

Review

Kindergarten Redshirting: Implications for Children with Disabilities

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Abstract: The purpose of this paper is to explore issues and concerns related to academic redshirting in kindergarten and to discuss implications of this practice for children with disabilities. Although parents cite a variety of reasons for redshirting their child, only limited evidence of academic or social benefit can be found. A search was conducted to identify studies relevant to academic redshirting and inclusive of children with disabilities published within the past 20 years, and 17 articles were identified related to the topic. From these articles, three central topics emerged: (a) prevalence, predictors, or parent motivations for kindergarten redshirting, (b) the impact of redshirting on academic achievement and post-secondary outcomes, and (c) the impact of this practice on a child's behavior. While assumptions can be made based on the research conducted using a general education population, the impact of kindergarten redshirting on the success of children with disabilities is unclear due to the limited amount of research that currently exists. Implications for children with disabilities are discussed.

Keywords: kindergarten; redshirting; delayed entry; delayed school entry; disabilities



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1. Introduction

The term “redshirt” originated in US collegiate sports and most often refers to a freshman player who is provided an extra year prior to varsity play to orient themselves to the academic, social, and physical demands of collegiate life and athletics. In the K-12 context within the US, “redshirting” is described as the act of delaying an age-eligible child's entry to kindergarten by one year to provide them with an additional year of academic and/or social maturation. This most often occurs as a child becomes age-eligible for kindergarten. In some cases, a child who is redshirted begins kindergarten one year older than peers who are enrolled at state entrance dates. The practice of redshirting may be one result of increased expectations and pressure to maintain new standards of academic performance at the kindergarten level [1] and may be especially appealing to parents [2–4], including those who want their child with a disability to be successfully included in general education settings.

Redshirting in kindergarten has been described in multiple news and media outlets over the past decade [5–7]. In his bestselling book, *Outliers: The Story of Success*, Gladwell [8] promoted the idea of academic redshirting and cited one particular research study as evidence of redshirting's long-term benefit. The cited study [9] concluded that the oldest children in kindergarten score higher than the youngest children, and that older children in the US are more likely to participate in college prep courses/programs during high school and to go on to college. All the while, organizations in the US, including the National Association for the Education of Young Children [10] and National Association of School Psychologists [11] have spoken out against the practice of redshirting or delaying school entry. The National Association of Early Childhood Specialists in State Departments of Education has even labeled the practice as “a more subtle form of retention” [12]. With these conflicting messages in mind, parents continue to consider the costs and benefits

to starting their child in kindergarten “on time”. Possibly impacting this decision is the increased rigor and academic expectations of kindergarten.

The new era of accountability and standardization has resulted in a renewed interest in the redshirting of kindergarten children, which has led to continued questions regarding its advantages. In 2016, Bassok, Latham, and Rorem [1] described significant changes in kindergarten activities, focus, assessments, and attitudes about school readiness when comparing survey data taken from results of two phases of the Early Childhood Longitudinal Study (ECLS-K 1998; ECLS-K 2011). Results of the study found public school teachers in 2010, when compared to their counterparts from 1998, were much more likely to believe that academic instruction should begin prior to kindergarten. Additionally, teachers in 2010 are also twice as likely to expect students to leave kindergarten knowing how to read. Reductions in time spent on music, art, and science were also noted in the findings, and teachers in 2010 were more likely to use workbooks, textbooks or teacher-directed activities rather than activity centers or child-based approaches to instruction. Along with changes in policy, kindergarten expectations, and approaches to instruction, it is also important to examine whether research findings demonstrate consistent results related to the impact of academic redshirting. Nonetheless, research that specifically focuses on the effects redshirting or delayed school entry as an intervention or practice is limited.

While previous literature reviews have focused on academic redshirting [13–15], researchers have not examined specifically its impact on children with disabilities. One literature review addressed rates of and reasons for kindergarten redshirting [13]. In the review, studies described significantly varied prevalence of redshirting (varying between 7 and 50% of students). Another review [14] focused on the methodologies used by researchers to explore school entry policies, including delayed entry. The author determined that researchers typically used one of three methods of comparison: (a) those that had delayed entry with those who entered school on time, (b) those in the same grade who had different birth dates, and (c) those who are same-aged, but in different grades. In this review, the author indicates that the first method resulted in inconclusive findings, which may warrant further examination of methodology using a systematic review. Range and colleagues [15] conducted a review in which they examined the research behind the use of redshirting and retention as interventions for struggling learners. As a result of the review, the authors concluded there are negative and positive outcomes for students who are redshirted and who are retained. Nevertheless, the authors do not define struggling learners as inclusive of children with disabilities. Overall, in these reviews as well as in past literature, little evidence has emerged to provide a strong justification to support kindergarten redshirting as a beneficial intervention for students. However, a review of literature to examine outcomes of academic redshirting and for the purpose of determining potential implications of this practice for children with disabilities has yet to be conducted.

How Many Kindergarteners “Redshirt”?

According to the US Census Bureau Current Population Survey (CPS), historical time series data since 2001 demonstrate there has been an increase in the number of children who have delayed school entry or redshirted in kindergarten [16]. These time series data demonstrate an increase in the number of six- to eight-year-old children enrolled below modal grade. Modal grade is defined by the US Census Bureau as “the most common grade in which children at a specific age are enrolled” [16]. More than 20 years ago, 17.7% of children aged six to eight years old were enrolled below modal grade, and those percentages have steadily increased. In 2016, 24.5% were reportedly enrolled below modal grade, predominately due to delayed school entry or retention. In comparison, retention rates have shown a steady decline since 1995 [17]; therefore, it may be assumed that the majority of children who are enrolled below modal grade in kindergarten are delayed as a result of academic or social redshirting.

While CPS data indicate increases in the occurrence of redshirting, other researchers have found differing results when trying to determine the actual numbers of children who

have delayed school entry. Data from the US Department of Education (DOE) show that in 1995, nine percent of children delayed entry into kindergarten, but in 2010, this decreased to nearly six percent [18,19]. Still other studies have described disparities in redshirting rates after 2000 ranging between 4% and 9% [20,21].

Redshirting rates are higher for children who come from middle- to high-income backgrounds [13] and those that identify as White [22,23], most likely due to the financial burden of maintaining an additional year of childcare. Additionally, Frey [13] has noted that when children who are from higher-income backgrounds are redshirted, they more likely have access to quality preschool programs, and eventually, this can raise kindergarten expectations and rigor [15].

However, there is limited research specifically examining the number of children redshirted in kindergarten who have disabilities. Many researchers have found children with disabilities are more likely to be redshirted than typically developing children [24,25]. Similarly, researchers have found redshirting rates for children with disabilities are higher than those of the general population [25,26]. The prevalence of redshirting among children with identified disabilities has been estimated at around 7–8% [27,28], a rate not surprising considering the challenges these children and their families experience when transitioning from preschool to kindergarten [29–32]. However, redshirting rates for children with disabilities also vary across disability categories [25]. Fortner and Jenkins [25] looked at six years of student data in the state of North Carolina and found redshirting rates varied between 11% for those with cognitive disabilities and three percent for those with developmental delays.

Even though researchers have found redshirting rates for children with disabilities are higher than those of the general population [25,26], there is limited evidence of redshirting or delayed school entry as an effective intervention or practice to support a child's school readiness. However, a closer look at the existing research related to the use of redshirting with the purpose of understanding what is known and how it relates to children with disabilities would provide the field with guidance and perspective. With these considerations in mind, this paper was designed to explore outcomes found only in academic redshirting research conducted in the US and published since 2000 in an effort to determine possible implications of this practice for children with disabilities.

2. Method

To identify articles to include in this review, a search was conducted using EBSCO Information Services, Education Resources Information Center (ERIC), and Google Scholar databases and the search terms: kindergarten, redshirting, delayed entry, delayed school entry, and disabilities. As a result of this initial search, 120 records were found. Duplicates consisted of 5 records. The following criteria were applied to determine which studies to include: (a) they referenced kindergarten redshirting or delayed school entry, (b) data included or did not exclude children with disabilities or parents who had children with disabilities, (c) the research was conducted within the United States, (d) the research was published during 2000 or after, and (e) the empirical work was published in a peer-reviewed journal. From the original findings, 115 records were screened and 100 excluded based on the criteria. A full-text screening of 15 records was conducted and two additional records found using an ancestral search of references in the remaining records. In the end, 17 studies met all criteria; all were published between 2000 and 2019 (see Table 1).

In reviewing the literature, we identified three central topics that provided a foundation for understanding the practice of kindergarten redshirting: (a) prevalence, predictors or parent motivations for redshirting, (b) impact on academic achievement and post-secondary outcomes, and (c) impact on student behavior. This research provides important insights into the practice of redshirting and the implications the decision to redshirt has for students with disabilities (see Table 2).

Table 1. Studies included in the review.

Study	Data Source(s)	Measures	Inclusion of Children with Disabilities
Barnard-Brak (2008)	ECLS-K data collected in 1998–1999 for children with disabilities <i>n</i> = 968	Item Response Theory (IRT)-scaled reading and mathematics test scores	Yes
Barnard-Brak et al. (2017)	ECLS-K data collected in 1998–1999 for children with ADHD <i>n</i> = 21,409 total (ADHD sample = 1057; non-ADHD sample = 20,352)	IRT-scaled reading and mathematics test scores; parent survey of child’s use of medication and symptoms of inattention rating scale	Yes
Bassok and Reardon (2013)	ECLS-B data collected in 2006 and 2007 ~ <i>n</i> = 5550	Direct assessment of school readiness (preliteracy, math, social development), primary care provider surveys regarding child behavior and basic skills	Did not exclude *
Crothers et al. (2010)	Results of social behavior questionnaire completed by 16 public and private school teachers rating the behaviors of students in grades K-12. <i>n</i> = 281	Social behavior questionnaire created for the study that asks teachers to rate child on four items related to constructs of bullying	Did not exclude *
Datar (2006)	ECLS-K data collected in 1998–1999 from first time kindergarteners <i>n</i> = 13,818	IRT-scaled reading and mathematics test scores	Yes
Donath (2010)	Survey data from 63 parents who had redshirted their child and 24 teachers	Parents were asked to rank their opinion on reasons to delay kindergarten. Teachers were asked to rank their opinion based on their professional viewpoint about delaying kindergarten Entry	Did not exclude *
Elder and Lubotsky (2009)	ECLS-K data collected in 1998 and NELS data collected in 1988 <i>n</i> = 14,333	IRT-scaled reading and mathematics test scores; parent, student, and teacher surveys regarding child disabilities, achievement, and behavior	Yes
Fortner and Jenkins (2017)	State administrative records from 2006/2007–2012/2013 school years <i>n</i> = 262,162 14.2% have disabilities	Enrollment data and entry to kindergarten dates	Yes
Fortner and Jenkins (2018)	Same as above	Math and reading achievement scores on state end of grade exams in students’ third-grade year	Yes

Table 1. Cont.

Study	Data Source(s)	Measures	Inclusion of Children with Disabilities
Gottfried et al. (2016)	ECLS-K data collected in 1998 for first time kindergarten students that indicated their primary language was not English or who received English as a second language instruction <i>n</i> = 1760	IRT-scaled reading and mathematics test scores; oral language development scale scores; teacher social rating scale scores	Did not exclude *
Graue and DiPerna (2000)	Representative sample of data from school districts (<i>n</i> = 47) in one state. Data represented 8595 students.	Enrollment data and results of state Third-Grade Reading Test	Yes
Graue et al. (2002)	Monthly observations in educational settings and interviews with five children who were potential redshirts, their parents, teacher, and school administrator		Did not exclude *
Huang (2015)	State administrative records from 2010/2011, 2011/2012, and 2012/2013. ~ <i>n</i> = 80,000	Enrollment data	Yes
Lincove and Painter (2006)	NELS data collected in 1988 <i>n</i> = 25,000	Reading and math achievement, educational history, school, parent, and student survey data related to student experiences	Did not exclude *
Mendez et al. (2015)	Administrative data from one large, urban school district in Florida that was collected between 1989–2002 <i>n</i> = 6841	Student information system data pertaining to student performance, enrollment, and surveys completed by students, parents, and teachers	Yes
Noel and Newman (2003)	Interview data collected from 15 mothers of children who delayed kindergarten entry in the 1996–1997 school year		Did not exclude *
Winsler et al. (2012)	Data from Miami School Readiness Project (Winsler et al., 2008) from students who participated in 2002–2004 cohort. <i>n</i> = 14,813	School readiness assessment results, school records, progress reports from teachers	Did not exclude *

ECLS-K = Early Childhood Longitudinal Study-Kindergarten Cohort; ECLS-B = Early Childhood Longitudinal Study-Birth Cohort; NELS = National Educational Longitudinal Study; K = Kindergarten. * In these studies, parents of or children with disabilities were not excluded, but authors did not report the number of participants with this status.

Table 2. Studies by theme.

Theme	Study	Sample of Findings Related to Theme
Prevalence, predictors, or parent motivations for kindergarten redshirting	Bassok and Reardon (2013)	Male, white, and high-SES children are most likely to delay kindergarten. Results include a weak association between higher preliteracy and math scores and redshirting and no evidence that children with lower cognitive or social abilities at age 4 are more likely to redshirt.
	Donath (2010)	When provided with 28 possible reasons for delaying their child's K entry, parents most often chose to "increase child's self-confidence", "child's birthdate relative to September 1st cutoff date", or "to protect child from struggling academically".
	Fortner and Jenkins (2017)	In the state of North Carolina, students who are redshirted have almost two times the risk of being designated as having a disability. Parents are motivated to redshirt their child based on a) existing concerns with their child's development, or b) a desire to have their child have an advantage in school.
	Fortner and Jenkins (2018)	In the state of North Carolina, rates of redshirting for children with disabilities are higher than for those in the entire population and vary across disability type (3–11%).
	Graue and DiPerna (2000)	Within the school districts sampled, 7% of all children enrolled in third grade during the 1995–1996 school year redshirted kindergarten.
	Graue et al. (2002)	Authors conclude parents and teachers base their decisions to redshirt their child on a combination of child characteristics and social elements.
	Huang (2015)	Redshirted students were more likely to be white males, not from low SES. Students with disabilities were more likely to be redshirted. Most redshirted students were born in the summer months.
	Noel and Newman (2003)	Results indicate some mothers base their decisions to redshirt their child on child characteristics or experiences and others on their personal philosophies of schooling and development.
	Winsler et al. (2012)	Delayed kindergarten entry was more likely among boys, native English speakers, those with poorer school readiness, and who attended childcare rather than public school pre-K.
The impact on academic achievement and post-secondary outcomes	Barnard-Brak (2008)	Results indicate delayed entry to K had no significant difference on academic achievement for children with disabilities across a six-year timespan.
	Barnard-Brak et al. (2017)	Study results indicate the relationship between redshirting and growth rate in reading achievement of children with ADHD was non-statistically significant. However, a relationship between redshirting and decreased rate of growth in math was observed.
	Datar (2006)	Data suggest children with disabilities benefit from delaying K in terms of fall to spring test score gains in reading and math.

Table 2. Cont.

Theme	Study	Sample of Findings Related to Theme
	Elder and Lubotsky (2009)	Findings imply voluntary delayed entry is related to a later diagnosis of disability. Additionally, being a year older was found to reduce the probability of being diagnosed with ADD/ADHD.
	Fortner and Jenkins (2017)	Students with disabilities that are redshirted score statistically significantly lower on math assessment compared to non-redshirted peers.
	Fortner and Jenkins (2018)	Children with disabilities who redshirt have lower third grade achievement scores when compared to others with similar disabilities who entered K on time. However, children with speech-language impairments that redshirted K demonstrated higher math and reading achievement when compared to others with a similar disability who entered K on time.
	Gottfried et al. (2016)	Authors found children who redshirted K and were also ELLs did demonstrate higher reading and math achievement on tests initially, but the positive effects diminished over time.
	Graue and DiPerna (2000)	Test results for students who were redshirted are comparable to the results for children who were not redshirted.
	Lincove and Painter (2006)	Authors found redshirting to have little effect on long-term academic or social success and no effect on behavioral outcomes.
	Mendez et al. (2015)	Long-term outcomes for delayed entry students were similar to those who did not delay entry. However, students who had delayed entry were more likely to be placed in special education later in their academic career.
The impact on student behavior	Crothers et al. (2010)	Old-for-grade students were rated by teachers as being more likely to engage in relational, verbal, and physical bullying when compared to younger peers.
	Gottfried et al. (2016)	There was no difference in problem behaviors used by older or younger ELLs. Nevertheless, older ELLs were more determined to be more socially competent in the areas of approaches to learning, self-control, and interpersonal skills.
	Lincove and Painter (2006)	Redshirting results in few or no long-term social or behavioral advantages for students.
	Mendez et al. (2015)	Students who delayed entry did demonstrate more positive behavior and social outcomes when compared to retained students.

K = kindergarten; ELLs = English language learners.

3. Results

3.1. Prevalence, Predictors, and Parent Motivations

In the US, the final decision of whether to delay a child's kindergarten entry (redshirt) is up to the child's parents. Nine studies published since 2000 addressed variables related to prevalence, predictors, or underlying motivations in parents' decisions to redshirt their child [2–4,21,22,24,25,33,34].

Bassok and Reardon [21] suggest that the decision to delay a child's entrance may have been dependent on parents' concerns about the child's ability to succeed within a specific group. The authors analyzed data retrieved from the ECLS-Birth Cohort (ECLS-B) and determined male, white, and high socioeconomic status (SES) children were most likely to delay kindergarten, and schools serving larger proportions of white children and those not from a low-socioeconomic status had far higher rates of delayed entry. Additionally, results were used to determine if children's cognitive, social skills, and basic academic skills were a predictor of redshirting. Data included results from measures of cognitive and social development, as well as results from parent surveys that included questions about child behavior and "basic" academic skills. These data demonstrated no correlation between a child's social and basic skills and incidence of redshirting. However, Bassok and Reardon did find a weak association between redshirting and higher preliteracy and math scores. Additionally, they found no evidence that children with lower cognitive or social abilities at age 4 were more likely to redshirt. Based on the data analyzed, they estimate between 4% and 5.5% of children delayed kindergarten.

In comparison, Graue and DiPerna [22], Huang [24], Winsler et al. [33], and Fortner and Jenkins [25,34] examined the prevalence and predictors of delayed entry into kindergarten. Graue and DiPerna [22] collected data from a random sample of the 367 school districts in Wisconsin. The sample was representative and stratified by socioeconomic status (SES) using free and reduced lunch status and proportioned by student population size. School records for students in third grade during the 1995–1996 school year were collected from 47 school districts and reported student date of birth, enrollment school, enrollment date, gender, race/ethnicity, grade placement, promotions, special education placements, free and reduced lunch eligibility, and results of the Wisconsin Third-Grade Reading Test. Similarly, Huang [24] used student demographic data from the Virginia Department of Education administrative records for the 2010–2011, 2011–2012, and 2012–2013 school years comprising approximately 80,000 students per year who attended full-day kindergarten. Winsler et al. [33] used data from 13,191 four-year-olds who were part of the Miami School Readiness Project to specifically examine prevalence and predictors of redshirting as it related to low-income and ethnic minority families. Meanwhile, Fortner and Jenkins used state administrative records (2006–2007 through 2012–2013 school years) to establish prevalence of redshirting among all children [34], as well as those with disabilities specifically [25]. Graue and DiPerna [22], Huang [24], Winsler et al. [33], and Fortner and Jenkins [25,34] then used the data each collected to draw some conclusions similar to findings from Bassok and Reardon [21] as they relate to prevalence. According to Graue and DiPerna [22] and Huang [24], white males from a high-SES background are most likely to delay kindergarten. Nonetheless, Winsler et al. [33] and Fortner and Jenkins [34] found that redshirting was more likely among native English speakers. Winsler and colleagues [33] also found that redshirting was more prevalent among those with poorer school readiness, and those who attended childcare rather than public school prekindergarten at age 4 years. Different than Bassok and Reardon [21], Huang [24] and Fortner and Jenkins [25] found that students with disabilities were more likely to be redshirted. Huang [24] and Graue and DiPerna [22] also found that a majority of redshirted students were born in the summer months. In terms of overall prevalence, Winsler et al. [33] found that delaying kindergarten entry was rare (0.5% of the population investigated) among low-income and ethnic minority families. Huang [24] found that 3.5% of students whose records were reviewed were redshirted (1–1.5% lower than the number estimated by Bassok and Reardon [21]). However, Graue and DiPerna [22] found that 7% of the students whose

records were reviewed were redshirted, a number much higher than the 4.5–5% estimated by Bassok and Reardon [21]. Graue and DiPerna [22] also found that redshirting occurred within all school districts that provided records, with one fourth of the districts reporting a prevalence of 20%. Fortner and Jenkins [25] were the only authors who specifically looked at the prevalence of redshirting for children with disabilities and found in the state of North Carolina that their rates of redshirting varied between 3% and 11%, depending on the child's disability as described in their school records.

Graue, Kroeger, and Brown [2] and Noel and Newman [3] used qualitative inquiry to investigate parent motivations to make the decision to redshirt their child. Graue and colleagues [2] interviewed parents and other stakeholders to examine the characteristics and experiences of five children who were redshirted. Although the children were not identified specifically as having a disability, their parent perceived them to be emotionally immature—lacking confidence, independence, and the ability to separate. Some parents saw their child as shy or exhibiting social challenges. One parent described redshirting as a way to prevent their child from having challenges as an adolescent. Graue and colleagues [2] also noted that some parents often expressed the belief that time was a cure for their child's problems or concerns. Other parents described basing their decision on the experience of an older sibling and discussed wanting to ensure their child's success in school. Some cited concerns over the kindergarten program's ability to address their child's napping needs as one reason for redshirting, but overall, it was social-emotional skills that parents saw as vital for academic and social success in kindergarten and, therefore, the primary determinant for parents.

Noel and Newman [4] interviewed 15 mothers to investigate why parents decided to delay a child's school entry and variables they considered in making this decision. The researchers identified two distinct groups of participants: those who based their decision on specific variables (e.g., a concern related to the child) and those who based their decision on their own beliefs or philosophies. In this study, only mothers were interviewed, and they did not identify whether their child had specific disabilities. Findings indicated that mothers who based decisions on child-specific variables often feared their child would not be able to meet kindergarten expectations and expressed concerns about their child's future success. However, mothers who used their personal beliefs to guide their decision often had either strong opinions about the impact of birth date or of being an older kindergartener on a child's success or had personal experiences that led to beliefs that an older child will have greater advantages in school [4].

In the Donath and colleagues [3] study, 63 parents responded to a request to rank 28 items related to reasons for delayed kindergarten entry for their child. The items (rated on a 6-point scale) were based on previous research about parental perspectives on redshirting. The survey also offered parents the opportunity for open-ended responses connected to each survey item. The top three items selected by parents as reasons for delaying kindergarten entry were to protect their child from struggling academically, the child's birth date relative to the September 1st cut-off date, and to increase their child's self-confidence. Three items identified least often included problematic experiences in preschool/daycare, slower physical development, and recommendation by a kindergarten teacher [3].

Lastly, Fortner and Jenkins [34] analyzed data mentioned previously from administrative records to identify parental motivators for academic redshirting. Data revealed that students who were redshirted were slightly more likely than those who were not to be classified as gifted. However, redshirted students were more than likely to be classified as having a disability. The authors believed that these findings confirmed previous literature that described parents having maturational concerns in some cases, or in other cases an advantageous desire to have their child succeed which drives their decision to redshirt their child [34].

In each of the four studies that had investigated parent motivations to delay kindergarten entry [2–4,34], researchers described motivations as well intentioned, and the find-

ings were consistent with previous research. In three studies [2–4], some parents reported they used redshirting in the hopes their child would be more prepared socially for kindergarten, would make their child more successful, and/or would benefit their child academically [2–4]. Parents believed redshirting would either increase their child’s academic success or protect them from struggling academically. They also described redshirting as a response to concerns that their child would not meet kindergarten expectations. It should be noted that it is unclear if the children described by parents in each of these three particular studies were at risk of having or had a disability [2–4]. For children with or at risk of having a disability, redshirting as a response to concerns related to their child’s development is particularly concerning because of the significant evidence demonstrating the long-term benefits of early identification and intervention for young children struggling academically and/or socially [35,36].

3.2. *Impact on Student Academic Achievement and Post-Secondary Career*

While previous research points to parents’ optimism that redshirting would help their child academically [2–4], controversy exists as to whether an additional year of maturation actually provides academic or social–emotional benefit for these children. In ten studies included in this review, researchers investigated the academic impact of kindergarten redshirting on students. Four of these studies looked more closely at short-term impacts, focusing on the child’s first three years of school [22,25,26,34], while the other six focused on longer-term effects on academic achievement [27,28,37–40]. National survey data such as ECLS-Kindergarten (ECLS-K;1998–2004) and National Educational Longitudinal Study (NELS; 1988) were used in five of these different studies in comparing educational outcomes of children redshirted in kindergarten with those who began kindergarten on time [27,28,37–39]. Gottfried and colleagues [38], for example, used ECLS-K data to look specifically at the impact of redshirting on English language learners. Mendez and colleagues [40] compared the achievement of those children that were redshirted and those that were not using 13 years of archived data for children in a large school district in Florida, as they progressed from kindergarten to grade 12.

Of the six studies that examined the long-term effects of kindergarten redshirting on the academic achievement of students with and without disabilities, five found little relations between redshirting and greater long-term academic achievement when compared to their peers who were not delayed at entry [27,28,38,39,41]. Nevertheless, Lincove and Painter [39] found that redshirted children had slightly lower test scores on 8th grade and 10th grade achievement tests when compared to their non-delayed peers. The authors also found that children who were redshirted were more likely to repeat a grade at some time during 1st–8th grades. However, results indicated that they performed slightly better than non-delayed peers on 12th grade achievement tests. Authors theorized that the differences may have related more to child and family factors than to entrance age [39]. Finally, Mendez and colleagues [40] found that although the long-term outcomes for delayed entry students were similar to those who did not delay entry, students who had delayed entry were more likely to be placed in special education later in their academic career.

Four studies [22,25,26,34] explored the short-term impact of redshirting on children’s math and/or literacy test scores during their first three years of school. Datar [26] analyzed ECLS-K data from the 1998–1999 school year, to determine how age of entry affected academic performance in the beginning of kindergarten. The sample used for this study included the results of the ECLS-K for 13,818 first-time kindergarteners who had a math or reading test score reported at two points in time. The author provided descriptive statistics for the children, including age and percentage of those with a disability. In the study, entrance age was compared for typically developing children and those children with a disability on mean math and reading scores in the fall and spring. Datar [26] concluded that because older entrance age was associated with increases in math and reading scores at kindergarten entry and for the first two years of school, that delaying kindergarten would

produce similar effects. This was especially true for boys, children with low SES, or those with a disability.

Fortner and Jenkins [25,34] and Graue and DiPerna [22] used state data to investigate the academic outcomes of students who had been redshirted. Fortner and Jenkins [25,34] used state administrative records (2006–2007 through 2012–2013 school years) to analyze end of grade reading and math scores of students during their first three years of school and found contrasting results to those of Datar [26]. Fortner and Jenkins determined that on average, students who were redshirted and had a disability demonstrated lower math test scores compared with their peers with a disability who were not redshirted [34]. While not specifically looking at the test results of students with disabilities, Graue and DiPerna [22] found that children who were redshirted achieved similarly to those who entered on time. Fortner and Jenkins [34] and Graue and DiPerna [22] both identified a relation between redshirting and disability or special education services. Fortner and Jenkins [34] found a statistically significant association between children that were redshirted and those identified as having a disability by third grade. Fortner and Jenkins' [34] finding is similar to that of Mendez and colleagues [40] who determined children with delayed entry were more likely to be placed in special education when compared with children that started kindergarten on time. Graue and DiPerna [22] found that children who were redshirted were 2.24 times likely of receiving special education services in third grade. However, each of these results contradict Elder and Lubotsky's [37] findings that being a year older at the time of kindergarten (due to delayed school entry) reduced the probability of diagnosis of an educational disability, especially attention-deficit hyperactivity disorder (ADHD).

A limited number of studies specifically looked at the academic outcomes of children who were already suspected of having or who had identified disabilities and were redshirted and those who had identified disabilities and started kindergarten on time [25,27,28,34]. Fortner and Jenkins [34] found that delaying entry when a child was suspected of having a disability could lead to lower math performance when compared to the performance of non-delayed entry children with disabilities. As mentioned previously, the authors also found children who redshirt and had a disability had lower math test scores compared with their peers with a disability who did not redshirt. These results were consistent across categories of disability, with one exception [25]. They found that redshirted children with speech-language impairments had higher reading and math achievement scores as compared to peers with speech-language impairments who entered kindergarten on time.

Lastly, Lincove and Painter [39] found an association between kindergarten redshirting and some post-secondary outcomes. The authors found children who redshirted had an increased dropout rate and were less likely to attend college [39]. Additionally, their findings indicated that children who were redshirted were more likely to earn lower salaries at age 25 in comparison to their non-redshirted peers and more likely to be arrested [39].

3.3. *Impact on Social Skills and Behavior*

Along with the direction to use evidence-based practices, US education policy uses language that more clearly recognizes the importance of children's positive social emotional development, as well as academic skills [41]. While many families choose to redshirt their child in hopes that he or she will mature or further develop their social emotional skills [22], there has been a very limited number of studies that have investigated the connection between redshirting and behavioral outcomes [38–40,42] and no studies specific to children with disabilities were found. As mentioned previously, Gottfried and colleagues [38] used ECLS-K data to look specifically at the impact of redshirting on English language learners' academic achievement as well as problem behavior and social skills. Lincove and Painter [39] analyzed data from the National Educational Longitudinal Study (NELS; 1988), including those related to social experiences, social interaction, and reports of problem behavior and arrests, to determine long-term outcomes. Mendez and colleagues [40] analyzed the results of teacher surveys related to child attention, behavior, and attitudes toward school for children that were redshirted and those that were not using 13 years

of archived data for children in a large school district in Florida. Finally, in Crothers and colleagues [42], researchers analyzed the results of a bullying behavior questionnaire provided to 16 public and private teachers regarding each of their students to determine if children who were redshirted were more likely to engage in bullying behaviors.

Evidence demonstrating the potential relation between redshirting and social or behavioral outcomes is mixed. In two studies, those who were redshirted exhibited little or no difference in social skills or behavioral outcomes when compared to peers who did not delay entry [39,40]. However, in Mendez and colleagues [40], students who delayed entry did demonstrate more positive behavior and social outcomes when compared to retained students. In Gottfried and colleagues [38], researchers found that while there were no differences in problem behaviors used by older or younger ELLs, older ELLs were more socially competent in the areas of approaches to learning, self-control, and interpersonal skills. This is strikingly different than the findings of Crothers and colleagues [42] which suggest that children who were old-for-grade were more likely to be bullies or victims of bullying. Nonetheless, in the study by Crothers et al. [42], the researchers did not compare the data of redshirted children to those of retained children. Therefore, while there is some evidence describing better outcomes for children who are redshirted in comparison to those who are retained, the remaining evidence draws no clear conclusion as to whether or not redshirting results in positive outcomes for students with disabilities.

4. Discussion

The results of research included in this review are similar to findings published prior to 2000 [43] which found that delayed school entry may reduce a child's need for grade retention later, but not special education services. Nonetheless, they do not provide a clear conclusion as to what the potential impacts of redshirting are for children who have identified disabilities.

Overall, there are few differences in academic outcomes of all children who were redshirted and those who were not, but an increased likelihood of receiving special education services. Interestingly, these results are different than those reported by the US Department of Education Institute of Education Sciences [44], where ECLS-K data were analyzed, and results indicated children who delayed entry demonstrated higher reading skills and lower math skills when compared to children who started on time. It should also be noted that there is evidence describing the advantages of being an older student in kindergarten, but because this was not specific to the act of redshirting or delayed school entry, it was not included in this report. In fact, the data used by Bedard and Dhuey [9] to draw the conclusions reported in the book *Outliers* [8] came from Trends in International Mathematics and Science Study (TIMSS) data collected in 1995 and 1999, Early Childhood Longitudinal Study (ECLS) data collected in 1998, and National Education Longitudinal Study (NELS) data collected in 1988. Again, their conclusions were based on data collected more than 20 years ago and therefore may or may not remain valid within the current educational environment.

Few conclusions were found specifically related to the impacts of redshirting on children with disabilities. However, Huang [24] and Fortner and Jenkins [25] found that students with disabilities were more likely to be redshirted. Additionally, Fortner and Jenkins [25] found rates of redshirting varied between 3% and 11%, depending on the child's disability. Of the studies that examined the long-term effects of kindergarten redshirting on the academic achievement of students with and without disabilities, most found little relation between redshirting and greater long-term academic achievement [23,24,38,39,41]. Datar [26] concluded that redshirting was associated with increases in math and reading scores for children with disabilities at kindergarten entry and for the first two years of school. Nonetheless, Fortner and Jenkins [34] found that delaying entry when a child was suspected of having a disability could lead to lower math performance. In their study, most children who redshirted and had a disability had lower math test scores in third grade compared with their peers with a disability who did not redshirt. However, this was not

the case for children with speech-language impairments who demonstrated higher reading and math achievement scores as compared to peers with speech-language impairments who entered kindergarten on time. No studies specific to children with disabilities were found that specifically investigated the impact of redshirting on children with disabilities' social skills or behaviors.

4.1. Limitations

This review is limited due to the small number of studies conducted and published since 2000 that have examined the impact of kindergarten redshirting, specifically on children with disabilities and that has utilized data collected within the past two decades. Of the articles found as part of the literature review, 12 of the 17 used data collected prior to 2000. This finding significantly limited our ability to make critical statements related to the impact of kindergarten redshirting on children's outcomes. Since 2000, academic expectations have increased [1], and while assumptions can be made based on the research conducted using a general education population, the impact of kindergarten redshirting on the success of children with disabilities (e.g., achievement and engagement in inclusive environments, amount or intensity of necessary special education services and support) is unclear. It is therefore unclear if increased academic expectations and standardization of curricula have resulted in different academic outcomes for children who are redshirted. Additionally, while the authors did provide transparency related to selection criteria and search strategy, critical appraisal of the included studies was not conducted to the extent that it reviewed the appropriateness of the study design, the quality of the execution of methods, or relevance to the research questions [45].

4.2. Implications

Results of this review have implications for research, practice, and policy regarding use of kindergarten redshirting for children with disabilities (see Table 3). According to Pianta and Kraft-Sayre [31], many children in preschool face considerable changes as they enter elementary school. Researchers have reported that children's lack of "school readiness" is linked to later gaps in their academic achievement [46,47]. Additionally, the transition to kindergarten has been called a "sensitive period" of a child's development [48] that could have possible impacts on children's later school success [46,49]. As noted, academic redshirting is a practice used when a parent feels their child is not "ready" for kindergarten or is pressured by administrators or teachers to delay their child's entry into kindergarten. This may be a result of the remaining dominance of a maturationist viewpoint, which defines development as sequential and varying in rates [50]. Similarly, this viewpoint also believes children need to be "ready" for specific learning experiences, and if these are offered before a child is ready, they have little value or even be harmful. Parents and practitioners might instead consider the limited evidence presented in this review to support redshirting as an effective way to support a child with disabilities' academic or social success [22,25,27,34,38–40]. A more Vygotskian perspective [51] would perceive school readiness as not something not waiting to occur within the child, but instead something that occurs with exposure and assistance. Carlton and Winsler [51] suggest schools, therefore, have a responsibility for being willing and able to support the needs for a diverse group of children. Opportunities to discuss the parent and staff perceptions of school readiness, and impact of redshirting on academic achievement and post-secondary outcomes should arise during the transition to kindergarten process.

Table 3. Implications for practice, research, and policy.

Category	Implications
Practice	Schools should examine school readiness through both maturational and experiential viewpoints to ensure consideration of all potential implications for children with disabilities.
	Schools need to establish opportunities for caregivers and staff to meet and discuss their perceptions of school readiness and the current research findings on academic redshirting and the potential outcomes for individual children with disabilities.
Research	Additional investigation is needed into the rate of prevalence of academic redshirting for children with disabilities and the number of children with identified disabilities who are redshirted.
	Research is needed to further describe if and how academic redshirting may be used to support children with disabilities' placement in kindergarten, and how decisions related to placement are made.
	Further evaluation of the communication and collaboration that occurs as part of the transition to kindergarten for children with disabilities is necessary.
Policy	Policymakers need to consider impact of school readiness standards and school entry policies on diverse learner populations.
	Policies are needed to formalize the transition to kindergarten process in ways that support all children's school readiness.

Understanding what the transition to kindergarten for children with disabilities should include in terms of practices and strategies is essential to best support parents as they make decisions related to their child's education [52], including whether or not to red-shirt their child. Practitioners' use of a "contextualized approach to transition" [53] can create multiple opportunities for parents to learn about current kindergarten expectations and supports that are available in elementary settings for an individual child and can be expanded to include formal opportunities to discuss what exists in terms of research related to redshirting and the possible benefits and costs for a specific child. For example, because research has shown that children who are redshirted are at greater risk of dropping out or not attending college [39,54], post-secondary transition supports for children with disabilities such as training, education, employment, and, where appropriate, independent living skills may be even more important to consider. Therefore, one unintended consequence of redshirting that deserves discussion is how it might impact the amount of post-secondary support and services a child would be eligible for. For some children with disabilities, post-secondary transition programs can provide additional educational opportunities to support their transition to work, community or post-secondary schooling. However, such post-secondary transition programs and services are mandated in the US by the Individuals with Disabilities Education Act (IDEA) [55] only until the child's 22nd birthday. Furthermore, family costs related to redshirting should be weighed (e.g., additional year of childcare and/or decreased parent engagement in labor market) [25].

As mentioned previously, although many studies included children with disabilities in their studies, there is a limited number of studies that have been conducted and published since 2000 that have examined the impact of kindergarten redshirting, especially on children with disabilities [25,27,28] and that has utilized data collected within the past two decades [2,3,21,24,25,33,34,42]. Considering multiple studies have cited redshirting rates higher for children with disabilities when compared to the rates for the entire population, investigations related to recent changes in school entry dates, the most current rates of kindergarten redshirting, and the number of children with identified disabilities who are redshirted will continue to be valuable. There may also be some benefit to investigating the factors currently being used to determine kindergarten placement for children with disabilities and if and how increased kindergarten expectations may impact their inclusion in general education settings. Lastly, more research is needed to determine the reasons parents of children with disabilities decide to redshirt their child and to evaluate the communication and collaboration that occurs as part of the transition to kindergarten for children with disabilities. More research is needed to determine the impact individualized

transition practices can have on the rate of redshirting or delayed school entry of children with disabilities.

In any case, when determining whether or not to establish legal or policy mandates to limit or eliminate a parent's ability to make the decision to redshirt their child, lawmakers must consider facts. Unfortunately, there are few facts available in literature to truly portray the costs and benefits of academic redshirting within the setting of today's kindergarten in the US. Until more supporting research exists, policymakers should take it upon themselves to better understand the reasons for academic redshirting, examine how preschool and kindergarten can work together, consider how to make kindergarten a place that parents are excited and confident to send their child, and that can meet all children where they are at, and finally establish policy that formalizes the transition to kindergarten process so that it supports all children's school readiness.

5. Conclusions

Research indicates that redshirting often occurs as a result of parents' desire to make a decision that will provide their child with the most educational or social emotional benefit [2–4]. Therefore, parents need to be provided with information specifically highlighting the research regarding the effectiveness of redshirting as a practice, its limitations, and the implications of such a decision, as well as information regarding the significant evidence to support the effectiveness of early intervention and support [35,36] for children with disabilities. This information is best provided as part of the transition to kindergarten process where family and kindergarten teams can discuss it together and as tools to create a plan that will support a child's individual success. Because existing research portrays a kindergarten that may seem unfamiliar to families today [1], the transition to kindergarten for parents of children with disabilities can also mean uncertainty in terms of placement, support, and relationships [56–58]. To help families to understand how their kindergarten is "ready for all", and to become familiar with their child's new team, expectations, environments, and supports available, elementary schools should establish a contextualized approach to transition [53]. This approach can nurture and support families' and a child's positive relationship with kindergarten teams and ensure the child has a positive transition to kindergarten. By creating opportunities for parents, preschool, and kindergarten teams to work together, discuss a child's strengths and needs, and communicate their excitement or concerns regarding the transition to kindergarten, together they can then determine if redshirting might be a potential strategy for addressing the individual child's needs.

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