each participant's teacher was asked to fill out a survey about the educational services that the child received that year. The teacher indicated whether each of seven services was received and for how many minutes a week the student received them. Services that were available to all children in a classroom or grade, such as peer mentoring, were excluded as we were interested in services that were not routinely provided to students at a given school. The educational services on the survey were reduced class size, one-to-one tutoring by an adult during the school day, tutoring by a peer/older student during the school day, remedial instruction outside of the classroom during the school day, small group intensive tutoring, remedial instruction before or after school, and one-to-one tutoring by an adult before or after school. This survey was administered annually for each student. Responses were coded by two individuals who established inter-rater reliability above kappa = .80. They were then converted into two variables that were used in the study. First, the total number of different services that each student received was calculated by adding up all services that were provided for any amount of time. We also calculated the number of minutes each student received services during the school year, but the resulting scores were highly skewed. A service such as reduced class size takes place every minute of the school day, giving students with that service a much higher minute total than others and a possible false perception that they received more instructional support than other students. Thus the following analyses used only the total number of services received during the school year.

Propensity Scores

Students are not randomly assigned to grade retention. Students who are retained differ from students who are promoted on a wide range of social, behavioral, demographic, and cognitive variables. These differences may also be associated with students' eligibility for, or selection into, various remedial services during the pre-retention and post-retention year. Because we were interested in the unique association between retention status and services provided, we wanted to adjust for these numerous differences between retained and promoted students. Traditional methods of adjustment (e.g., entering a number of separate covariates as a block in regression analyses) are limited since they can only use a limited number of observed covariates (Shadish et al., 2002). To solve this problem, recently researchers have employed propensity scores to minimize the effect of pre-existing differences between retained and promoted students (Wu, West, & Hughes, 2008b; Hong &

Yu, 2008). A propensity score is defined as the conditional probability of assignment to a particular treatment (i.e., retention versus promotion) given a vector of observed covariates (Rosenbaum & Rubin, 1983). It is a scalar function of observed covariates that summarizes information required to balance the distribution of the covariates. In short, a propensity score is a parsimonious way of reducing bias because it generates a single index—the propensity score—that summarizes information across potential confounds.

Propensity scores were calculated using a logistic regression equation in which retention status (scored 0 = promoted and 1 = retained) was regressed on 72 predictor variables that represent the wide range of variables associated with students' academic achievement. The 72 variables used to compute propensity scores were collected when all (769) students were in first grade, prior to any child being retained in grade. These 72 variables were selected to be as comprehensive as possible, including variables that have been shown in prior research to be related to early grade retention or to early academic achievement. These variables came from teacher questionnaires, parent questionnaires, child interviews and child testing, school records, and peer sociometric testing. They measure cognitive abilities, academic achievement, family background, peer relationships, home-school relationship, psychosocial adjustment, and personality. The full list of variables is available from the second author.

All children who spoke any Spanish (according to their teacher) or who were in bilingual classrooms or were classified as Limited English Proficient were administered a test of English and Spanish proficiency by a bilingual examiner in order to determine the language in which the child was tested. Similarly, parents of students with Limited English Proficiency were given both English and Spanish forms of questionnaires.

Details on the calculation of propensity scores are found in Wu, West, & Hughes (2008b). The larger the propensity score, the more likely a student is to be retained. For the 165 retained children, the propensity score ranged from .0034 to .9892 with mean = .5402 and $SD = .2923$. For the 504 promoted children, the propensity score ranged from .0003 to .9179 with mean = .1258 and $SD = .1632$. Of the retained children, 57.6% had propensity scores larger than .50, while only 5.5% of the promoted children had propensity scores larger than .50. In summary, propensity scores were used as a covariate in the current study to minimize the differences between retained and promoted students, thereby providing a test of the unique association between retention status and services received, above a child's pre-retention vulnerability to be retained. Evidence of the effectiveness of the propensity score is provided by the finding that when propensity scores were used as a covariate, there was no longer a statistically significant difference between retained and promoted students in reading achievement [$F = 1.401$, $p = .237$] and math achievement [$F = .286$, $p = .593$].

Data Analysis

It was important that the data analysis take into consideration the nested structure of our data. Each school can have somewhat different policies for retaining students, different services available to students, and different criteria for selecting students to participate in services. Thus, services that are offered to a student can vary from school to school. The 769 students in this study attended 37 different schools, with a mean cluster size of 21.9 ($SD = 15.23$), with a range of 1–57. The intraclass correlation coefficient (ICC) for the baseline year is 0.135, indicating that 13.5% of the variance in services received can be explained by the school attended. Using Muthen and Satorra's (1995) formula, $1 + [(average\ cluster\ size - 1) \times ICC]$, the design effect is 3.72. According to Maas and Hox (2004), a design effect greater than 2 will lead to biased results in a single level analysis because observations are not independent. In order to eliminate the bias created by the nested structure of the data, the cluster feature in Mplus was used (Muthen & Muthen, 2007). The cluster feature adjusts the standard errors based on the nested structure of the observations, resulting in less biased

results. School was employed as the cluster variable. Regression analysis conducted in Mplus was used to answer all three research questions, with the school used as a cluster variable to account for the variation in schools among the student sample. Retention status was coded as 0 (promoted at end of first grade) and 1 (retained in first grade).

Results

Do retained students receive more services than promoted students during the baseline year, when all students were in first grade for their first time?

Number of services received in Year 1, when all students were in first grade, was regressed on propensity score and retention status. Retained and promoted students, after considering propensity to be retained, do *not* differ during the first year in first grade in the services provided. The effect of propensity on the number of services received in year 1 was statistically significant [$\beta = .214$, $p < .001$]. This finding supports the assumption that the more a child is struggling and at risk for being retained, the more services the child will receive. The effect of retention status on the number of services received in year 1, above the effect of propensity, was not statistically significant [$\beta = -.091$, $p = .12$]. After controlling for students' propensity scores (i.e., an index of students' vulnerability for grade retention), students who were subsequently retained in first grade and students who were subsequently promoted to second grade did not differ in the number of remedial services received.

Do retained students receive more services than promoted students during the second year, when retained students are in first grade and the promoted students are in second grade?

The number of services received during Year 2 (when retained students were repeating first grade and promoted students were in second grade) was regressed on propensity scores. After accounting for propensity to be retained, children who were retained received fewer instructional services during the repeat year than their promoted peers. The effect of propensity scores on number of services received was statistically significant [$\beta = .297$, $p < .001$], indicating that students who were at greater risk to be retained in Year 1 received more services than students at less risk. The effect of retention status, above propensity scores, on number of services received was also statistically significant [$\beta = -.017$, $p = .03$]. Students who were at-risk but were promoted to second grade received more services than comparable students who were repeating first grade.

Is the change in services between the first and second year the same between the retained and promoted students?

First we examined whether there was an overall change in number of services received between Year 1 and Year 2. Both groups had a significant decrease in services (promoted student- $t = 6.345$, $p < .001$; retained students $t = 3.110$, $p = .002$); whether students were promoted to second grade or retained and stayed in first grade, they were given fewer support services than they had the year before. To determine if retained and promoted students differed in change of services, we regressed Year 2 number of services on propensity scores, Year 1 number of services, and retention status. Controlling for both propensity scores and the number of services received in year 1, retained students received fewer instructional services during their repeat year, relative to promoted peers. [$\beta = -.017$, $P = .03$]. That is, the decrease across years in number of services received, above covariates, was greater for retained students than for promoted students.

Discussion

Implications for Educational Policy and Practice

The results of this study give insight into how schools help students who are struggling. In the first year of first grade, students were given services based on their vulnerability to be retained. Presumably, students who had high propensity scores (i.e., were at high risk for retention), received more services in order to help them raise their chances of success.

The results for Year 2 lead to questions and concerns about how instructional resources are allocated to retained and promoted students. One assumes that the second grade curriculum is more challenging than the first grade curriculum. If a student was at high risk for retention in first grade but was promoted, it is likely that the student would need extra help in order to meet these challenges. A student who was retained, however, is not only being exposed to easier material, but is seeing the material for the second time. The retained student, it would seem, would have an easier time and would not require the same level of services as promoted students in order to meet grade expectations. This philosophy is reflected in the final set of results, which show that promoted students receive more services in Year 2, relative to retained students. Furthermore, the decrease in level of services from year 1 to Year 2 is greater for retained than for promoted students. While study results may seem logical, upon closer analysis, these findings suggest that retained students may be deprived of effective remedial services. It may be ineffective to treat retention as a “do-over” year that assumes that the second time around the student will learn the material and stay on grade level in the future. The fact that retained students receive fewer services during the repeat year than do promoted students suggests that retention may often be treated as *the* intervention to solve students’ academic problems. This finding raises the concern that instead of looking at why the child failed first grade, the school is simply hoping that the repeat year will permit the child to acquire the academic skills needed to succeed at higher grades. Many students are more carefully assessed to determine the nature of their difficulties only after retention fails to serve its intended purpose- a one time adjustment that puts the students on a more favorable academic trajectory (Tomchin & Impara, 1992). Prior research reports that over half of students receiving special education services were retained before they were diagnosed with a disability (McLeskey & Grizzle, 1992; Beebe-Frankenberger et al, 2004); for these students, schools may use retention as a general intervention before further evaluating students’ needs.

Despite what has been shown about the need for supports, schools and teachers often believe that retention in itself is the solution to help struggling students. In Tomchin and Impara (1992)’s study on teacher attitudes on retention, teachers in grades K-3 held similar views on the value of grade retention. These teachers believed that retention is an effective means of catching up a student who has fallen behind, and that it should be done when a student is not passing more than one core academic subject. They believed that success in the retention year would not only help a child academically, but emotionally as well, helping them become more confident in themselves and their abilities. A comment from a school administrator in the current study represents this view. She stated that students who are likely to be retained are not recommended for summer schools because “the child has the entire next year to catch up.” Unfortunately, the existing literature on retention effects provides limited support for this reasoning. For example, in a recent study conducted with this same longitudinal sample, retention in first grade did boost academic achievement in reading and math in the short term, relative to one’s grade mates; however, this short term benefit dissipated with increasing years. Furthermore, when retained students were compared to their same age, promoted peers, they exhibited a lower rate of growth in reading and math (West, Wu, & Hughes, 2008a).

Researchers have argued that if a child is to be retained, extra supports should be in place to keep the child from failing again (McCoy & Reynolds, 1999). Schools need to be aware of the ramifications of retaining a student. Because of the possible negative academic and behavioral effects of retention, it should be used as a last resort and not an early intervention. There are many interventions that have been proven to be successful with struggling students who are at risk for school failure that can and should be used before retention is considered (for reviews of evidence-based strategies for remediating academic problems see Algozzine, Ysseldyke, & Elliott, 2002; Epstein, Atkins, Cullinan, Kutash, & Weaver, 2008; and Evertson, Emmer, & Worsham, 2006). School-wide models that emphasize (a) screening all children for academic and behavioral problems, (b) monitoring the progress of children at risk for difficulties in these areas, and (c) providing increasingly intense intervention based on response to progress monitoring assessments reduce the need for retention and social promotion (see Fletcher & Vaughn, 2009).

When educators and parents decide it is in the child's best interest to repeat a grade, supports should be in place for them to succeed and continue this momentum in later grades. Because retained students often do not have the cognitive ability to simply catch up with their peers (Jimerson et al, 2006), this support is vital to their success. Assuming a student is fine because they are not struggling as much as they had prior to retention ignores the reason that the student failed in the first place. Schools must support their retained students and give them the services they need to be strong learners throughout their education.

Retention Decisions and Models

Research has shown that two different approaches are taken when schools make a decision about whether to retain a student. Beebe-Frankenberger et al. (2004) noted that while many of the struggling second graders in their study were retained that year, similarly weak students were promoted with the note to future teachers that the child was at risk for failure. This expresses the approach most commonly seen in schools, a deferred retention. In this situation, a student is retained after a period of academic difficulty; this could also be referred to as a "wait-to-fail" model because the child is not retained until he or she has exhausted any chances of success.

A second approach might be referred to as preemptive retention. Preemptive retention occurs when a child has passed the grade level, but the school believes that the child will fail in the future. As previously mentioned, other factors besides academic achievement are often used in making the decision to retain a student; if for example a child is below average (but is passing) in reading, but is seen as being immature compared to his peers, the decision to retain might be made based on the concern that his maturity level will affect his ability to pass the following year.

Preemptive retention may not just be related to student characteristics; with the passage of high-stakes laws in states such as Florida and Texas, the retention decisions might be influenced by outside factors. Luckett (2007) found that elementary schools in Texas that improved their accountability rating (which are largely determined by student passing rates on TAKS) had higher retention rates than schools whose ratings stayed the same or decreased; this situation was particularly seen in grades before the TAKS test is given. In addition, some high schools have retained students in ninth grade in order to keep them from taking TAKS and negatively affecting the school's ratings (Miller, 2001). This raises a serious question as to whether some students are retained to improve a school's passing rate instead of to enhance a student's school success.

Limitations

A limitation to this study is the measure of remedial services. As previously noted, the selection of number of services provided instead of minutes of services was made because the distribution of data on minutes of services was highly skewed. Use of number of services raises its own issues. Two students could receive the service of small group instruction, for example, but one could have had it for 30 minutes while the other had it for an hour. Our measure does not account for this variation. In addition, the number of services, as well as the time spent receiving services, does not indicate the quality of the instruction received. For example, a student who had a peer tutor during independent work for a half hour a day did not receive the same level of services as a student who received intensive one-on-one instruction in his or her particular reading weakness for that same half hour a day. Whereas the number of services received by a student is valuable information, more information could be considered in future studies to better understand what is offered to retained and promoted students.

Future Directions

This study is the first step in understanding how schools address the needs of students at-risk for grade retention, both prior to and after retention decisions are made. Future research should obtain more detailed information on the quality and quantity of services provided to students. Obtaining such information is a challenge, because schools offer different programs, and there are likely to be varying levels of implementation and fidelity of programs provided. An attempt should be made to understand these realities and better describe services provided to retained and promoted students.

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References

- Algozzine, B.; Ysseldyke, JE.; Elliott, J. Strategies and tactics for effective instruction. Longmont, CO: Sopris West; 2002.
- Allen C, Chen Q, Willson V, Hughes JN. Quality of design moderates effects of grade retention on achievement: A meta-analytic, multi-level analysis. *Educational Evaluation and Policy Analysis*. 2009; 31:480–499. [PubMed: 20717492]
- Beebe-Frankenberger M, Bocian KM, MacMillan DL, Gresham FM. Sorting second-grade students: differentiating those retained from those promoted. *Journal of Educational Psychology*. 2004; 96:204–215.
- Cohen PA, Kulik JA, Kulik CC. Educational outcomes of tutoring: A meta-analysis of findings. *American Educational Research Journal*. 1982; 19:237–248.
- D'Agostino JV. A meta-analysis of Reading Recovery in United States schools. *Educational Evaluation and Policy Analysis*. 2004; 26:23–38.
- Ehri LC, Dreyer LG, Flugman B, Gross A. Reading Rescue: An effective tutoring intervention model for language-minority students who are struggling readers in first grade. *American Educational Research Journal*. 2007; 44:414–448.
- Epstein, M.; Atkins, M.; Cullinan, D.; Kutash, K.; Weaver, R. Reducing Behavior Problems in the Elementary School Classroom: A Practice Guide (NCEE #2008-012). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education; 2008. Retrieved 5-1-2009 from <http://ies.ed.gov/ncee/wwc/publications/practiceguides>
- Evertson, C.; Emmer, E.; Worsham, M. Classroom management for elementary teachers. 7. Boston: Allyn & Bacon; 2006.

- Fletcher JM, Vaughn S. Response to intervention: Preventing and remediating academic difficulties. *Child Development Perspectives*. 2009; 3:30–37.
- Florida Department of Education. Press Release. 2005. Retrieved Oct. 16 2008 from http://www.fldoe.org/news/2005/2005_12_13.asp
- Holmes, CT. Grade level retention effects: a meta-analysis. In: Shepard, LA.; Smith, ML., editors. *Flunking Grades: Research and Policies on Retention*. Philadelphia: The Falmer Press; 1989. p. 16-33.
- Hong G, Yu B. Effects of kindergarten retention on children's social-emotional development: an application of propensity score method to multivariate, multilevel data. *Developmental Psychology*. 2008; 44:407–421. [PubMed: 18331132]
- Jimerson SR. Meta-analysis of grade retention research: implications for practice in the 21st century. *School Psychology Review*. 2001; 30:420–437.
- Jimerson SR, Pletcher SW, Graydon K, Shnurr BL, Nickerson AB, Kundert DK. Beyond grade retention and social promotion: promoting the social and academic competence of students. *Psychology in the Schools*. 2006; 43(1):85–97.
- Lorence J. Retention and academic achievement research revisited from a United States perspective. *International Education Journal*. 2006; 7:731–777.
- Luckett, KA. Retrieved from ProQuest Dissertations & Theses. 2007. An examination of student retention patterns and change in AEIS campus accountability ratings for Texas elementary schools with first to fifth grade. (AT 3273642)
- Maas CJM, Hox JJ. Robustness issues in multilevel regression analysis. *Statistica Neerlandica*. 2004; 58:127–137.
- McCullum, P.; Cortez, A.; Maroney, OH.; Montes, F. Failing Our Children- Finding Alternatives to In-Grade Retention. 1999. Retrieved July 20, 2008, from <http://www.idra.org/Research/ingrade.htm#Ingrade>
- McCoy AR, Reynolds AD. Grade retention and school performance: An extended investigation. *Journal of School Psychology*. 1999; 37:273–298.
- McLeskey J, Grizzle KL. Grade retention rates among students with learning disabilities. *Exceptional Children*. 1992; 58:548–554. [PubMed: 1592080]
- Miller DW. Scholars say high-stakes tests deserve a failing grade. *The Chronicle of Higher Education*. 2001; 47:A14–A146.
- Muthén, LK.; Muthén, BO. *Mplus User's Guide*. 5. Los Angeles, CA: Muthen & Muthen; 1998–2007.
- Muthen BO, Satorra A. Technical aspects of Muthen's LISCOMP approach to estimation of latent variable relations with a comprehensive measurement model. *Psychometrika*. 1995; 60:489–503.
- Picklo DM, Christenson SL. Alternatives to retention and social promotion: the availability of instructional options. *Remedial and Special Education*. 2005; 26(5):258–268.
- Planty, M.; Hussar, W.; Snyder, T.; Kena, G.; KewalRamani, A.; Kemp, J.; Bianco, K.; Dinkes, R. *The Condition of Education 2009 (NCES 2009-081)*. National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education; Washington, DC: 2009.
- Powell, HA. *Dissertation Abstracts International: The Humanities and Social Sciences*. Vol. 68. 2008. Third grade retention and Florida's pupil progression plan: Individual and school characteristics associated with long-term outcomes in reading performance; p. 4651(UMI No. 3292572)
- Raudenbush, SW.; Bryk, AS. *Hierarchical Linear Models: Applications and Data Analysis Methods*. Thousand Oaks, CA: Sage; 2002.
- Tomchin EM, Impara JC. Unraveling teachers' beliefs about grade retention. *American Educational Research Journal*. 1992; 29:199–223.
- Utley CA, Mortweet SL. Peer-mediated instruction and interventions. *Focus on Exceptional Children*. 1997; 29(5):1–23.
- Wu W, West SG, Hughes JN. Effect of retention in first grade on children's achievement trajectories over four years: A piecewise growth analysis using propensity score matching. *Journal of Educational Psychology*. 2008a; 100:727–740. [PubMed: 19337582]

Wu W, West SG, Hughes JN. Short-term effects of grade retention on the growth rate of Woodcock-Johnson III broad math and reading scores. *Journal of School Psychology*. 2008b; 46:85–105. [PubMed: 19083352]

Table 1

Demographic characteristics of sample

Sample	All Students (n=769)	Promoted Students (n=604)	Retained Students (n=165)
Male	52.4%	57.0%	51.2%
Caucasian	34.6%	33.9%	34.8%
African American	22.8%	32.7%	20.0%
Hispanic	37.2%	29.7%	39.2%
Asian/Pacific Islander	3.5%	2.4%	3.8%
Native American	0.3%	0.0%	0.3%
Other	1.7%	1.2%	1.8%
Free or Reduced Lunch	47.7%	45.4%	55.8%

Table 2

Descriptive statistics on study variables and academically relevant variables

	All Students (n=769)	Promoted Students (n=604)	Retained Students (n=165)
UNIT Full Scale IQ	92.93 (14.594)	93.79 (14.471)	89.87 (14.344)
Woodcock Johnson III Broad Reading	96.469 (18.011)	98.782 (17.584)	88.137 (16.808)
Woodcock Johnson III Broad Math	100.763 (14.283)	101.789 (14.252)	97.355 (13.571)
Number of Services Received in Year 1	1.455 (1.099)	1.430 (1.112)	1.573 (1.045)
Number of Services Received in Year 2	1.043 (1.041)	1.013 (1.037)	1.161 (1.054)