

# ANALYSIS OF ELEMENTARY AND SECONDARY GRADE SPAN CONFIGURATIONS - UPDATE

Prepared for Alexandria City Public Schools

June 2017



In the following report, Hanover Research explores the literature on grade span configurations in both elementary and secondary settings. This report introduces the topic of grade configuration at a broad level, and then examines specific grade span models from elementary and secondary perspectives. Throughout, this report discusses potential benefits, limitations, and implementation considerations for common sequences.

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# EXECUTIVE SUMMARY AND KEY FINDINGS

## REPORT UPDATE

This document is an updated version of a report delivered to Alexandria City Public Schools (ACPS) in November 2016. To inform its grade reconfiguration efforts, ACPS requested additional information regarding the following topics:

- What research studies, if any, address outcomes for students in standalone Pre-K or Kindergarten centers compared to students in Pre-K or Kindergarten classrooms which are integrated into the elementary school building?
- What research studies, if any, compare Grades 9-10 and Grades 11-12 high school grade configurations to traditional high schools (i.e. Grades 9-12)?
- What is the ideal number of students per grade in elementary, middle, and high school, based on existing empirical evidence?
- What guiding questions should ACPS use to make decisions regarding grade reconfiguration?

To address these research questions, Hanover has provided additional information about these topics in the Key Findings section and throughout the body of the report. Unfortunately, there are no additional research studies comparing Grades 9-10 and Grades 11-12 grade spans to traditional high schools or comparing standalone Pre-K/Kindergarten centers to integrated Pre-K/Kindergarten and elementary schools. However, Hanover has drawn on literature related to school transitions, along with anecdotal evidence from school districts with these grade span configurations, in order to provide ACPS with additional data to inform its grade configuration decisions.

Hanover was unable to address an additional ACPS research question regarding the number of K-6 and K-8 schools throughout the United States due to the way that the National Center for Education Statistics (NCES) collects this data—NCES classifies schools as beginning in either Pre-K, Kindergarten, or Grade 1 and spanning to Grade 6 or Grade 8; the specific number of K-6 and K-8 schools is unavailable.<sup>1</sup>

## INTRODUCTION

Districts looking to improve student and teacher outcomes often consider structural and organizational changes that can be implemented at a low cost and have a high impact. One common organizational consideration that district leaders can assess is grade span configurations, which dictate how grade levels are sequenced across schools. According to district administrators, grade configuration can have a noticeable impact on a variety of

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<sup>1</sup> “Table 216.75: Public Elementary Schools, by Grade Span, Average School Enrollment, and State or Jurisdiction: 2013-14.” National Center for Education Statistics, 2015.  
[https://nces.ed.gov/programs/digest/d15/tables/dt15\\_216.75.asp?current=yes](https://nces.ed.gov/programs/digest/d15/tables/dt15_216.75.asp?current=yes)

indicators, including: content knowledge and alignment to state standards; development needs; district staffing and employment; and program design, length, and availability.<sup>2</sup> However, there is much debate over the true effectiveness of these structural changes in promoting student achievement. Generally, experts acknowledge the importance for schools to take into account the broader needs of their students, without isolating the effects of grade sequences. Indeed, “every grade configuration has its own strengths and weaknesses relative to the context in which the grade span occurs.”<sup>3</sup>

To this end, this report examines both empirical and anecdotal research from a variety of perspectives to provide Alexandria City Public Schools (ACPS) with a large-scale analysis of recent literature that addresses grade span configurations. Where possible, research is focused on data-driven studies. Hanover Research reviewed several online databases to identify high-quality studies to address this topic, including ProQuest, EBSCOHost, ERIC, and the U.S. Department of Education. Secondary anecdotal literature supplements research-based findings throughout the report to offer a holistic assessment of the major grade configuration models available to public school districts.

Hanover Research evaluates an array of grade sequences that can be applied in both early childhood, elementary, and secondary settings, encompassing all grade levels from Pre-Kindergarten to Grade 12. Accordingly, this report is organized in four sections:

- **Section I: Overview of Research on Grade-Level Configuration** introduces the topic of grade configuration, and reviews the literature at a broad level. This section considers the overall effectiveness of grade span reforms and issues commonly associated with school-to-school transitions.
- **Section II: Models of Elementary Grade Configuration** assesses the impacts of various grade sequences at the elementary level. This includes standalone early childhood campuses, alignment from Pre-Kindergarten through Grade 3, ending elementary school in Grade 5 versus Grade 6, and intermediate schools.
- **Section III: Models of Secondary Grade Configuration** investigates common grade span models through middle and high school. This includes K-8 schools, middle and junior high school models, ninth grade academies, and Grade 7 through 12 high schools.
- **Section IV: Best Practices in Reconfiguring Grades** provides an overview of strategies that other districts have used to facilitate the implementation of new grade configurations, with a particular focus on stakeholder engagement, cost considerations, and indicators of success.

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<sup>2</sup> “Illinois P-20 Council Grade Span Configuration Meeting: Recommendations to Illinois State Board of Education.” Illinois Department of Education, June 2012. pp.1–2.  
<https://www.illinois.gov/gov/P20/Documents/Educator%20Licensure/Grade%20Span%20Configuration%20Recommendations%20to%20ISBE%20final.pdf>

<sup>3</sup> Renchler, R. “School Organization: Grade Span: Trends and Issues.” ERIC Clearinghouse on Educational Management, 2002. p.4. <http://files.eric.ed.gov/fulltext/ED472994.pdf>

## GENERAL KEY FINDINGS

- **Nationally and in ACPS' region, the most common grade configurations for public schools are generally Pre-K/Kindergarten through Grade 5 at the elementary level and Grades 9-12 at the high school level.** Three-year middle schools are the most common model nationally and regionally, although Grade K through 8 schools are becoming increasingly popular. Grade K through 8 schools account for a larger proportion of elementary schools in the District of Columbia and Maryland than in Virginia. Nationally, the number of Grade K through 8 schools has increased substantially over the past 20 years from 2,500 schools in 1994 to 6,500 schools in 2014.
- **Regardless of the grade span configuration used in a district, schools should focus on school quality and provide comprehensive transition programs to support students when they change schools.** Districts should strive to meet students' academic and developmental needs at all ages, and a focus on school quality and effective educational practices should underpin any grade re-configuration effort. Transition programs, which address students' concerns and expectations about new schools, should align with overall K-12 articulation efforts; teachers and administrators at each school level should coordinate efforts to address transition issues.
- **When considering potential grade configurations, districts should take into account student performance as well as projected enrollments, school sizes, transportation costs, number of transition points, stakeholder values, and overall school goals.** Districts typically consider local and state trends and solicit feedback from students, parents, and staff when making decisions about grade re-configurations. The costs of re-configuring grades can vary widely depending on existing district resources. Schools may need to purchase additional furniture, upgrade labs, add extracurricular programming or additional classes, hire additional staff, renovate existing facilities, or build new classrooms when adopting new grade configurations.
- **Research on the impacts of school and class size is somewhat mixed, but in general, most studies show that smaller school and class sizes are associated with positive outcomes.** A 2009 review of school size studies recommends that elementary schools not exceed 600 students and secondary schools not exceed 1,000 students; schools with large proportions of disadvantaged students should be smaller. In terms of class size, research on students in Grades K-3 indicates that class sizes of 18 students or fewer produce the largest benefits in terms of academic achievement. No studies have examined the optimal number of students per grade. Hanover recommends that ACPS rely on research related to school and class size in order to determine the number of students per grade level at each school.

## KEY FINDINGS: ELEMENTARY GRADE CONFIGURATIONS

- **Students do not appear to benefit from isolated early childhood experiences.** One study found that students in standalone pre-primary schools (i.e., Pre-K and/or

Kindergarten) do not gain skills as fast over the course of the school year as their peers in elementary schools. This study found that more time is dedicated to instruction when Kindergarten is incorporated with elementary grade spans. However, it is possible that quality instruction in standalone pre-primary schools could result in positive outcomes. Recently, several school districts have established standalone pre-primary centers to ease overcrowding and also to better address the needs of young learners, especially those who are typically unprepared for Kindergarten.

- **Comprehensive PreK-3 alignment is critical to ensure successful transitions into formal schooling and maintain student achievement.** A dedicated PreK-3 framework ensures that curricula and pedagogy are aligned across early childhood and early elementary classrooms, and this sequences points to the efficacy of including early childhood grades with elementary sequences. Moreover, reading achievement by Grade 3 is highly predictive of later student outcomes—such as high school completion—and schools should stress proficiency by that time. However, ensuring horizontal and vertical alignment can be a time-consuming and resource-intensive process.
- **Grade 6 students generally benefit from placement in elementary school in terms of both academic and behavioral outcomes.** Elementary school children in Grade 6 gain more academically over the course of the school year and experience significantly fewer behavior infractions than their peers in middle school configurations. However, data suggest that other factors affect Grade 6 performance and that district leaders should carefully consider how this configuration will impact student capacity in elementary school in particular; for example, other districts have had to construct new elementary schools and redistrict some students.
- **Intermediate school (Grades 5 and 6 only) are not supported by the literature.** Students in Grades 5 and 6 perform better as part of larger elementary grade spans than in isolation. Despite suggestions that these students often require dedicated social and emotional supports, there is no evidence that intermediate schools are better equipped to provide these resources than more standard elementary school settings.

## KEY FINDINGS: SECONDARY GRADE CONFIGURATIONS

- **Although K-8 schools have become much more popular in recent years, research regarding ideal grade span configurations for middle grades students is inconclusive.** Several studies have found that K-8 schools have more positive environments and are associated with better attendance, decreased behavioral problems, and improved academic achievement compared to middle and junior high schools. The transition to middle school can be difficult for many and is often associated with negative academic and social outcomes. Many view K-8 schools as beneficial because they reduce the number of school transitions students experience. However, the long-term benefits of K-8 schools have not been established; several

studies have found no difference between K-8 schools and middle schools or have found that the differences are too small or unsustainable to be of importance.

- **Because neither K-8 nor middle schools have consistently demonstrated improvements in academic achievement, some experts argue that schools should focus on improving overall school quality.** Middle grades experts assert that schools must design the curriculum and school environment to meet the needs of middle grades students, regardless of whether they are in a K-8 or middle school setting. Use of interdisciplinary teaching teams, an approach commonly recommended for middle schools, has the potential to help students and teachers form positive relationships and improve academic outcomes. Further, comprehensive transition programs can help to mitigate the negative effects of changing schools.
- **Ninth grade academies are often difficult for schools to fully implement, and research on their effects is inconclusive.** Ninth grade academies have distinct administrative structures and programmatic characteristics, which can be difficult for schools to achieve without substantial district support and resources. Academies are usually housed in a dedicated wing or hallway within a school and have their own administrator or interdisciplinary teaching teams. Additional staff typically provide other academic and social supports, such as tutoring, mentoring, counseling, and social services. While some studies have found that students who attended ninth grade academies have higher academic achievement levels and lower non-promotion rates than typical high schools, other studies have found no difference in students who attended academies and those in traditional schools.
- **Alternative secondary configurations, such as 7-12 schools, are not generally supported by the literature.** Proponents of the 7-12 configuration model argue that it is effective because it minimizes school transitions and allows middle grades students to access high school facilities and advanced coursework. However, research and anecdotal accounts of the model's outcomes is mixed. Adopters of the 7-12 model have acknowledged that middle school students have different needs than high school students, and typically use school-within-school models to serve 7-8 and 9-12 students separately within the same campus. Hanover did not identify any studies of other high school models, such as 9-10 and 11-12 schools. In general, school transitions are associated with decreases in student achievement. However, it is unclear whether a school transition during high school would have negative effects.

In addition to these findings, Section IV provides an overview of next steps ACPS can take to plan for grade reconfiguration.

## SECTION I: OVERVIEW OF RESEARCH ON GRADE-LEVEL CONFIGURATION

In this section, Hanover Research highlights the research on grade-level configuration. This section broadly examines the extant literature that is applicable across both elementary and secondary school settings, providing a framework for the subsequent analysis of specific configurations in K-12 education.

### OVERVIEW OF GRADE CONFIGURATION MODELS IN THE UNITED STATES

Grade configuration has been examined by education practitioners and policymakers for decades as school and district administrators search for ways to leverage organizational and structural elements to improve outcomes. To maximize student achievement and school efficiency, experts have tried an array of grade spans, examining the benefits and challenges of alternative configurations.<sup>4</sup> Constraints surrounding school and district boundaries, student populations, financial resources, and community preferences—among other factors—can often dictate how a school system configures grade levels. This multiplicity of considerations explains the wide range of grade configurations across the United States.<sup>5</sup> **However, in the United States, there is no universally agreed-upon best practice for grade span configuration.**

The National Center for Education Statistics (NCES) highlights the variety of possible grade configuration models that are prevalent across the United States (Figure 1.1). The standard progression in most districts begins in Grade 1 at age 6, and students traditionally remain in elementary school until at least Grade 4. After Grade 4, there is significant room for variation in school organizations, with some students transitioning to middle school (Grades 5 to 8 or Grades 6 to 8) or junior high (Grades 7 to 8). Others transition to a larger school that combines junior and senior high schools, which can span from Grades 6 to 12. Students commonly enter high school in Grade 9.<sup>6</sup>

Changes in grade configuration over time have been a result of enrollment pressures and new pedagogical theories. For much of history, the vast majority of public school districts in the United States had a single elementary school for Grades K through 8 and a secondary school for Grades 9 through 12. However, two major shifts—one in the early 1900s, which led to the creation of junior high schools, and a second in the 1960s, which marked the advent of the middle school concept—have changed the landscape of public education permanently. The ideological basis of a middle school or junior high school model lies in the assumption that adolescents have unique needs, as they are in a transitional period during which it is useful

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<sup>4</sup> Renchler, R. "Grade Span." *National Association of Elementary School Principals*, 16:3, Spring 2000. p.2.  
<http://files.eric.ed.gov/fulltext/ED440471.pdf>

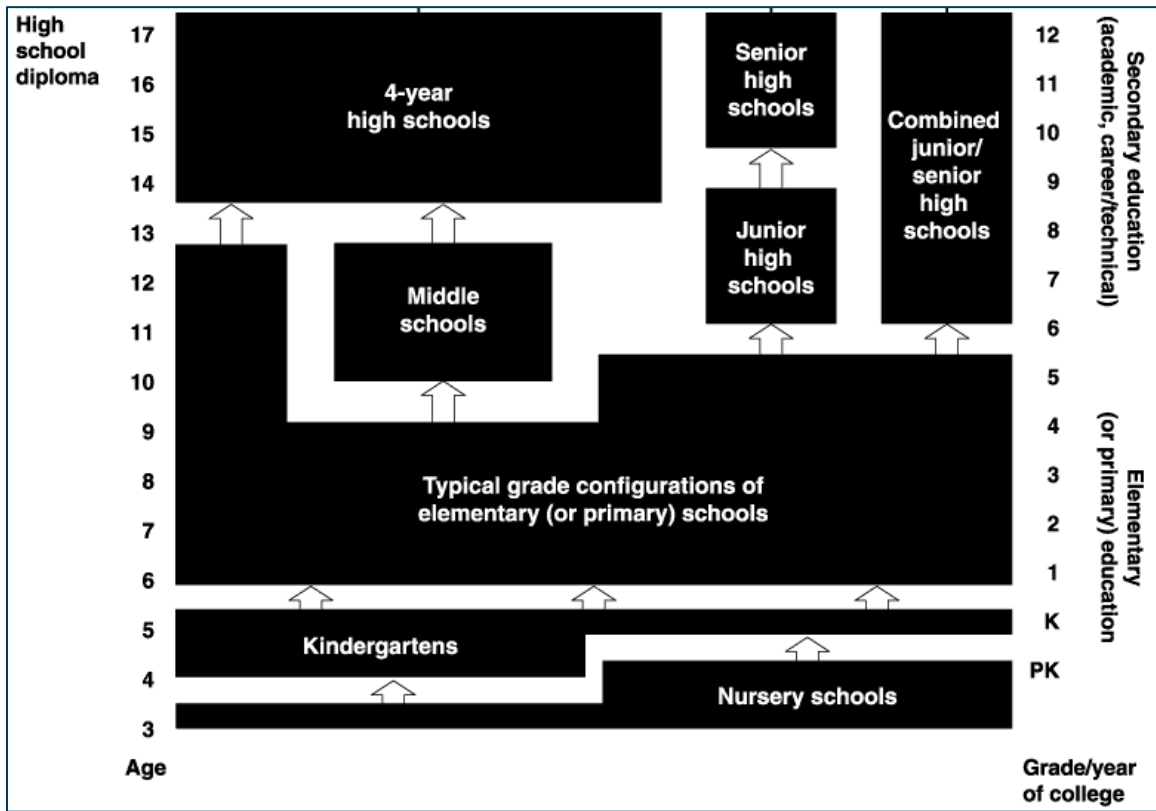
<sup>5</sup> Ibid.

<sup>6</sup> "The Structure of Education in the United States." National Center for Education Statistics.  
[https://nces.ed.gov/programs/digest/d13/figures/fig\\_01.asp?referrer=figures](https://nces.ed.gov/programs/digest/d13/figures/fig_01.asp?referrer=figures)



to isolate them from both younger and older students.<sup>7</sup> While many reformers once argued that middle school-aged students have unique social, psychological, and academic needs that were best served by placement in separate schools, the K-8 model has recently reemerged in many districts across the country.<sup>8</sup>

**Figure 1.1: Structure of Public Education in the United States**



Source: National Center for Education Statistics<sup>9</sup>

Although there is an array of possible grade span options, the NCES finds that the most common elementary school configuration is Pre-K/Kindergarten through Grade 5, while the most common secondary school configuration is Grades 9 through 12 (Figure 1.2 and Figure 1.3). During the 2013-2014 school year, there were over 25,000 schools in the United States that ended elementary school in Grade 5 and over 16,000 schools that spanned the traditional high school years.<sup>10</sup> Trends in Virginia, Maryland, and the District of Columbia mirror national

<sup>7</sup> Schwerdt, G. "The Impact of Alternative Grade Configurations on Student Outcomes through Middle and High School." Harvard University Institute for Economic Research, September 2011. p.1. <http://www.edweek.org/media/gradeconfiguration-13structure.pdf>

<sup>8</sup> Ibid.

<sup>9</sup> Image taken from: "The Structure of Education in the United States," Op. cit.

<sup>10</sup> [1] "Table 216.75: Public Elementary Schools, by Grade Span, Average School Enrollment, and State or Jurisdiction: 2013-14," Op. cit.

[2] "Table 216.80: Public Secondary Schools, by Grade Span, Average School Enrollment, and State or Jurisdiction: 2013-14." National Center for Education Statistics, 2015. [https://nces.ed.gov/programs/digest/d15/tables/dt15\\_216.80.asp?current=yes](https://nces.ed.gov/programs/digest/d15/tables/dt15_216.80.asp?current=yes)

figures – indeed, relatively few elementary schools end before Grade 5 and a very small number of schools operate outside the traditional 9 through 12 structure at the secondary level.

**Figure 1.2: Public Elementary School Grade Spans by Number of Schools, 2013-2014**

JURISDICTION	GRADE SPANS					
	<i>Pre-K, Kindergarten, or Grade 1 to Grade 3 or 4</i>	<i>Pre-K, Kindergarten, or Grade 1 to Grade 5</i>	<i>Pre-K, Kindergarten, or Grade 1 to Grade 6</i>	<i>Pre-K, Kindergarten, or Grade 1 to Grade 8</i>	<i>Grade 4, 5, or 6 to Grade 6, 7, or 8</i>	<i>Other</i>
District of Columbia	11	68	6	32	26	23
Maryland	13	667	82	92	221	55
Virginia	47	839	150	12	312	135
<b>United States</b>	<b>5,090</b>	<b>25,309</b>	<b>10,213</b>	<b>6,553</b>	<b>12,322</b>	<b>6,547</b>

Source: National Center for Education Statistics<sup>11</sup>

**Figure 1.3: Public Secondary School Grade Spans by Number of Schools, 2013-2014**

JURISDICTION	GRADE SPANS					
	<i>Grade 7 to 8 and 7 to 9</i>	<i>Grade 7 to 12</i>	<i>Grade 8 to 12</i>	<i>Grade 9 to 12</i>	<i>Grade 10 to 12</i>	<i>Other</i>
District of Columbia	1	1	0	31	0	6
Maryland	5	3	2	221	3	12
Virginia	33	4	28	337	2	2
<b>United States</b>	<b>2,719</b>	<b>3,002</b>	<b>496</b>	<b>16,361</b>	<b>576</b>	<b>899</b>

Source: National Center for Education Statistics<sup>12</sup>

As another example, California operates a large variety of different grade span models, given its population and differing enrollment needs (Figure 1.4). The state’s data provide a more nuanced look at the prevalence of different grade configuration models, and offers an illustration of the different possible organizations that exist in the United States. The most common elementary school settings operate from Kindergarten to Grade 5 or 6, while most middle schools serve students from Grades 6 to 8 and high schools serve students from Grades 9 to 12.<sup>13</sup> However, California data suggest that **there is no limit to the division of grades that is possible and common models range from wide-scale schools that serve up to seven grade levels to single- or two-grade buildings.**

<sup>11</sup> Adapted from: “Table 216.75: Public Elementary Schools, by Grade Span, Average School Enrollment, and State or Jurisdiction: 2013-14,” Op. cit.

<sup>12</sup> Adapted from: “Table 216.80: Public Secondary Schools, by Grade Span, Average School Enrollment, and State or Jurisdiction: 2013-14,” Op. cit.

<sup>13</sup> “Enrollment/Number of Schools by Grade Span and Type.” California Department of Education. <http://www.cde.ca.gov/ds/sd/cb/cefenrollgradetype.asp>

**Figure 1.4: Grade Span Models by Enrollment and Number of Schools in California, 2015**

GRADE SPAN	NUMBER OF SCHOOLS	ENROLLMENT	GRADE SPAN	NUMBER OF SCHOOLS	ENROLLMENT
<b>ELEMENTARY SCHOOLS</b>			<b>MIDDLE/JUNIOR HIGH SCHOOLS</b>		
K	20	2,765	4-8	12	7,469
K-1	20	4,848	5-8	61	28,209
K-2	48	17,702	6-8	862	692,249
K-3	71	23,105	6-9	8	5,660
K-4	72	28,726	7-8	332	255,776
K-5	2,457	1,341,288	7-9	14	9,086
K-6	2,005	1,166,089	Other	58	23,953
K-7	51	25,428	<b>HIGH SCHOOLS</b>		
K-8	838	407,490	6-12	40	27,019
1-5	11	5,250	7-12	74	50,559
3-5	25	11,393	8-12	17	26,322
4-5	11	4,105	9-11	15	5,706
4-6	17	7,550	9-12	1,003	1,414,821
4-8	13	4,320	10-12	8	3,248
Other	167	62,729	Other	180	248,457

Source: California Department of Education<sup>14</sup>

## EFFECTIVENESS OF GRADE SPAN REFORMS

Generally, there is consensus among education researchers that there is no single grade configuration that is universally supported by empirical data. The ERIC Clearinghouse of Rural Education and Small Schools, for example, asserts that “research surrounding the benefits of specific grade-span configurations is seriously wanting. On the other hand, a large amount of prescriptive literature exists around that particular topic.”<sup>15</sup> This implies that much of the support (or not) for a particular grade span model hinges on anecdotal and descriptive literature. In one empirical study of the differences in student achievement across several different grade spans (i.e., K-8, 6-8, and 7-12), researchers concluded that

[...] when taken together, professional development and grade configuration were not found to have a direct relationship to student achievement [...] until empirical evidence is produced, policymakers are encouraged to continue discussions regarding the most appropriate means of addressing young adolescents’ academic needs regardless of other factors.<sup>16</sup>

Indeed, an array of factors can contribute to student and school-wide success beyond the organization of grade levels, and administrators are cautioned not to consider grade span

<sup>14</sup> Adapted from: Ibid.

<sup>15</sup> Howley, C.B. “Grade-Span Configurations.” The School Superintendents Association. <http://www.aasa.org/SchoolAdministratorArticle.aspx?id=10410>

<sup>16</sup> Schmitt, V.L. “The Relationship Between Middle Level Grade Span Configuration, Professional Development, and Student Achievement.” *RMLE Online*, 27:2, 2004. p.1. <http://files.eric.ed.gov/fulltext/EJ807406.pdf>

configuration in isolation. In a comprehensive review of the extant literature, the Ontario Institute for Studies in Education found that different configuration models could enhance different outcomes, making it difficult to pinpoint one exemplar model over another. For instance, academic achievement and social development are often two primary indicators of grade span efficacy, yet different configurations are found to benefit different results.<sup>17</sup> In short, the body of evidence highlights that:<sup>18</sup>

- There is not a single grade span configuration that will serve all purposes;
- There is not an agreed-on “best model”; and
- Current practice is in a state of flux.

**Nevertheless, districts can reorganize schools in a number of ways to reflect their internal capabilities and the needs of their student population, which can positively influence student outcomes despite the inconclusive literature.** In many cases, reforming a school’s organization or management style can represent a potentially cost-effective way to stimulate student performance and other indicators of success. Compared to policy changes regarding teacher tenure or the implementation of new standards, for example, school organization is considered to be a high-impact, low-cost reform that schools can enact to drive district-wide improvements in targeted areas such as achievement scores or non-academic growth (Figure 1.5).<sup>19</sup> Three commonly-investigated organizational reforms that experts propose include:

- **School Start Times:** In particular, schools can consider adjusting start times for students in middle and high schools. Early school start times reduce performance among disadvantaged students by an amount equivalent to having a highly ineffective teacher. In school districts with greater flexibility to adjust start times, starting school even an hour later can boost performance at low cost.
- **Teacher Assignments:** Schools can manage teacher assignments with an eye toward maximizing student achievement. For instance, recent evidence suggests substantial benefits from teachers remaining at the same grade level for multiple years. Similarly, a growing body of research documents that elementary teachers are often noticeably more effective in teaching one subject than another, suggesting significant benefits of teacher specialization.
- **School Grade Configuration:** For example, adolescent students attending middle school (Grades 6 to 8) appear to underperform their peers in K-8/9-12 school configurations. Encouraging modifications to grade configurations or taking measures to address the difficult transitions could boost achievement.<sup>20</sup>

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<sup>17</sup> Seller, W. “Configuring Schools: A Review of the Literature.” Ontario Institute for Studies in Education, August 2004. p.2. <http://www.hpedsb.on.ca/ec/directorsOffice/arc/documents/Configuringschools.pdf>

<sup>18</sup> Bullet points taken verbatim from: Ibid.

<sup>19</sup> Jacob, B.A. and J.E. Rockoff. “Organizing Schools to Improve Student Achievement: Start Times, Grade Configurations, and Teacher Assignments.” Hamilton Project, Brookings Institution, September 2011. p. 5. [https://www0.gsb.columbia.edu/faculty/jrockoff/papers/092011\\_organize\\_jacob\\_rockoff\\_paper.pdf](https://www0.gsb.columbia.edu/faculty/jrockoff/papers/092011_organize_jacob_rockoff_paper.pdf)

<sup>20</sup> Bullet points taken almost verbatim from: Ibid.

**Figure 1.5: Estimated Cost-Benefit Ratios for Common Organizational Reforms**

ORGANIZATIONAL REFORM	TEST SCORE GAINS	LIFETIME EARNINGS GAINS PER STUDENT	COST PER STUDENT	BENEFIT/COST RATIO
<b>Convert K-5/6-8 to K-8</b>	0.1 SD	\$10,000	\$50 to \$250	40:1 to 200:1
<b>Middle/Upper Grades Start One Hour Later</b>	0.175 SD	\$17,500	\$0 to \$1,950	9:1 or more
<b>Managing Teacher Assignments</b>	0.02 SD	\$2,000	\$0	N/A

Source: The Hamilton Project<sup>21</sup>

It is critical for district leaders to consider the potential benefits, both in terms of cost and student impact, of reorganizing buildings and grade spans. Indeed, “at the district level, consideration should be given to alterations in grade configuration that benefit students and *make sense given physical and financial constraints.*”<sup>22</sup> In most instances, many of the advantages of one grade configuration over the other largely disappear provided that schools offer effective supports for students and teachers.

**That is, high-impact schools will address the developmental and academic needs of students regardless of how grades are organized, and this will ultimately boost outcomes.** Common features of these effective practices include “caring relationships, high expectations and support to reach [students], enrichment and exploratory options, and socially relevant learning opportunities.”<sup>23</sup> For example, the middle school model is most often criticized for causing dips in student performance, supporting the literature that posits that transitions between schools can adversely affect students. However, the Association for Middle Level Education (AMLE) indicates that grade configurations do not matter as much as fidelity of implementation of key student supports during for these age groups. These attributes of effective education—such as developmental responsiveness, challenging and empowering curriculum, and equity—can support adolescents regardless of how school grade spans are configured.<sup>24</sup>

**By looking only at student performance under different models, administrators can erroneously implement a new grade span that is unsustainable or inefficient.** Thus, “school districts poised on the brink of making these decisions must take into account factors beyond simply what is best for the students. They also must consider projected enrollments, transportation costs, number of transitions to be made by students, size of school, and overall school goals.”<sup>25</sup> Moreover, education practitioners note that grade spans that are effective in some districts may be less effective in others based on district enrollment demographics and

<sup>21</sup> Adapted from: Ibid., p.6.

<sup>22</sup> Ibid., p.16.

<sup>23</sup> “Grade-Level Configuration and the Connection to Transitions.” California Department of Education. <http://pubs.cde.ca.gov/tcsii/ch6/cnfigconnecttrnsit.aspx>

<sup>24</sup> Barton, R. and J. Klump. “Figuring Out Grade Configurations.” *Principal’s Research Review*, 7:3, May 2012. pp.4–5. <http://educationnorthwest.org/sites/default/files/resources/PRR-Figuring-Out-Grade-Configurations.pdf>

<sup>25</sup> Howley, Op. cit.

resources.<sup>26</sup> In this way, particularly for middle-years students, “investing in ways to improve school attachment [...] may be a better strategy than simply changing the types of schools those students attend.”<sup>27</sup>

## IMPACT OF SCHOOL TRANSITIONS

A large body of research shows that school transitions are difficult for students. Transitions to both middle and high school have been associated with academic and behavioral problems, such as decreased self-esteem, grades, test scores, engagement, and attendance,<sup>28</sup> and increased disciplinary infractions and suspensions.<sup>29</sup>

The transition to middle school is often difficult because students enter a very different school environment at the same time they are undergoing many developmental changes. Students go from being the oldest students in a familiar environment to being the youngest students in a large school where they may not know many of their teachers or peers. Developmentally, however, young adolescents have a high need for stable and close relationships. In addition, instructional practices may be misaligned with students’ needs. The middle school classroom tends to emphasize “teacher control and discipline” at the same time students want to become more autonomous. Further, the middle school curriculum places greater emphasis on strict grading criteria while students are simultaneously becoming more self-conscious or prone to self-esteem issues.<sup>30</sup>

Similar issues arise in the transition from middle school to high school. The large size of typical high schools can cause students to feel isolated or alienated from teachers and administrators as well as from their peers.<sup>31</sup> The classroom environment can become more competitive and also more focused on academic content, which can discourage low-performing students. Students may struggle to connect academic content to their own interests or goals.<sup>32</sup> Further, students’ levels of preparation for high school can vary greatly, and those who are academically behind their current grade level are particularly prone to additional difficulties upon entering high school.<sup>33</sup>

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<sup>26</sup> Adapted from: Ibid.

<sup>27</sup> Barton and Klump, Op. cit., p.6.

<sup>28</sup> Jacob and Rockoff, Op. cit., p. 15.

<sup>29</sup> Benner, A.D. “The Transition to High School: Current Knowledge, Future Directions.” *Educational Psychology Review*, 23:3, April 2011. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3182155/>

<sup>30</sup> Juvonen, J. et al. “Focus on the Wonder Years - Challenges Facing the American Middle School.” RAND Corporation, 2004. pp. 13–15. [http://www.rand.org/content/dam/rand/pubs/monographs/2004/RAND\\_MG139.pdf](http://www.rand.org/content/dam/rand/pubs/monographs/2004/RAND_MG139.pdf)

<sup>31</sup> Kemple, J.J. et al. “Making the Move: How Freshman Academies and Thematic Small Learning Communities Can Support Successful Transitions To and Through High School.” MDRC, 2015. p. 10. [http://www.irre.org/sites/default/files/publication\\_pdfs/making\\_the\\_move\\_0\\_0.pdf](http://www.irre.org/sites/default/files/publication_pdfs/making_the_move_0_0.pdf)

<sup>32</sup> [1] Herlihy, C. “Toward Ensuring a Smooth Transition Into High School.” National High School Center, May 2007. p. 2. <http://www.mdrc.org/sites/default/files/toward%20ensuring%20policy%20brief.pdf> [2] Kemple et al., Op. cit., pp. 11–12.

<sup>33</sup> Herlihy, C. *Toward Ensuring a Smooth Transition Into High School*. (National High School Center, 2007). <http://www.mdrc.org/sites/default/files/toward%20ensuring%20policy%20brief.pdf>

## EFFECTIVE TRANSITION SUPPORT

Districts have addressed the issue of school transitions in several ways. First, some districts have reconfigured grade spans to reduce the number of transitions required, such as by creating K-8 schools to eliminate the middle school transition.<sup>34</sup> Districts have also created comprehensive transition programs to support students and reduce the potential negative effects of school transitions.<sup>35</sup> These transition support programs are a key strategy for improving student achievement and ensuring that students have realistic expectations for middle and high school,<sup>36</sup> especially because most common district grade configurations involve at least one school transition. In general, transition programs should be comprehensive efforts that involve all relevant stakeholders, address students' academic and social needs, and occur on an ongoing basis, as shown in Figure 1.6.

**Figure 1.6: Elements of Comprehensive Transition Programs**

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**Involve input from all stakeholders** (students, families, teachers, and staff).

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**Provide accurate, useful information** to students and parents.

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**Address students' academic needs and social needs** by coordinating instruction and programs between grade levels and providing additional support when necessary.

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**Provide ongoing support**, rather than a one-time orientation or meeting.

Source: Benner;<sup>37</sup> California Department of Education;<sup>38</sup> Education Partnerships, Inc.;<sup>39</sup> National Middle School Association and the National Association of Elementary School Principals;<sup>40</sup> Niesen and Wise<sup>41</sup>

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<sup>34</sup> Reeves, K. "Figuring and Reconfiguring Grade Spans." School Superintendents Association. <http://www.aasa.org/SchoolAdministratorArticle.aspx?id=8716>

<sup>35</sup> "The Power of a Great Education: PSEA's 20/20 Vision for the Future - Implement Transition Programs for Middle School and 9th Grade." Pennsylvania State Education Association, January 2010. [https://www.psea.org/uploadedfiles/legislationandpolitics/vision/vision\\_transitionprograms.pdf](https://www.psea.org/uploadedfiles/legislationandpolitics/vision/vision_transitionprograms.pdf)

<sup>36</sup> [1] Jacob and Rockoff, Op. cit., p. 16. [2] Kennelly, L. and M. Monrad. "Easing the Transition to High School: Research and Best Practices Designed to Support High School Learning." National High School Center. pp. 3–13. <http://files.eric.ed.gov/fulltext/ED501073.pdf>

<sup>37</sup> Benner, Op. cit.

<sup>38</sup> "The Importance of Easing Transitions for Young Adolescents." California Department of Education. <http://pubs.cde.ca.gov/tcsii/ch6/trnsitionyngadlsnt.aspx>

<sup>39</sup> "Research Brief - Transition from Middle School to High School." Education Partnerships, Inc. pp. 1–5. <http://files.eric.ed.gov/fulltext/ED538706.pdf>

<sup>40</sup> "Supporting Students in Their Transition to Middle School." National Middle School Association and the National Association of Elementary School Principals, 2002. <http://www.npsd.org/vimages/shared/vnews/stories/525d81ba96ee9/Tr%20-%20Supporting%20Students%20in%20Their%20Transition%20to%20Middle%20School.pdf>

<sup>41</sup> Niesen, V. and P.S. Wise. "Transition from Elementary to Middle School: Strategies for Educators." National Association of School Psychologists. [http://www.nasponline.org/communications/spawareness/transition\\_elem2mid.pdf](http://www.nasponline.org/communications/spawareness/transition_elem2mid.pdf)

The following sub-sections describe examples of strategies for supporting transitions to middle and high school.

### *K-12 ARTICULATION*

**Districts should be sure to coordinate curricula and transition support programs between elementary, middle, and high schools.**<sup>42</sup> Elementary school teachers, counselors, and principals should be aware of the concerns and anxieties that students face in transitioning to middle school. School staff can facilitate student transitions beginning in elementary school by emphasizing the positive aspects of middle school and teaching skills such as coping strategies, problem-solving, and study skills. In addition, schools can prepare students for the academic challenges of middle school by slowly increasing the amount of autonomy required for completing assignments.

Districts can also use similar strategies for coordination between K-8 or middle schools and high schools. In eighth grade, schools can begin providing information about what is expected in high school and identify eighth graders who may not be on track for success in high school.<sup>43</sup>

Finally, school district leaders should facilitate discussions about curriculum alignment between elementary, middle, and high schools to ensure smooth transitions between each level.<sup>44</sup> Principals and teachers can meet regularly to prevent gaps in content instruction and to ensure that students are gaining the skills necessary to succeed in middle and high school.<sup>45</sup>

### *MIDDLE SCHOOL TRANSITION SUPPORT*

Districts can support students transitioning to middle school in a variety of ways. First, they should engage teachers and staff in addressing students' ongoing social, developmental, and academic needs.<sup>46</sup> Middle school leaders, teachers and counselors should be knowledgeable about the needs of young adolescents and employ multiple approaches to meet students' needs, such as providing cooperative learning opportunities to encourage peer interaction and encouraging student participation in extra-curricular activities.<sup>47</sup> In addition, school counselors or social workers can provide individual or small group counseling for students experiencing particular difficulty in transitioning.<sup>48</sup>

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<sup>42</sup> [1] "Supporting Students in Their Transition to Middle School," Op. cit. [2] Lorain, P. "Transition to Middle School." National Education Association. <http://www.nea.org/tools/16657.htm> [3] Niesen and Wise, Op. cit. [4] "Successful K-12 Transitions through Vertical and Horizontal Articulation." American Institutes for Research, October 25, 2011. <http://www.ccrscenter.org/blog/successful-k-12-transitions-through-vertical-and-horizontal-articulation> [5] Parrish, T. et al. "Making the Move: Transition Strategies at California Schools with High Graduation Rates." WestEd, October 2011. pp. 8–9.

<sup>43</sup> Herlihy, C. Op. cit., p. 3.

<sup>44</sup> "NASSP Policy Recommendations for Middle Level Reform." National Association of Secondary School Principals, 2006. <http://www.nassp.org/Portals/0/Content/54017.pdf>

<sup>45</sup> [1] "Articulation Agreements with Elementary Schools." California Department of Education.

<http://pubs.cde.ca.gov/tcsii/ch6/agreefdrelemntrysch.aspx> [2] Parrish et al., Op. cit., pp. 8–9.

<sup>46</sup> "Supporting Students in Their Transition to Middle School," Op. cit.

<sup>47</sup> [1] Ibid. [2] Lorain, Op. cit. [3] Niesen and Wise, Op. cit.

<sup>48</sup> Niesen and Wise, Op. cit.



Second, districts should provide parents with multiple opportunities for involvement.<sup>49</sup> Schools should involve parents in school events and regularly interact with parents through various modes of communication, such as in-person meetings, email, regular mail, newsletters, and/or phone calls. Both elementary and middle schools should help parents learn about the developmental issues facing young adolescents and how this relates to transitioning to middle school, as well as encourage parents to talk with their children regarding anxieties about middle school.

Third, districts should provide students with multiple opportunities to meet other students and teachers and to visit the new school.<sup>50</sup>

Schools can plan a variety of activities to introduce students to their new school and address concerns. Districts have provided tours for new students and their families before the start of the school year, which can include maps and class schedules to incoming students, and hosted question and answer sessions as well as panels for current students to speak about their strategies for managing the transition to middle school. In addition, schools can provide opportunities for students to meet peers early in the year after students begin sixth or seventh grade, such as service days, fundraisers, buddy programs with current students, or extracurricular open houses.<sup>51</sup>

Finally, middle schools should ensure that students develop good attendance habits.<sup>52</sup> School districts with low graduation rates often have chronic absenteeism beginning in the middle grades; therefore, it is vital for middle schools to carefully monitor attendance and prevent truancy.<sup>53</sup> Education researcher Robert Balfanz recommends that schools track attendance in informative ways, such as by identifying students who are “moderately absent,” “chronically absent,” and “extremely chronically absent.” Then, schools can respond to absences and work with students and/or parents to address the source of absences. Schools can also use positive reinforcement strategies, rather than punitive measures, to encourage good attendance. For example, schools can recognize good attendance through public acknowledgement and social rewards and provide a structure for making up missed assignments, rather than suspending students for having too many absences.<sup>54</sup>

### Tips for Providing Middle School Transition Support

- ✓ Engage teachers and staff in addressing students’ ongoing social, developmental, and academic needs.
- ✓ Provide parents multiple opportunities to get involved.
- ✓ Provide students with multiple opportunities to meet other students and teachers and to visit the new school.
- ✓ Ensure students develop good attendance habits.

<sup>49</sup> “Supporting Students in Their Transition to Middle School,” Op. cit.

<sup>50</sup> [1] “Supporting Students in Their Transition to Middle School,” Op. cit. [2] Lorain, P. “Transition to Middle School.” National Education Association. <http://www.nea.org/tools/16657.htm> [3] Niesen and Wise, Op. cit.

<sup>51</sup> [1] Niesen and Wise, Op. cit. [2] Lorain, Op. cit.

<sup>52</sup> Balfanz, R. “Putting Middle Grades Students on the Graduation Path: A Policy and Practice Brief.” National Middle School Association, June 2009. [https://www.amlc.org/portals/0/pdf/articles/policy\\_brief\\_balfanz.pdf](https://www.amlc.org/portals/0/pdf/articles/policy_brief_balfanz.pdf)

<sup>53</sup> Ibid., p. 8.

<sup>54</sup> Ibid., pp. 8–9.

### HIGH SCHOOL TRANSITION SUPPORT

Strategies to support the transition to ninth grade are similar to those used in middle school. High school transition programs should introduce students to high school expectations during middle grades.<sup>55</sup> Early orientation programs or visits to high schools during the middle school years can help students understand what they should know and what will be expected of them in high school.<sup>56</sup>

Second, schools should involve all school stakeholders—students, teachers, and parents—in supporting students through the transition process. A study of high school transition programs throughout the country found that programs which involved both teachers and parents were more effective than those that only engaged teachers or only engaged parents in the program.<sup>57</sup> Some districts have used “transition teams” consisting of teachers, administrators, parents, and students from both middle and high schools to identify transition needs and develop plans for supporting students.<sup>58</sup> These teams can also review data to further understand students’ needs and identify practices that support students.

Third, districts should ensure that students are academically prepared for high school. Schools should establish ways to identify students who are not on track and provide timely interventions to address achievement issues. Districts can also periodically review middle and high school achievement data and examine middle school curricula to identify areas for improvement.<sup>59</sup> Summer bridge programs or mathematics “catch-up courses” can be used to provide additional academic support for students who are behind grade level.<sup>60</sup>

Finally, districts can create programs or structures that provide additional social support to students as they adapt to their new environments. Schools can create peer buddy, mentoring, or tutoring programs for new students, introduce them to advisors or counselors early in the year, and promote involvement in extracurricular activities from the start of ninth grade.<sup>61</sup>

#### Tips for Providing High School Transition Support

- ✓ Introduce students to high school expectations during middle grades.
- ✓ Involve all school stakeholders—students, teachers, and parents—in supporting students through the transition process.
- ✓ Ensure students are academically prepared for high school.
- ✓ Create programs or structures that provide additional social support to students as they adapt to their new environments.

<sup>55</sup> Bottoms, G. “Redesigning the Ninth-Grade Experience - Reduce Failure, Improve Achievement and Increase High School Graduation Rates.” Southern Regional Education Board, 2008. p. 5.  
[http://publications.sreb.org/2008/08v06\\_9th-grade\\_redesign.pdf](http://publications.sreb.org/2008/08v06_9th-grade_redesign.pdf)

<sup>56</sup> Ibid.

<sup>57</sup> Benner, Op. cit.

<sup>58</sup> “Research Brief - Transition from Middle School to High School,” Op. cit., p. 5.

<sup>59</sup> [1] Ibid., p. 4. [2] Parrish et al., Op. cit., p. 12.

<sup>60</sup> [1] Bottoms, Op. cit., pp. 5–10. [2] Neild, R.C. “Falling Off Track during the Transition to High School: What We Know and What Can Be Done.” The Future of Children, Spring 2009. pp. 67–69.  
[http://www.futureofchildren.org/publications/docs/19\\_01\\_04.pdf](http://www.futureofchildren.org/publications/docs/19_01_04.pdf)

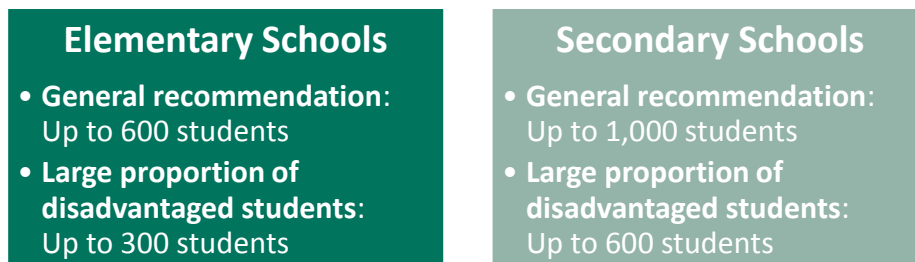
<sup>61</sup> [1] Parrish et al., Op. cit., pp. 8–19. [2] “Research Brief - Transition from Middle School to High School,” Op. cit., p. 3.

Schools can also use smaller learning communities, such as ninth grade academies, to help students develop a sense of community within the school and get to know their teachers (discussed in further detail in Section III).<sup>62</sup>

## IMPACT OF SCHOOL AND CLASS SIZE

**Research on the impacts of school and class size is somewhat mixed, but in general, most studies show that smaller school and class sizes are associated with positive outcomes.** A 2009 review of 57 school size studies found that smaller schools are more beneficial for students from disadvantaged social and economic backgrounds. The authors recommend that elementary schools not exceed 600 and secondary schools not exceed 1,000 students; schools with large proportions of disadvantaged students should be smaller (Figure 1.7).<sup>63</sup>

**Figure 1.7: School Size Recommendations**



Source: Leithwood and Jantzi<sup>64</sup>

In terms of class size, early grades elementary students in particular appear to benefit from smaller classes—**research on students in Grades K-3 indicates that class sizes of 18 students or fewer produce the largest benefits in terms of academic achievement;** disadvantaged students in particular benefit from smaller classes.<sup>65</sup> At the high school level, evidence regarding class size is mixed—several studies have found no relationship between smaller classes and academic performance—but a recent U.K. study found that smaller high school classes are beneficial for low-achieving students.<sup>66</sup> **Unfortunately, no studies have examined the optimal number of students per grade.** Hanover recommends that ACPS rely on research related to school and class size in order to determine the number of students per grade level at each school.

<sup>62</sup> Bottoms, Op. cit., p. 7.

<sup>63</sup> Leithwood, K. and D. Jantzi. “A Review of Empirical Evidence About School Size Effects: A Policy Perspective.” *Review of Educational Research*, 79:1, March 2009. p. 464.  
<http://search.proquest.com/docview/214115413?accountid=132487>

<sup>64</sup> Ibid.

<sup>65</sup> “Class Size and Student Achievement: Research Review.” Center for Public Education.  
<http://www.centerforpubliceducation.org/Main-Menu/Organizing-a-school/Class-size-and-student-achievement-At-a-glance/Class-size-and-student-achievement-Research-review.html>

<sup>66</sup> “Why Class Size Matters Today.” National Council of Teachers of English, April 2014.  
<http://www.ncte.org/positions/statements/why-class-size-matters> [2] Blatchford, P., P. Bassett, and P. Brown. “Do Low Attaining and Younger Students Benefit Most from Small Classes? Results from a Systematic Observation Study of Class Size Effects on Pupil Classroom Engagement and Teacher Pupil Interaction.” American Educational Research Association, 2008. [https://www.classsizematters.org/wp-content/uploads/2011/04/Blatchford\\_2008.pdf](https://www.classsizematters.org/wp-content/uploads/2011/04/Blatchford_2008.pdf)

## SECTION II: MODELS OF ELEMENTARY GRADE CONFIGURATION

In this section, Hanover Research assesses various common grade span configurations for Pre-Kindergarten (Pre-K) and elementary school organization. The configurations presented in the section represent the most frequently used models according to the literature, and consider frameworks currently used in other school districts.

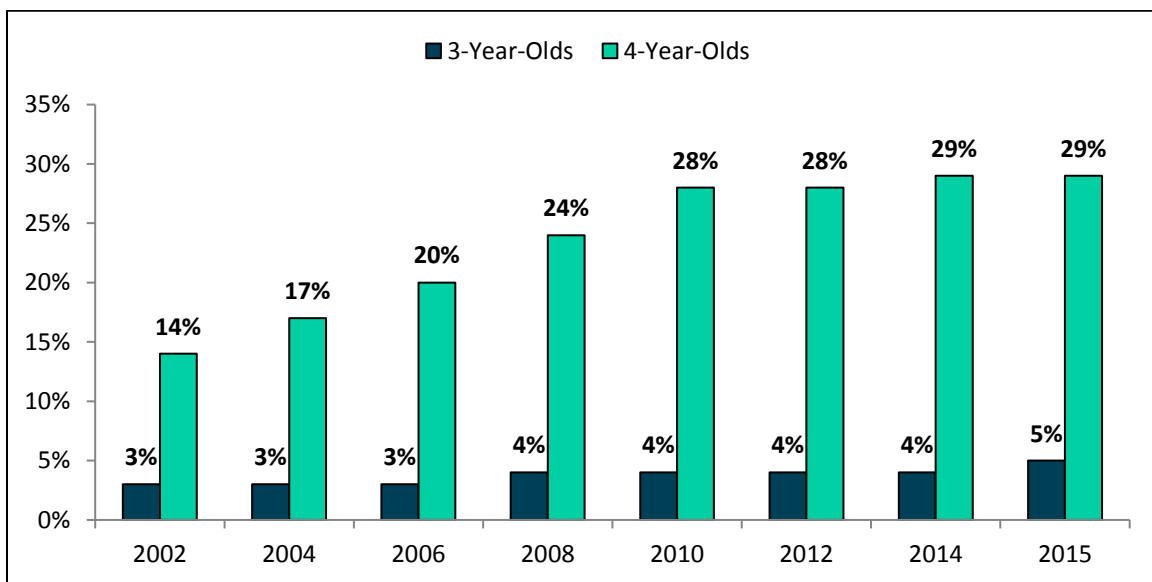
### KEY SECTION FINDINGS

- **Students do not appear to benefit from isolated early childhood experiences.** One study found that students in standalone pre-primary schools (i.e., Pre-K and/or Kindergarten) do not gain skills as fast over the course of the school year as their peers in elementary schools. This study found that more time is dedicated to instruction when Kindergarten is incorporated with elementary grade spans. However, it is possible that quality instruction in standalone pre-primary schools could result in positive outcomes. Recently, several school districts have established standalone pre-primary centers to ease overcrowding and to better address the needs of young learners, especially those who are typically unprepared for Kindergarten.
- **Comprehensive PreK-3 alignment is critical to ensure successful transitions into formal schooling and maintain student achievement.** A dedicated PreK-3 framework ensures that curricula and pedagogy are aligned across early childhood and early elementary classrooms, and this sequence points to the efficacy of including early childhood grades with elementary sequences. Moreover, reading achievement by Grade 3 is highly predictive of later student outcomes—such as high school completion—and schools should stress proficiency by that time. However, ensuring horizontal and vertical alignment can be a time-consuming and resource-intensive process.
- **Grade 6 students generally benefit from placement in elementary school in terms of both academic and behavioral outcomes.** Elementary school children in Grade 6 gain more academically over the course of the school year and experience significantly fewer behavior infractions than their peers in middle school configurations. However, data suggest that other factors affect Grade 6 performance and that district leaders should carefully consider how this configuration will impact student capacity in elementary school in particular; for example, other districts have had to construct new elementary schools and redistrict some students.
- **Intermediate school (Grades 5 and 6 only) are not supported by the literature.** Students in Grades 5 and 6 perform better as part of larger elementary grade spans than in isolation. Despite suggestions that these students often require dedicated social and emotional supports, there is no evidence that intermediate schools are better equipped to provide these resources than more standard elementary school settings.

## STANDALONE PRE-KINDERGARTEN/KINDERGARTEN

Enrollment in early childhood education programs continues to increase, despite the fact that only a small proportion of preschool-aged children matriculate in such programs each year. Nationwide in 2015, enrollment in pre-primary schools increased by roughly 37,000 children, with children aged 3 years making up the majority of that growth. Similarly, state funding for these programs grew by more than \$553 million between 2014 and 2015.<sup>67</sup> The proportion of children aged 3 and 4 years who attend early childhood programs has also gone up in recent years, with the largest gains observed in the 4-year-old population. In 2015, 29 percent of 4-year-olds enrolled in pre-primary programs; meanwhile, the proportion of children aged 3 years in these programs has remained relatively stable (Figure 2.1).<sup>68</sup>

**Figure 2.1: Percent of National Population Enrolled in Pre-primary Programs by Age**



Source: National Institute for Early Education Research<sup>69</sup>

In Virginia, there are over 18,000 students enrolled in the state pre-primary program and attendance trends largely mirror national growth.<sup>70</sup> These state and national data suggest that school districts can expect to see sustained interest in pre-primary programs, and will have to make important choices regarding how to place these students to ensure equity across demographic groups and high student achievement.

Indeed, **although participation in full-day early childhood education programs is increasing overall, children from affluent homes comprise a greater share of these enrollments.** Data

<sup>67</sup> Barnett, W.S. et al. "The State of Preschool 2015: State Preschool Yearbook." National Institute for Early Education Research, 2016. p.5. <http://nieer.org/sites/nieer/files/2015%20Yearbook.pdf>

<sup>68</sup> Ibid., p.6.

<sup>69</sup> Adapted from: Ibid.

<sup>70</sup> Ibid., p.161.

indicate that approximately half of all children aged 3 and 4 who are enrolled in pre-primary programs attend full-day classes. Of these participants, children from wealthier families are consistently more likely to attend early childhood programs than their less affluent peers. Between 1995 and 2011, full-day preprimary enrollment increased among higher-income children but did not change for their lower-income counterparts.<sup>71</sup> This indicates that school districts should consider accessibility and resource needs when designing schools for young children. This includes properly configuring the pre-primary grade levels (i.e., Pre-K and Kindergarten) to maximize performance, continuity, and accessibility.

### OVERVIEW OF RESEARCH

The research is clear that **participation in early childhood education programs increases student achievement and bolsters non-academic outcomes for all students**. For example, in a study of over 60,000 preschool-aged children in Virginia, researchers concluded that participation in the state-funded early childhood education program yielded later benefits. Students were less likely to be retained in Kindergarten compared to their peers who did not enroll; African-American boys who did not attend preschool had a 9.3 percent probability of being held back in Kindergarten compared to 3.6 percent among their peers who did attend such a program.<sup>72</sup> Further studies suggest that pre-kindergarten programs positively impact literacy, numeracy, and mathematics abilities, as well as children’s executive functioning and emotional recognition, across all student subgroups.<sup>73</sup>

Despite the evidence that supports participation in Pre-K and Kindergarten, **there is limited research that addresses grade span models at these levels**. In most cases, Kindergarten is incorporated into a longer grade span that covers elementary schools through Grades 4, 5, or 6, and little information is available for standalone schools. Figure 2.2 outlines two studies that assess student performance in pre-primary schools, here defined as a standalone building that houses Pre-K, Kindergarten, or both.

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<sup>71</sup> Burgess, K. et al. “Trends in the Use of Early Care and Education, 1995-2011.” U.S. Department of Health and Human Services, March 2014. p.5. [https://aspe.hhs.gov/sites/default/files/pdf/76831/rb\\_ece.pdf](https://aspe.hhs.gov/sites/default/files/pdf/76831/rb_ece.pdf)

<sup>72</sup> Huang, F.L., M.A. Invernizzi, and E.A. Drake. “The Differential Effects of Preschool: Evidence from Virginia.” *Early Childhood Research Quarterly*, 27:1, March 2012. pp.39–40. [http://www.smartbeginnings.org/Portals/5/PDFs/Differential\\_Effects\\_of\\_Preschool.pdf](http://www.smartbeginnings.org/Portals/5/PDFs/Differential_Effects_of_Preschool.pdf)

<sup>73</sup> Weiland, C. and H. Yoshikawa. “Impacts of a Prekindergarten Program on Children’s Mathematics, Language, Literacy, Executive Function, and Emotional Skills.” *Child Development*, 84:6, November 2013. p.2112. [http://www.viriya.net/jabref/impacts\\_of\\_a\\_prekindergarten\\_program\\_on\\_childrens\\_mathematics\\_language\\_literacy\\_executive\\_function\\_and\\_emotional\\_skills.pdf](http://www.viriya.net/jabref/impacts_of_a_prekindergarten_program_on_childrens_mathematics_language_literacy_executive_function_and_emotional_skills.pdf)

**Figure 2.2: Evidence of the Effects of Enrollment in Pre-primary Schools**

AUTHOR(S)	YEAR	STUDY SETTING	STUDY DESCRIPTION	OUTCOMES
Burkam, Michaels, and Lee <sup>74</sup>	2007	<ul style="list-style-type: none"> <li>12,384 Kindergarten students in 743 schools</li> <li>Data collected from the Early Childhood Longitudinal Study-Kindergarten Cohort (ECLS-K)</li> </ul>	<ul style="list-style-type: none"> <li>Researchers compared different grade spans that incorporate Kindergarten, including: Pre-primary (K only); Primary (K-2 or K-3); Elementary (K-5); and Combined (K-8).</li> <li>Enrollment in Pre-primary schools was the lowest, despite the prevalence of the model in the United States (over 12%) – this is due to smaller classes in Pre-primary schools.</li> </ul>	<ul style="list-style-type: none"> <li>Kindergarten students who attended Pre-primary schools were disadvantaged in terms of their learning.</li> <li>End-of-year assessments revealed comparable achievement across schools; however, Pre-primary students exhibited less growth and learning over the year.</li> <li>Teachers in Pre-primary schools typically reported fewer minutes of weekly reading and math instruction than teachers in other school settings.</li> </ul>
Berlinkski, Galiani, and Gertler <sup>75</sup>	2006	<ul style="list-style-type: none"> <li>Pre-primary schools constructed in Argentina to accommodate 175,000 children</li> <li>The gradual expansion of these programs allows researchers to track progress both before and after a school added pre-primary classes.</li> </ul>	<ul style="list-style-type: none"> <li>Pre-primary programs were expanded in Argentina to increase the enrollment of children aged 3 to 5.</li> <li>In Argentina, all Pre-primary schools are attached to traditional Primary settings.</li> </ul>	<ul style="list-style-type: none"> <li>One year of Preprimary school attendance increased Grade 3 performance by 8% of the mean.</li> <li>Measures of classroom attention, effort, discipline, and participation were also positively affected.</li> </ul>

**BENEFITS**

According to the research on standalone pre-primary configurations, **it appears as though students do not benefit from isolated early childhood education programming.** Although Berlinkski, Galiani, and Gertler found that one year of pre-primary school attendance increased student achievement in Grade 3 by roughly 8 percent, the pre-primary campuses were incorporated into traditional elementary-level buildings. The authors conclude that “expanding pre-primary education is an effective instrument to improve long-term academic performance.”<sup>76</sup> The context of this expansion, however, suggests that these improvements are only observed in new schools that fuse pre-primary and elementary configurations.

<sup>74</sup> Burkam, D.T., D.L. Michaels, and V.E. Lee. “School Grade Span and Kindergarten Learning.” *The Elementary School Journal*, 107:3, January 2007. Accessed via EBSCOHost.

<sup>75</sup> Berlinkski, S., S. Galiani, and P. Gertler. “The Effect of Pre-Primary on Primary School Performance.” Institute for Fiscal Studies, February 2006. <http://discovery.ucl.ac.uk/2695/1/2695.pdf>

<sup>76</sup> Ibid., p.22.

**Although the research addressing outcomes in standalone pre-primary schools is very limited, anecdotal evidence suggests that educators believe that these standalone centers may be valuable for addressing younger students' learning needs and easing overcrowding.**

A school district in Illinois, for example, recently announced plans to build a new Kindergarten center in order to temporarily address overcrowding in the district; the 18 new Kindergarten classrooms will help to free up space at the district's existing elementary schools.<sup>77</sup> In addition, Mukilteo School District in Washington plans to open a Kindergarten center in the 2017-18 school year to address the district's growing enrollment and to comply with a new state mandate requiring full-day kindergarten. The district hopes that the Kindergarten center will enable teachers to provide improved and more personalized school readiness services to its students, especially the low-income and English Learner students who may have lower preparedness for school.<sup>78</sup>

Similarly, Bellevue Union School District in California is planning to open an "early learning center" for preschool-age children to address the achievement gap in the district. The new early learning center will improve access to preschool for the district's Latino children, who make up 80 percent of the student population but who are much less likely to enroll in preschool than children of other ethnicities. The new early learning center will also provide in-house special education preschool services, which had previously been provided in a different location outside of the district.<sup>79</sup>

### *POTENTIAL DRAWBACKS AND LIMITATIONS*

The evidence does not support standalone pre-primary grade configurations as viable models of early childhood learning for all student groups. Researchers note that these models are often used in the private sector and thus are subject to selection bias regarding family affluence and child preparedness; indeed, "these mostly nonpublic schools tend to have smaller kindergarten enrollments, and they attract a more affluent and more academically prepared clientele than do the public primary and elementary schools."<sup>80</sup>

Given the general level of higher preparedness among most students who self-select into standalone pre-primary programs, **students in pre-primary schools do not grow or learn as fast as their peers in more traditional elementary settings.** According to Burkam, Michaels, and Lee, Kindergarten students in traditional elementary schools who underperformed at the start of the year were able to make more significant gains than higher-achieving students in pre-primary schools. The researchers posit that "although the disadvantages are not large in conventional terms, they translate to a learning deficit of between one and two months in

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<sup>77</sup> Zawislak, M. "\$11.8 Million Kindergarten Center Moving Ahead in District 73." Daily Herald, June 2, 2017. <http://www.dailyherald.com/news/20170602/118-million-kindergarten-center-moving-ahead-in-district-73>

<sup>78</sup> Bendici, R. "Kindergartners Get School of Their Own." District Administration Magazine, February 24, 2017. <https://www.districtadministration.com/article/kindergartners-get-home-their-own>

<sup>79</sup> Gonzalez, E.R. "Bellevue School District Opens Early Learning Center." The Press Democrat, June 20, 2017. <http://www.pressdemocrat.com/news/7099794-181/bellevue-school-district-opens-early?artslide=0>

<sup>80</sup> Burkam, Michaels, and Lee, Op. cit., p.300.



the two subjects.”<sup>81</sup> Figure 2.3 shows that students in elementary school (Grades K through 5) gained more in math and literacy than students in standalone programs.

**Figure 2.3: Math and Literacy Gains of Kindergarten Students by Grade Span**

GRADE CONFIGURATION	SAMPLE SIZE	MATH GAINS	LITERACY GAINS
Pre-primary	656	7.3	9.0
Primary	893	8.4	10.2
Elementary	7,802	8.2	10.0
Combined	3,033	8.4	10.2
<b>Overall</b>	<b>12,384</b>	<b>8.2</b>	<b>10.0</b>

Source: Burkam, Michaels, and Lee, “School Grade Span and Kindergarten Learning”<sup>82</sup>

The researchers hypothesized that these learning differentials could be attributed to generally lower levels of teacher preparation in pre-primary schools, as well as less instructional time (i.e., “fewer minutes of weekly instruction in both reading and mathematics”).<sup>83</sup> **It is unclear whether grade configuration itself ultimately affects outcomes for early grades students**—it is possible that standalone pre-primary and Kindergarten centers which employ qualified teachers who implement quality instruction would have a positive impact on student outcomes. Burkahm and colleagues state that further research is needed to determine whether Kindergarten students’ achievement is influenced primarily by grade span configuration or by other factors such as instructional practices, Kindergarten curriculum alignment with the Grade 1 curriculum, and Kindergarten students’ opportunities to interact with older children.<sup>84</sup>

### PRE-KINDERGARTEN/KINDERGARTEN WITH HIGHER GRADES

Although high-quality Pre-K and Kindergarten programs are found to benefit young children, particularly children from low-income households, these positive effects can diminish over time. This is explained by the “fade out effect,” or “the tendency of the positive effects to fade out by the time the children who had successful preschool experiences reach the third grade.”<sup>85</sup> **In order to reduce these fade out effects and ensure continued student achievement, research suggests that districts develop comprehensive and articulated pathways from Pre-K to Grade 3.** In this PreK-3 framework, teachers and administrators work together to align curricula, pedagogy, and learning assessments in order to transfer high-impact methods from early childhood education into elementary school.<sup>86</sup>

<sup>81</sup> Ibid., p.301.

<sup>82</sup> Adapted from: Ibid., p.297.

<sup>83</sup> Ibid., p.301.

<sup>84</sup> Ibid., p.301.

<sup>85</sup> “PreK-3<sup>rd</sup> Annual Report: Year One: 2011-2012.” San Francisco Unified School District, December 2012. p.6. [http://www.sfusd.edu/en/assets/sfusd-staff/programs/files/Early%20Education/PreK-3rd%20Report%20Year%20One\\_7-18-13.pdf](http://www.sfusd.edu/en/assets/sfusd-staff/programs/files/Early%20Education/PreK-3rd%20Report%20Year%20One_7-18-13.pdf)

<sup>86</sup> Ibid.

**Not only does dedicated PreK-3 alignment help to reduce the fade out effects that are common among young children, but an articulated framework can promote more successful transitions.** Indeed, these programs and elements “are designed to encourage more stable and predictable learning environments, both of which are key elements in optimal scholastic and social functioning.”<sup>87</sup> Overall, PreK-3 aims to ensure children’s access to quality and long-term early educational experiences. Although the literature does not specify that these grade spans must cohabitate one learning environment (e.g., a full Pre-K through Grade 3 school), it is important for administrators to provide a PreK-3 configuration that is well-aligned – this points to the benefits of including early grade levels (starting in either Pre-K or Kindergarten) in broader elementary school settings. Key principles of the PreK-3 framework are outlined below (Figure 2.4).

**Figure 2.4: Key Principles of PreK-3 Frameworks**



Source: Foundation for Child Development<sup>88</sup>

<sup>87</sup> Reynolds, A., K. Magnuson, and S. Ou. “PK-3 Education: Programs and Practices that Work in Children’s First Decade.” Foundation for Child Development, January 2006. p. 5. <https://fcd-us.org/sites/default/files/ProgramsandPractices.pdf>

<sup>88</sup> Adapted from: Ibid., p.7.

Having a dedicated PreK-3 framework ensures that school districts commit equal resources to early childhood education (i.e., Pre-K and Kindergarten) and early elementary education (i.e., Grades 1 through 3). According to some experts, in fact, “creating an intentionally aligned educational system for children 3 to 8 years old based on their developmental characteristics and abilities could be a major factor in sustaining public investments in education.”<sup>89</sup>

### OVERVIEW OF RESEARCH

Research regularly highlights the need for investments and curricula in Pre-K and Kindergarten to be sustained as children enter early elementary grade levels in an effort to avoid the aforementioned fade out effect. For example, the Abecedarian Project provided children with continued support for their academic development from birth through Pre-K, and then additional academic guidance in Kindergarten through Grade 2. The Project targeted multiple levels of child performance, and encouraged parents to actively participate in their children’s learning. Children who participate in the Abecedarian Project regularly report high levels of intellectual curiosity and reading achievement, for instance.<sup>90</sup> Experts find that the dedicated alignment between early childhood and early elementary education facilitates longer-term learning and performance gains.

Despite the evidence that promotes alignment within this grade span, there is little research that discusses how best to configure these classrooms. **In most cases, the literature assumes that schools maintain a traditional elementary grade sequence of Kindergarten through Grade 5, with Pre-K classes operated separately** (Figure 2.5). However, some states such as California report a limited number of K-3 schools, which could allow administrators to more closely underline and oversee the importance of these early grades.<sup>91</sup> The empirical studies address the importance of PreK-3 alignment in facilitating the transfer into formal schooling in Kindergarten and helping to reduce the negative transition effects.

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<sup>89</sup> Bogard, K. and R. Takanishi. “PK-3: An Aligned and Coordinated Approach to Education for Children 3 to 8 Years Old.” *Social Policy Report*, 19:3, 2005. p.5. <http://files.eric.ed.gov/fulltext/ED521747.pdf>

<sup>90</sup> Reynolds, Magnuson, and Ou, Op. cit., p.8.

<sup>91</sup> “Enrollment/Number of Schools by Grade Span and Type,” California Department of Education, Op. cit.

**Figure 2.5: Evidence of Effect and Importance of PreK-3 Alignment**

AUTHOR(S)	YEAR	STUDY SETTING	STUDY DESCRIPTION	OUTCOMES
Valentino and Stipek <sup>92</sup>	2016	<ul style="list-style-type: none"> <li>▪ Interviews with 12 early education policymakers in California</li> </ul>	<ul style="list-style-type: none"> <li>▪ Qualitative study with respondents from the state, district, and county levels, as well as one from a community foundation</li> <li>▪ Questions addressed six topics: definition; value; practices; best practices, barriers, and need for change; transitional Kindergarten; and local control</li> </ul>	<ul style="list-style-type: none"> <li>▪ Strong leadership is critical for ensuring alignment through Grade 3, and professional development needs to be aligned across sectors and grade levels.</li> <li>▪ It is important for districts to use data and continuous assessment to monitor the effectiveness of alignment.</li> </ul>
Hernandez <sup>93</sup>	2011	<ul style="list-style-type: none"> <li>▪ Data gathered from the National Longitudinal Survey of Youth (NLSY)</li> <li>▪ 3,975 children from 1986 to 2008</li> </ul>	<ul style="list-style-type: none"> <li>▪ Researchers gathered data from a nationally representative sample of children.</li> <li>▪ Disaggregated results by poverty status and race/ethnicity</li> <li>▪ NLSY data used the Peabody Individual Achievement Test (PIAT) to determine reading levels in Grade 3.</li> </ul>	<ul style="list-style-type: none"> <li>▪ One-in-six children who are not reading proficiently by Grade 3 do not graduate from high school.</li> <li>▪ Rate was highest for poor Black and Hispanic students (31% and 33%, respectively)</li> </ul>
Schulting, Malone, and Dodge <sup>94</sup>	2005	<ul style="list-style-type: none"> <li>▪ 17,212 children from 992 schools</li> <li>▪ 20% of children below poverty line</li> <li>▪ Data gathered from ECLS-K</li> </ul>	<ul style="list-style-type: none"> <li>▪ Researchers isolated variables for Kindergarten transition policies and practices.</li> <li>▪ Cognitive battery tests showed children’s achievement at the start and end of the year: reading, math, and general knowledge.</li> <li>▪ Parent involvement was also considered.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Kindergarten transition policies had a modest effect on students’ academic achievement.</li> <li>▪ These policies affect parent-initiated school involvement.</li> <li>▪ These results disproportionately benefit students from low- or medium-income families.</li> </ul>

**BENEFITS**

**Data indicate that reading achievement levels by Grade 3 can be highly predictive of later student outcomes including future reading achievement and high school completion.** About 17 percent of children who do not meet grade-level standards in reading and literacy by Grade 3 do not graduate from high school on time, for example; this proportion is roughly four times

<sup>92</sup> Valentino, R. and D.J. Stipek. “PreK-3 Alignment in California’s Education System: Obstacles and Opportunities.” Policy Analysis for California Education, May 2016. <https://edpolicyinca.org/sites/default/files/May%202016%20Valentino%20Stipek.pdf>

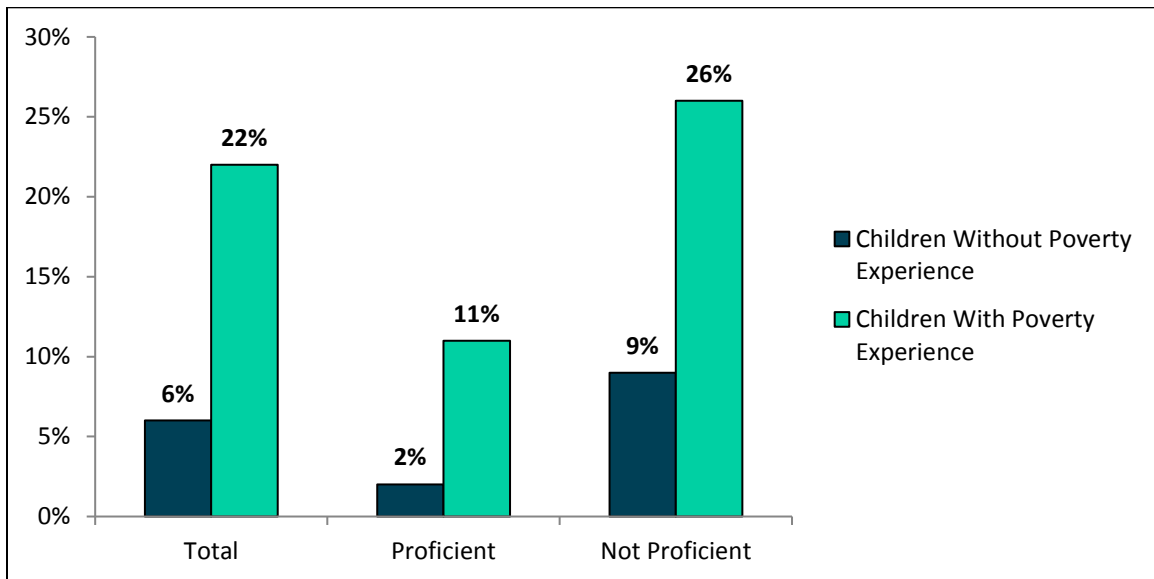
<sup>93</sup> Hernandez, D.J. “Double Jeopardy: How Third-Grade Reading Skills and Poverty Influence High School Graduation.” The Annie E. Casey Foundation, April 2011. <http://files.eric.ed.gov/fulltext/ED518818.pdf>

<sup>94</sup> Schulting, A.B., P.S. Malone, and K.A. Dodge. “The Effect of School-Based Kindergarten Transition Policies and Practices on Child Academic Outcomes.” *Developmental Psychology*, 41:6, 2005. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2757260/>

higher than among their peers who are reading proficiently.<sup>95</sup> These outcomes are even starker for students who come from less-affluent backgrounds (Figure 2.6).

This benchmark represents the key transition period for young students, who are “learning to read” until Grade 3 and “reading to learn” by Grade 4. Indeed, “up to half of the printed fourth-grade curriculum is incomprehensible to students who read below that grade level.”<sup>96</sup> These figures highlight the long term benefits of encouraging a well-aligned PreK-3 configuration that ensures children are reading proficiently by late elementary school.

**Figure 2.6: Children Not Graduating from High School by Age 19, by Poverty Status and Grade 3 Reading Proficiency**



Source: The Annie E. Casey Foundation<sup>97</sup>

Schulting, Malone, and Dodge further find that dedicated transition policies in Kindergarten “are related to improved academic achievement and increased parent-initiated school involvement [...] and that the impact of these practices is greatest for low-income children who are least likely to receive them.”<sup>98</sup> Given that PreK-3 frameworks have been found to facilitate these transitions, these results suggest that young students in schools where this early grade span sequence is promoted may enter Kindergarten at an advantage. Moreover, data reveal that **Grade 3 achievement and quality transition policies are disproportionately beneficial for disadvantaged students.** This implies that districts can bolster early childhood achievement for *all* students through careful PreK-3 articulation and grade sequencing.

<sup>95</sup> Hernandez, Op. cit., p.5.

<sup>96</sup> Fiester, L. and R. Smith. “Early Warning! Why Reading by the End of Third Grade Matters.” The Annie E. Casey Foundation, 2010. p.9. [http://www.aecf.org/m/resourcedoc/AECF-Early\\_Warning\\_Full\\_Report-2010.pdf](http://www.aecf.org/m/resourcedoc/AECF-Early_Warning_Full_Report-2010.pdf)

<sup>97</sup> Adapted from: Hernandez, Op. cit., p.8.

<sup>98</sup> Schulting, Malone, and Dodge, Op. cit.

### *POTENTIAL DRAWBACKS AND LIMITATIONS*

Despite the benefits associated with PreK-3 alignment, there can be several challenges to implementing a new framework. In most cases, ensuring both horizontal and vertical alignment throughout a district can be both time-consuming and cost-intensive. Through several interviews with teachers and administrators in PreK-3 districts, Valentino and Stipek found, for example, that PreK-3 alignment often requires:

- Communication between teachers across and within grades;
- Professional development and training that brings teachers at different grade levels together;
- Strong leadership committed to PreK-3 alignment;
- Funding and teacher credentialing parity between preschool and elementary school;
- Uniform and continuous assessments and data systems; and
- Alignment of curriculum and standards.<sup>99</sup>

**Many of these considerations require high levels of administrative oversight and strong leadership.** District leaders must actively promote realignment efforts and schedule time for dedicated training, encourage teacher collaboration across grade levels and schools, and allocate funds to support the initiative.<sup>100</sup> At the school level, elementary school principals can demonstrate strong leadership by identifying at-risk children in Pre-K settings to monitor once they enter Kindergarten or Grade 1; this can include supporting students from low-income households or English learners, and developing relationships with their parents early in the schooling process. Most importantly, this will help schools build a shared vision among all stakeholders and further boost perceptions of alignment efforts.<sup>101</sup>

The Education Commission of the States (ECS) recently highlighted 12 policies that are “emerging drivers” in steering public education. These policies promote P-20 education (from early childhood education to postsecondary institutions) and address some of the greatest challenges facing schools.<sup>102</sup> The first emerging policy proposal espoused by ECS is to expand the focus on PreK-3 education in order to create smoother transitions into elementary school and increase the likelihood that students reach grade-level benchmarks by Grade 3. However, ECS identifies several challenges that schools implementing a dedicated PreK-3 alignment sequence should consider (Figure 2.7).

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<sup>99</sup> Bullet points taken almost verbatim from: Valentino and Stipek, Op. cit., p.5.

<sup>100</sup> Ibid., pp.5–6.

<sup>101</sup> “Policy Brief: The Importance of Aligning Pre-K through 3<sup>rd</sup> Grade.” The Pre-K Coalition. p.4.  
<http://www.centerforpubliceducation.org/Main-Menu/Pre-kindergarten/Pre-K-Coalition/Policy-Documents/Issue-brief-Dec-2011.pdf>

<sup>102</sup> “12 for 2012: Issues to Move Education Forward in 2012.” Education Commission of the States, January 2012. p.3.  
<http://www.ecs.org/clearinghouse/01/00/28/10028.pdf>

**Figure 2.7: Challenges in Expanding the Focus to PreK-3 Sequencing**

CHALLENGE	DESCRIPTION
<b>Changing Mindsets</b>	The most dramatic brain development occurs before children enter formal schooling at age 5 or 6. It took decades for Kindergarten to be accepted as the start of formal education. Now another paradigm shift must occur for us to get used to saying that Pre-Kindergarten is the first year (or the first two years) of school. It is still a perception among some policy leaders and parents that Pre-K programs are “taking people’s children away,” and some have strongly held beliefs that Pre-K is the responsibility of the family. Yet early education is critical if children are to succeed in school.
<b>Funding</b>	Over the last years, states have struggled in a very difficult fiscal environment. Often the response is to reduce spending in the earliest years because it is seen as less essential than K-12.
<b>Assuring Quality</b>	Simply having a Pre-K classroom available will not guarantee the gains necessary to ensure school readiness and success in subsequent grades. This remains true for P-3, particularly if children are to be proficient readers by the end of Grade 3.
<b>Instructional Leadership</b>	Optimal learning will occur when principals and early childhood directors are cognizant of the P-3 continuum, and ensure it is high quality and well-aligned.
<b>Ensure Proficiency without Negative Approaches</b>	State initiatives to retain students not reading at grade level by the end of Grade 3 may inadvertently punish students who have not received the same quality instruction and curriculum as more-advantaged peers. Research indicates that students who are over-age for their grade (including those retained) are more likely to drop out of high school than their peers.

Source: Education Commission of the States<sup>103</sup>

**IMPLEMENTATION CONSIDERATIONS AND EXAMPLES**

Education experts, administrators, and practitioners identify common practices that districts and schools employ when transitioning to a more aligned PreK-3 system. To promote PreK-3, most school leaders underscore the importance of: (1) professional development; (2) teacher and principal visits to other classrooms; and (3) data collection – both child assessment and classroom quality data.<sup>104</sup> Perhaps the most important element of this transition is the dedicated alignment of policies and practices between Pre-K sites and K-3 grade levels. Indeed, “most districts endeavoring to promote PreK-3 alignment offered joint [professional development] sessions for Pre-K and elementary teachers and more informal opportunities (e.g., workshops) for communication among teachers and parents.”<sup>105</sup>

Based on their interviews with district and school leaders, as well as a review of effective PreK-3 systems in California, Valentino and Stipek identified six key practices that successful schools implement when adopting an articulated early childhood and elementary grade span (Figure 2.8).

<sup>103</sup> Adapted from: Ibid., p.4.

<sup>104</sup> Valentino and Stipek, Op. cit., p.9.

<sup>105</sup> Ibid.

**Figure 2.8: Key Practices for Implementing a PreK-3 Grade Sequence**

- **Parent Involvement:** Connect parents with teachers before children enter school so parents have a vision for Pre-K or Kindergarten. Providing information to parents on what children will experience in the next grade integrates parents into the alignment process. It gives them the opportunity to engage in practices at home that are more aligned with the goals and experiences to come when children enter school.
- **Professional Development and Communication:** Coordinate meetings and professional development sessions between Pre-K, Head Start, childcare, and K-3 teachers to create a common set of child development goals for children in the district, and to increase teachers' understanding of what precedes and follows their own grade level.
- **Leadership:** Ensure principal buy-in and provide training to principals.
- **Funding:** Invest local control dollars in Pre-K to reduce the disparity in funding between Pre-K and K-3 and to increase access to Pre-K.
- **Longitudinal Data Systems:** Although no district has yet created linked data systems that use common assessment across grades to track student progress, a few districts are working with this objective in mind.
- **Quality Evaluation:** Well-aligned programs implement best practices within grades. Most districts aspire to use high-quality evaluation measures, administered by qualified external observers, to monitor classroom quality and provide feedback for quality improvement.

Source: Policy Analysis for California Education<sup>106</sup>

The National Association of Elementary School Principals (NAESP) recently assembled a Task Force to define components of a high-quality PreK-3 grade sequence. Like Valentino and Stipek's findings, many of NAESP's recommendations highlight the importance of teacher training and strong leadership to ensure that curricula and experiences are aligned across grade levels, as well as the use of data to monitor program effectiveness.<sup>107</sup> San Francisco Unified School District (SFUSD) implemented a PreK-3 system in 2011 that has experienced success over the five years since its inception. While planning for the change, leaders in SFUSD promoted a city-wide focus on five indicators for success across stakeholder groups:<sup>108</sup>

- Aligned educational strategies and resources within and across grades;
- Aligned standards, sequenced curriculum, instruction, and assessments;
- Joint planning and shared professional development;
- Strong administrative leadership; and
- Aligned support services.

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<sup>106</sup> Adapted from: Ibid., p.16.

<sup>107</sup> "Building & Supporting an Aligned System: A Vision for Transforming Education Across the Pre-K-Grade Three Years." The NAESP Foundation. p.3. [http://www.naesp.org/resources/1/NAESP\\_Prek-3\\_C\\_pages.pdf](http://www.naesp.org/resources/1/NAESP_Prek-3_C_pages.pdf)

<sup>108</sup> Bullet points taken verbatim from: "PreK-3<sup>rd</sup> Annual Report: Year One: 2011-2012," Op. cit., p.9.



These goals again align with practices derived from both qualitative research and benchmarking efforts. This highlights the importance of instituting these policies for ensuring high-quality early childhood and early elementary articulation. Given that most elementary schools operate from Kindergarten through at least Grade 3, the primary focus of alignment efforts will most likely be aimed at the Pre-K-to-Kindergarten transition. According to researchers, “the transition to Kindergarten can be challenging as it represents a shift on many fronts. Children are moving from a preschool, daycare center, or their own home, where different rates of development had been acceptable, to an elementary school requiring mastery of specific academic skills.”<sup>109</sup>

To facilitate this transition, Schulting, Malone, and Dodge identified several common transition supports that have been empirically linked with increased student performance and parental involvement. These include:

- Information about the Kindergarten program is phoned or sent home to parents;
- Preschoolers spend time in the Kindergarten classroom;
- School days are shortened at the beginning of the school year;
- Parents and children visit Kindergarten prior to the start of the school year;
- Teachers visit students’ homes at the beginning of the school year; and/or
- Parents attend an orientation session prior to the school year.<sup>110</sup>

## ENDING ELEMENTARY SCHOOL IN GRADE 5 VERSUS GRADE 6

There is typically a large difference in the educational environments between elementary and middle schools, and the decision to place certain grades in certain school levels can impact how students perform. One grade level that is particularly affected by these differences is Grade 6, which is commonly placed in both elementary school (Grades K through 6) and middle school (Grades 6 through 8) settings. This placement decision impacts a student’s educational paradigm, as education practitioners posit,

[...] a sixth grader in an elementary school will typically be assigned to one teacher and spend much the day in that teacher’s classroom with the same group of students. A sixth grader in middle school will typically be assigned to a team of teachers and move from classroom to classroom over the course of the school day, with somewhat different groups of students in each.<sup>111</sup>

Indeed, this discrete transition for middle-level-aged students is characterized by significant changes in school structure, curriculum, and pedagogy, and **district leaders need to consider the most appropriate time to incorporate this movement in grade sequencing** (Figure 2.9).

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<sup>109</sup> Schulting, Malone, and Dodge, Op. cit.

<sup>110</sup> Bullet points adapted from: Ibid.

<sup>111</sup> Cook, P.J. et al. “The Negative Impacts of Starting Middle School in Sixth Grade.” *Journal of Policy Analysis and Management*, 27:1, December 1, 2008. p. 106. <http://dx.doi.org/10.1002/pam.20309>

Regardless of specific grade level transition, research suggests that these students perform better if many of these factors remain fluid between school levels, such that school districts could minimize abrupt school-to-school changes and, instead, gradually introduce new instructional practices.<sup>112</sup>

**Figure 2.9: Major Changes between Elementary and Secondary Schools**

ELEMENTARY SCHOOL	MIDDLE-LEVEL SCHOOL
<b>ENVIRONMENTAL CHANGES</b>	
Small schools	Large school
Oldest in the school	Youngest in the school
One or two teachers, close relationships	Many teachers, distant relationships
Same classroom with same classmates	Changing classrooms from one period to another
<b>CHANGES IN TEACHING PRACTICE</b>	
Smaller classes with opportunities for decision-making	Greater emphasis on teacher control and discipline; fewer decision-making opportunities for students
Small group and individual instruction	Whole-class instruction
Mix of abilities in each class	Increased between-class ability grouping
Learning opportunities that demand higher-order cognitive processes	Less cognitively demanding tasks (for example, drill), yet stricter evaluation criteria

Source: RAND Education<sup>113</sup>

These inherent differences can cause district administrators to debate whether to end elementary school in Grade 5 or 6. Much of the concern stems from a Grade 6 students’ position relative to other students; that is, they will either be the oldest children in a school or the youngest. Because these students are still developing (aged between 10 and 14 years typically) and experiencing many common changes associated with adolescence, the effect of peer groups is doubly important in terms of social, academic, and developmental changes.<sup>114</sup>

**OVERVIEW OF RESEARCH**

A number of empirical studies discuss the impact of Grade 6 placement on student outcomes (Figure 2.10). These studies largely compare student achievement and behavior between those who attend K-5/6-8 sequences with their counterparts in K-6 schools. By comparing students who are learning the same core material, yet who are placed in different school settings, researchers can begin to pinpoint the effects of grade sequencing for late elementary students and how environmental factors may influence outcomes.

<sup>112</sup> Juvonen et al., Op. cit., p. 19.

<sup>113</sup> Adapted from Ibid., p. 15.

<sup>114</sup> Cook et al., Op. cit., p. 106.

**Figure 2.10: Evidence of the Effects of Grade 6 Placement in Grade Sequences**

AUTHOR(S)	YEAR	STUDY SETTING	STUDY DESCRIPTION	OUTCOMES
Dove, Pearson, and Hooper <sup>115</sup>	2010	<ul style="list-style-type: none"> <li>▪ 281 schools in Arkansas that contained Grade 6</li> <li>▪ All schools must have retained their grade span for three years</li> </ul>	<ul style="list-style-type: none"> <li>▪ Researchers observed 20 different grade span configurations with Grade 6.</li> <li>▪ Math and literacy scores were tracked over three years.</li> <li>▪ Grade spans were classified either as no transition (K-6, 1-6), first year of transition (6-7, 6-8), or second year of transition (5-6, 5-7, 5-8).</li> </ul>	<ul style="list-style-type: none"> <li>▪ Data did not reveal a statistically significant relationship between grade span and academic outcomes for Grade 6 students.</li> <li>▪ Researchers concluded that other factors impact achievement in the middle years (e.g., projected enrollment, transportation costs, etc.).</li> </ul>
Cook et al. <sup>116</sup>	2008	<ul style="list-style-type: none"> <li>▪ 99 school districts in North Carolina that contained Grade 6</li> </ul>	<ul style="list-style-type: none"> <li>▪ Researchers examined both academic and behavioral outcomes.</li> <li>▪ Grade spans were classified depending on the placement of Grade 6: in elementary school, in middle school, or divided between the two.</li> <li>▪ Student performance was measured using data from end-of-year tests in math and reading.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Grade 6 students attending middle schools had lower academic performance than those attending elementary schools.</li> <li>▪ Grade 6 students attending middle schools were also more likely to be cited for discipline problems.</li> <li>▪ This effect was consistent even after controlling for SES and demographic characteristics.</li> </ul>
Rickles and White <sup>117</sup>	2005	<ul style="list-style-type: none"> <li>▪ Schools in Los Angeles Unified School District</li> </ul>	<ul style="list-style-type: none"> <li>▪ Researchers compared student performance between Grade 6 students in elementary school (K-6) and their peers in middle school (6-8).</li> <li>▪ Student performance was measured using California STAR assessments in English Language Arts (ELA) and math.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Grade 6 students in elementary school outperformed their peers and had higher gains in English and math over the course of the school year.</li> <li>▪ Achievement gains experienced by Grade 6 students in elementary school diminished after their transition, but persisted to a lesser degree through Grade 7.</li> <li>▪ Overall, students achieved higher gains between Grades 5 and 7 in K-6 schools.</li> </ul>

<sup>115</sup> Dove, M.J. and L.C. Pearson. "Relationship Between Grade Span Configuration and Academic Achievement." <http://files.eric.ed.gov/fulltext/EJ880581.pdf>

<sup>116</sup> Cook et al., Op. cit.

<sup>117</sup> Rickles, J.H. and J.A. White. "Implications of Attending a K-6 Elementary School on Sixth and Seventh Grade Achievement." Los Angeles Unified School District Program Evaluation and Research Branch, March 2005. [http://notebook.lausd.net/pls/ptl/docs/PAGE/CA\\_LAUSD/FLDR\\_ORGANIZATIONS/FLDR\\_PLCY\\_RES\\_DEV/PAR\\_DIVISION\\_MAIN/RESEARCH\\_UNIT/PUBLICATIONS/POLICY\\_REPORTS/K6VSMS\\_REPORT\\_FINAL\\_PERBPUB246.PDF](http://notebook.lausd.net/pls/ptl/docs/PAGE/CA_LAUSD/FLDR_ORGANIZATIONS/FLDR_PLCY_RES_DEV/PAR_DIVISION_MAIN/RESEARCH_UNIT/PUBLICATIONS/POLICY_REPORTS/K6VSMS_REPORT_FINAL_PERBPUB246.PDF)

**BENEFITS**

Overall, the data indicate that Grade 6 students generally have higher academic outcomes and better behavior in elementary school settings. In two separate studies, researchers found that Grade 6 students who attended K-6 schools outperformed their peers in Grades 6-8 schools in English language arts and math on end-of-year assessments. Rickles and White examined the academic progress of Grade 6 students in the Los Angeles Unified School District (LAUSD), given that the district operates both K-6 and 6-8 schools. They discovered that Grade 6 students in elementary school gained more over the course of the year than their counterparts in middle school settings (Figure 2.11).<sup>118</sup> Cook and colleagues found similar results in North Carolina, concluding that “the middle school configuration that brings seventh and eighth graders into regular contact with sixth graders is problematic.”<sup>119</sup>

**Figure 2.11: Grade 6 End-of-Year Scale Scores by School Type, LAUSD**

SCHOOL SETTING	ENGLISH LANGUAGE ARTS				MATH			
	Sample	2003	2004	Adjusted Change	Sample	2003	2004	Adjusted Change
<b>K-6</b>	1,043	326.4	337.8	15.7	1,041	333.1	344.3	20.6
<b>6-8</b>	6,568	346.1	344.4	4.4	6,588	359.2	348.2	8.0

Source: Rickles and White; “Implications of Attending a K-6 Elementary School on Sixth and Seventh Grade Achievement”<sup>120</sup>

Moreover, when comparing infraction rates for Grade 6 students between the two school settings, researchers revealed that these students, when attending a middle school, acquired more infractions than their peers in elementary schools. While the majority of these increases were for minor infractions or rowdy behavior, the rate of violence also increased significantly (Figure 2.12). Overall, Cook and colleagues found that “both the incidence and prevalence rate for every type of infraction were considerably higher for sixth graders in middle school than for elementary school students. The overall incidence was three times as high [...] and the prevalence rate twice as high.”<sup>121</sup> This suggests that Grade 6 students may benefit from being the oldest, which should help reduce the number of adverse and antisocial behaviors that they demonstrate.

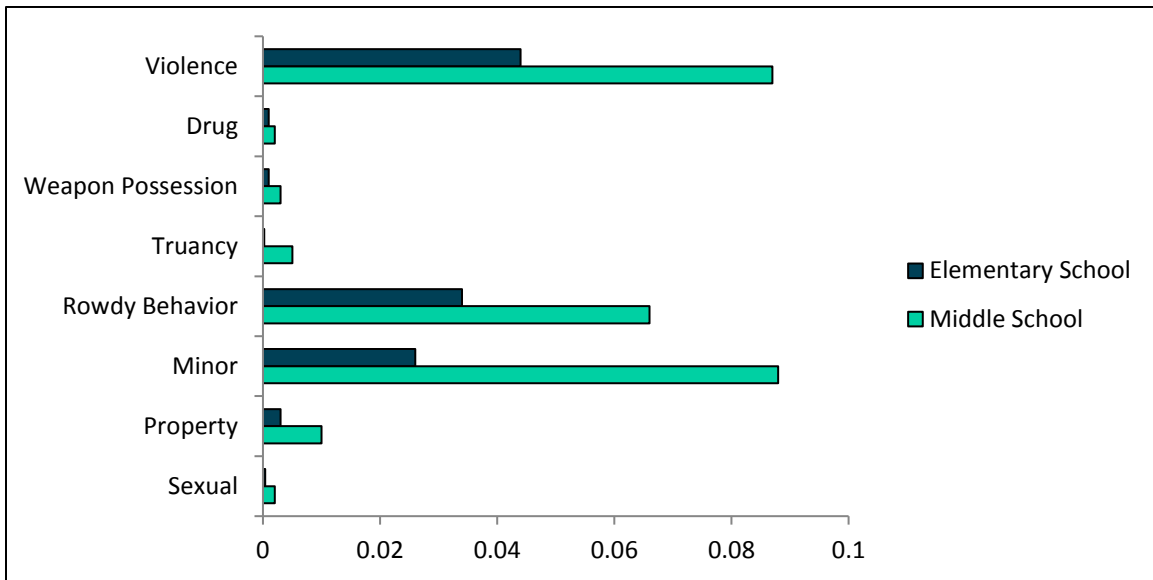
<sup>118</sup> Rickles and White, Op. cit., p.3.

<sup>119</sup> Cook et al., Op. cit., p. 118.

<sup>120</sup> Adapted from: Rickles and White, Op. cit., p.3.

<sup>121</sup> Cook et al., Op. cit., p. 112. Emphasis added.

**Figure 2.12: Prevalence of Infractions for Grade 6 Students by School Type**



Source: Cook et al.; “The Negative Impacts of Starting Middle School in Sixth Grade”<sup>122</sup>

### POTENTIAL DRAWBACKS AND LIMITATIONS

Despite the benefits described above, it should be noted that the placement of Grade 6 students in elementary school is not agreed-on by all researchers. For example, Dove, Pearson, and Hooper studied Grade 6 sequences in Arkansas across over 250 different schools and 20 different grade configurations. Students were subdivided into three main categories, depending on what type of school the student attended in Grade 6: no transition (mostly K-6 schools), first year of transition (mostly 6-7 school), and second year of transition (mostly 5-6 and 5-8 schools).<sup>123</sup> Based on end-of-year assessments, data suggest that grade configuration differences in both math and literacy scores were marginal. In fact, across the three years of the study, the researchers found no statistically significant differences in mean scores between the three models.<sup>124</sup> These findings suggest that grade configuration alone may not account for all the differences in performance between Grade 6 students placed in different school settings.

Another potential concern noted in the literature is that the lower middle school Grade 6 performance is the result of negative transition effects, and that schools may expect Grade 7 students who move to middle schools to experience comparable performance differentials. Rickles and White posited that “gains might be due to an artificial (or one-time) decrease in scores for sixth grade middle school students. More specifically, the transition from elementary school to middle school may be the primary cause of lower test scores for sixth graders in middle school.”<sup>125</sup> However, based on data from LAUSD, they ultimately concluded that **“the magnitude of achievement gains for sixth graders at K-6 schools outweighs the**

<sup>122</sup> Ibid.

<sup>123</sup> Dove and Pearson, Op. cit., pp. 282–283.

<sup>124</sup> Ibid., p. 290.

<sup>125</sup> Rickles and White, Op. cit., p.4.

**decrease in test scores experienced when they matriculate to middle school.”<sup>126</sup>** This implies that Grade 6 students in elementary school gain relative to their peers in middle school at a significant enough level to withstand the expected declines associated with school transitions.

### *IMPLEMENTATION CONSIDERATIONS AND EXAMPLES*

The main issue that districts will need to address if they consider placing Grade 6 in elementary school settings is accommodating student capacity. Of course, with an additional grade level in each elementary school, it will be necessary to consider how schools will meet the challenge of additional student enrollment. Recently, for example, the Wentzville School District in Missouri voted to expand elementary education through Grade 6 by the 2017-2018 school year. To address their anticipated capacity issues, the district proposed the following:

This plan is only made possible with the construction of two new elementary buildings and redistricting the boundaries for all elementary schools. Each building will be addressed and boundaries altered so there is not only room for sixth graders now, but room for growth over the next three to five years as well.<sup>127</sup>

Thus, Wentzville School District plans to build new campuses and redistrict some students to accommodate the increased elementary student enrollment. The district also notes that typical construction costs are substantially lower for new elementary school buildings than for middle schools, thus making the reconfiguration more feasible.<sup>128</sup> Like ACPS, Wentzville is projected to experience increasing student numbers, and has restructured their grade sequences to respond to these projections.

Other considerations for moving Grade 6 to elementary school include: class structure, teacher transfers and possible professional development, school boundaries, a changed culture in both elementary and middle schools, and planning for the transition across departments.<sup>129</sup>

### **INTERMEDIATE SCHOOL (GRADES 5 AND 6)**

Finally, one unique elementary school grade configuration is the intermediate campus, which typically serves Grades 5 and 6 only. These campuses aim to isolate late elementary and early middle school students, who experts argue typically require additional supports. Indeed, experts assert that students in this age-band are in a “developmental period in which prevention and intervention efforts can be particularly effective in deterring negative

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<sup>126</sup> Ibid., p.5. Emphasis added.

<sup>127</sup> “K-6 Frequently Asked Questions (FAQ).” Wentzville School District. p.2.

[http://wentzville.k12.mo.us/pluginfile.php/41516/mod\\_page/content/15/K-6%20FAQ%20FINAL.pdf](http://wentzville.k12.mo.us/pluginfile.php/41516/mod_page/content/15/K-6%20FAQ%20FINAL.pdf)

<sup>128</sup> Ibid., p.3.

<sup>129</sup> Beaver, T. “Pasco Sixth-Graders to Stay in Elementary School Next Year.” *Tri-City Herald*, September 2014.

<http://www.tri-cityherald.com/news/local/article32197689.html>

trajectories or outcomes.”<sup>130</sup> Intermediate schools, in theory, can allow teachers to become subject-area experts and provide resources dedicated to the unique social and emotional needs of students in these grades.<sup>131</sup>

**OVERVIEW OF RESEARCH**

The research that addresses intermediate schools typically compares student achievement in 5-6 schools with their peers in K-5 or K-6 schools (Figure 2.13). This suggests that intermediate models are more often associated with elementary school settings than with middle school settings, implying that these campuses are considered more structurally similar to elementary schools, and offer districts an alternative to elementary grade spans (rather than as a replacement for middle school models).

**Figure 2.13: Evidence of the Effects of Intermediate Schools on Student Performance**

AUTHOR(S)	YEAR	STUDY SETTING	STUDY DESCRIPTION	OUTCOMES
Fiaschetti and Slate <sup>132</sup>	2014	<ul style="list-style-type: none"> <li>▪ 2,986 schools in Texas</li> <li>▪ Researchers isolated results for only economically disadvantaged students</li> </ul>	<ul style="list-style-type: none"> <li>▪ Researchers compared students between two groups: PreK-5 or PreK-6 schools; and single- or double-grade enrollees (4-5, 5, or 5-6).</li> <li>▪ Texas reading assessment was used to measure student achievement (TAKS).</li> </ul>	<ul style="list-style-type: none"> <li>▪ Students who were economically disadvantaged and who were enrolled in schools with a larger grade span outperformed their peers in single/dual grade schools.</li> </ul>
Johnson et al. <sup>133</sup>	2012	<ul style="list-style-type: none"> <li>▪ 3,388 Grade 5 students enrolled across three elementary schools and six intermediate schools</li> <li>▪ Majority Hispanic (49%) and Black (35%) population</li> </ul>	<ul style="list-style-type: none"> <li>▪ Researchers used TAKS science assessment to compare Grade 5 achievement between students in elementary (K-5) and intermediate (5-6) schools.</li> <li>▪ Data collected over a three-year period</li> </ul>	<ul style="list-style-type: none"> <li>▪ Elementary campuses had higher passing rates than intermediate campuses (18% differential).</li> <li>▪ Elementary configurations yielded higher results for each of the three test administrations.</li> </ul>

<sup>130</sup> Coyl, D.D. “Kids Really Are Different These Days.” *Phi Delta Kappan*, February 2009. p.407. [http://www.pdkmembers.org/members\\_online/publications/Archive/pdf/k0902coy.pdf](http://www.pdkmembers.org/members_online/publications/Archive/pdf/k0902coy.pdf)

<sup>131</sup> Combs, J.P. et al. “Academic Achievement for Fifth-Grade Students in Elementary and Intermediate School Settings: Grade Span Configurations.” *Current Issues in Education*, 14:1, March 2011. p.6. Accessed via EBSCOHost.

<sup>132</sup> Fiaschette, C.F. and J.R. Slate. “Differences in Student Achievement by Grade Span Configuration for Students Who Were Economically Disadvantaged.” *Journal of Education Research*, 8:4, October 2014. Accessed via EBSCOHost.

<sup>133</sup> Johnson, D. et al. “The Relationship Between Grade Configuration and Standardized Science Test Scores of Fifth-Grade Students: What School Administrators Should Know.” *Journal of At-Risk Issues*, 17:2, July 2012. Accessed via EBSCOHost.

AUTHOR(S)	YEAR	STUDY SETTING	STUDY DESCRIPTION	OUTCOMES
Combs et al. <sup>134</sup>	2011	<ul style="list-style-type: none"> <li>▪ 1,356 schools in Texas</li> <li>▪ 678 elementary schools (K-5) and 678 intermediate schools (5 or 5-6)</li> <li>▪ About half of students identified as low SES</li> </ul>	<ul style="list-style-type: none"> <li>▪ Data collected over a five-year period</li> <li>▪ Researchers studied the impacts of whether Grade 5 students were the oldest or the youngest students in school.</li> <li>▪ Student achievement was monitored using Texas state tests (TAKS) for reading and math.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Grade 5 students in elementary schools had significantly higher math and reading scores than their peers in intermediate schools (effect sizes of 0.47 and 0.37, respectively).</li> <li>▪ These results persisted across all five years.</li> </ul>

*BENEFITS*

Across three empirical studies, data suggest that intermediate schools are not beneficial for Grade 5 and 6 students. These results are consistent across content areas, including reading, math, and science.

*POTENTIAL DRAWBACKS AND LIMITATIONS*

**The evidence does not support the efficacy of intermediate school settings.** Data indicate that Grade 5 and 6 students perform better in elementary grade configurations than in intermediate ones. For example, Combs and colleagues discovered that Grade 5 students in elementary schools scored significantly higher in math and reading than their peers in intermediate schools across all five years in which data were collected (Figure 2.14). Researchers attribute much of the achievement differentials to the transition that intermediate students experience prior to the start of Grade 5, again highlighting the detriments of including too many school transfers in grade sequences.<sup>135</sup>

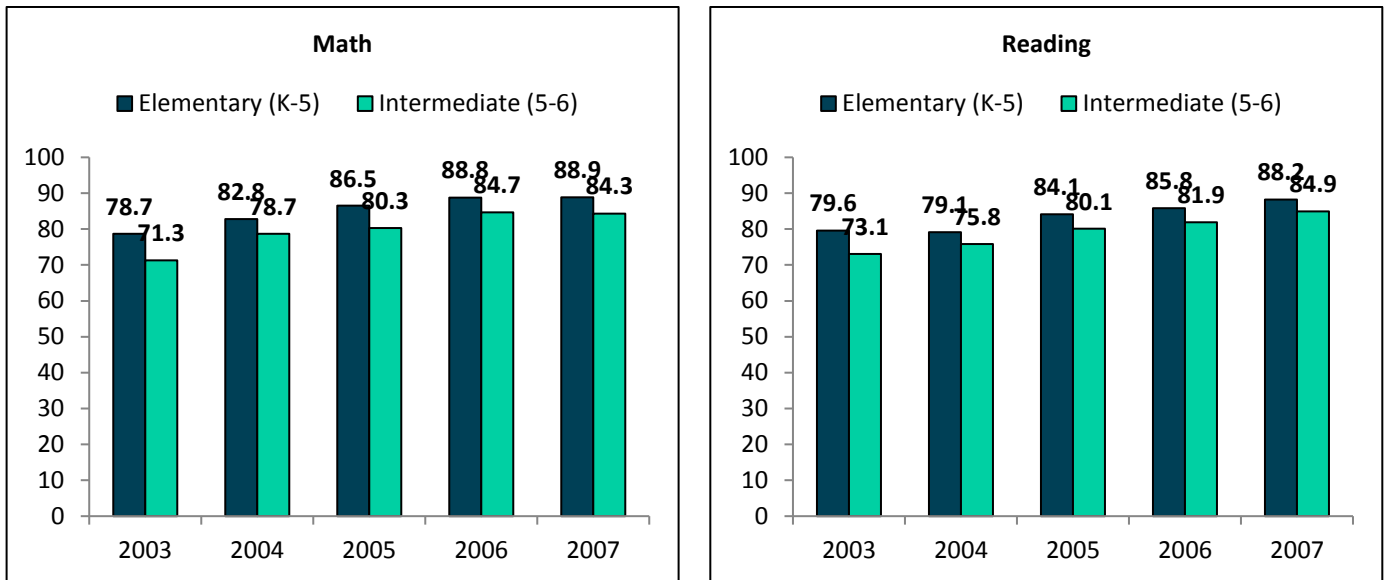
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<sup>134</sup> Combs et al., Op. cit.

<sup>135</sup> Combs et al., Op. cit., pp.32–33.



**Figure 2.14: Grade 5 Students’ Math and Reading Scores by School Type**



Source: Combs et al.; “Academic Achievement for Fifth-Grade Students in Elementary and Intermediate Settings”<sup>136</sup>

Fiaschetti and Slate found similar results isolating the effect of intermediate schools on the performance of economically disadvantaged students. The researchers concluded that “students who were economically disadvantaged *and* who were enrolled in schools with a **larger grade span** outperformed students who were economically disadvantaged and who were enrolled in schools with single/dual grade levels.”<sup>137</sup> These results suggest that intermediate models are not beneficial for a variety of student subgroups, and that students generally perform better in more standard elementary school settings (either K-5 or K-6).

<sup>136</sup> Adapted from: Ibid., pp.29–30.

<sup>137</sup> Fiaschetti and Slate, Op. cit., p.227. Emphasis added.

## SECTION III: MODELS OF SECONDARY GRADE CONFIGURATION

In this section, Hanover Research discusses the effectiveness of four common grade span configurations at the secondary level: K-8 schools, junior high and middle schools (Grades 6 through 8, 7 through 8, or 7 through 9), ninth grade academies, and Grade 7 through 12 high schools.

### KEY SECTION FINDINGS

- **Although K-8 schools have become much more popular in recent years, research regarding ideal grade span configurations for middle grades students is inconclusive.** Several studies have found that K-8 schools have more positive environments and are associated with better attendance, decreased behavioral problems, and improved academic achievement compared to middle and junior high schools. The transition to middle school can be difficult for many and is often associated with negative academic and social outcomes. Many view K-8 schools as beneficial because they reduce the number of school transitions students experience. However, the long-term benefits of K-8 schools have not been established; several studies have found no difference between K-8 schools and middle schools or have found that the differences are too small or unsustainable to be of importance.
- **Because neither K-8 nor middle schools have consistently demonstrated improvements in academic achievement, some experts argue that schools should focus on improving the quality of instruction and the overall school environment.** Middle grades experts assert that schools must design the curriculum and school environment to meet the needs of middle grades students, regardless of whether they are in a K-8 or middle school setting. Use of interdisciplinary teaching teams, an approach commonly recommended for middle schools, has the potential to help students and teachers form positive relationships and improve academic outcomes. Further, comprehensive transition programs can help to mitigate the negative effects of changing schools.
- **Ninth grade academies are often difficult for schools to fully implement, and research on their effects is inconclusive.** Ninth grade academies have distinct administrative structures and programmatic characteristics, which can be difficult for schools to achieve without substantial district support and resources. Academies are usually housed in a dedicated wing or hallway within a school and have their own administrator or interdisciplinary teaching teams. Additional staff typically provide other academic and social supports, such as tutoring, mentoring, counseling, and social services. While some studies have found that students who attended ninth grade academies have higher academic achievement levels and lower non-promotion rates than typical high schools, other studies have found no difference in students who attended academies and those in traditional schools.

- **Alternative secondary configurations, such as 7-12 schools, are not generally supported by the literature.** Proponents of the 7-12 model argue that it is effective because it minimizes school transitions and allows middle grades students to access high school facilities and advanced coursework. However, research and anecdotal accounts of the model’s outcomes have been mixed. Adopters of the 7-12 configuration model have acknowledged that middle school students have different needs than high school students, and typically use school-within-school models to serve 7-8 and 9-12 students separately within the same campus. Hanover did not identify any studies of other high school models, such as 9-10 and 11-12 schools. In general, school transitions are associated with decreases in student achievement. However, it is unclear whether a school transition during high school would have negative effects.

## KINDERGARTEN THROUGH GRADE 8

K-8 schools were popular in the 19<sup>th</sup> century, but began to fall out of favor in the early 20<sup>th</sup> century as a movement began toward creating separate schools for middle grades students.<sup>138</sup> Junior high schools (usually Grades 7 through 8 or Grades 7 through 9) were first established in 1909, and became increasingly popular until the late 1960s.<sup>139</sup> From the 1960s to 1970s, middle schools (typically Grades 6 through 8) started to replace junior high schools.<sup>140</sup> Currently, middle schools greatly outnumber junior high schools in the United States – over 12,000 middle schools were in operation in 2014 compared to roughly 2,700 junior high schools.<sup>141</sup>

While junior high typically imitated the structure of high school, middle schools were meant to provide instruction and activities that were developmentally and academically appropriate for middle grades students’ unique needs.<sup>142</sup> However, poor test scores and high rates of behavioral problems for middle school students have led many educators and researchers to conclude that placing middle grades students in K-8 schools, rather than separate middle

<sup>138</sup> [1] McEwin, C.K. and M.W. Greene. “The Status of Programs and Practices in America’s Middle Schools: Results From Two National Studies.” Association for Middle Level Education, 2011. p. 5. [http://www.amle.org/portals/0/pdf/articles/status\\_programs\\_practices\\_amle.pdf](http://www.amle.org/portals/0/pdf/articles/status_programs_practices_amle.pdf) [2] Byrnes, V. and A. Ruby. “Comparing Achievement between K-8 and Middle Schools: A Large-Scale Empirical Study.” *American Journal of Education*, 114, November 2007. pp. 102–103. [http://web.jhu.edu/CSOS/images/TDMG/ComparingAchievement\\_btwK\\_8.pdf](http://web.jhu.edu/CSOS/images/TDMG/ComparingAchievement_btwK_8.pdf)

<sup>139</sup> McEwin and Greene, Op. cit., p. 5.

<sup>140</sup> [1] Paglin, C. and J. Fager. “Grade Configuration: Who Goes Where?” Northwest Regional Educational Laboratory, July 1997. p. 2. <http://www.cityofportsmouth.com/school/centraloffice/eefc/4g.pdf> [2] McEwin and Greene, Op. cit., p. 5.

<sup>141</sup> [1] “Table 216.80: Public Secondary Schools, by Grade Span, Average School Enrollment, and State or Jurisdiction: 2013-14.” National Center for Education Statistics, 2015. [https://nces.ed.gov/programs/digest/d15/tables/dt15\\_216.80.asp?current=yes](https://nces.ed.gov/programs/digest/d15/tables/dt15_216.80.asp?current=yes) [2] “Table 216.75: Public Elementary Schools, by Grade Span, Average School Enrollment, and State or Jurisdiction: 2013-14.” National Center for Education Statistics, 2015. [https://nces.ed.gov/programs/digest/d15/tables/dt15\\_216.75.asp?current=yes](https://nces.ed.gov/programs/digest/d15/tables/dt15_216.75.asp?current=yes)

<sup>142</sup> [1] Paglin and Fager, Op. cit., p. 2. [2] Wormeli, R. “Misleading in the Middle: A Rebuttal to Cheri Pierson Yecke.” *Educational Leadership*, 63, Summer 2006. <http://www.ascd.org/publications/educational-leadership/summer06/vol63/num09/Misleading-in-the-Middle@-A-Rebuttal-to-Cheri-Pierson-Yecke.aspx>

schools, will lead to better outcomes.<sup>143</sup> Recently, many school districts across the country began transitioning from middle school or junior high schools to more comprehensive K-8 schools.<sup>144</sup> As of 2014, there were over 6,500 K-8 schools in the United States, a large increase from around just 2,500 K-8 schools 20 years earlier.<sup>145</sup>

### OVERVIEW OF RESEARCH

Most of the literature on grade span configurations has focused on comparing K-8 schools to middle schools. However, despite the wealth of literature and recent school district trends favoring K-8 schools, **research regarding ideal grade span configurations for middle grades students is inconclusive.** Studies comparing student outcomes at K-8 schools and middle schools have found conflicting results. Several studies have found improved academic and behavior outcomes for K-8 students compared to middle school students, such as better attendance,<sup>146</sup> decreased suspensions and other disciplinary infractions,<sup>147</sup> and improved academic achievement (e.g., improved math and reading scores).<sup>148</sup> However, many of these studies' findings are weakened by a number of methodological issues, such as study designs that limit ability to determine causality, or lack of statistical control for potential confounding variables such as class size, student demographics, or school/district policies.<sup>149</sup>

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- <sup>143</sup> [1] Jacob and Rockoff, Op. cit. [2] Yecke, C.P. "Mayhem in the Middle: Why We Should Shift to K-8." *Educational Leadership*, 63:7, April 2006. <http://www.ascd.org/publications/educational-leadership/apr06/vol63/num07/Mayhem-in-the-Middle@-Why-We-Should-Shift-to-K%E2%80%938.aspx> [3] Pardini, P. "American Association of School Administrators." School Superintendents Association, 2002. <http://www.aasa.org/SchoolAdministratorArticle.aspx?id=10396> [4] Sparks, S.D. "Study Links Academic Setbacks to Middle School Transition." *Education Week*, November 28, 2011. <http://www.edweek.org/ew/articles/2011/11/28/13structure.h31.html>
- <sup>144</sup> [1] Pardini, "American Association of School Administrators," Op. cit. [2] Yecke, Op. cit. [3] Sparks, S.D. "Learning Declines Linked to Moving to Middle School." *Education Week*, 31:13, December 7, 2011. <http://search.ebscohost.com/login.aspx?direct=true&db=eue&AN=527648112&site=ehost-live>
- <sup>145</sup> [1] "Table 216.80: Public secondary schools, by grade span, average school enrollment, and state or jurisdiction: 2013-14," Op. cit., p. 26. [2] "Table 216.10. Public Elementary and Secondary Schools, by Level of School: Selected Years, 1967-68 through 2011-12." National Center for Education Statistics, 2013. p. 216. [http://nces.ed.gov/programs/digest/d13/tables/dt13\\_216.10.asp](http://nces.ed.gov/programs/digest/d13/tables/dt13_216.10.asp)
- <sup>146</sup> Abella, R. "The Effects of Small K-8 Centers Compared to Large 6-8 Schools on Student Performance." *Middle School Journal*, 37:1, September 2005. Accessed via Web of Science
- <sup>147</sup> [1] Ibid. [2] Cook, P.J. et al. "The Negative Impacts of Starting Middle School in Sixth Grade." *Journal of Policy Analysis and Management*, 27:1, December 1, 2008. <http://dx.doi.org/10.1002/pam.20309> [3] Arcia, E. "A Comparison of Elementary/K-8 and Middle Schools' Suspension Rates." *Urban Education*, 42:5, September 2007. Accessed via Web of Science
- <sup>148</sup> [1] Cook et al., Op. cit. [2] Alspaugh, J.W. "Achievement Loss Associated with the Transition to Middle School and High School." *Journal of Educational Research*, 92:1, October 1998. Accessed via EBSCOhost [3] Schwerdt, G. and M.R. West. "The Impact of Alternative Grade Configurations on Student Outcomes through Middle and High School." July 15, 2011. Accessed via Web of Science [4] Rockoff, J. and B. Lockwood. "Stuck in the Middle: Impacts of Grade Configuration in Public Schools." *Journal of Public Economics*, 94:11/12, December 2010. Accessed via EBSCOhost [5] Clark, D.M. et al. "Math and Reading Differences Between 6-8 and K-8 Grade Span Configurations: A Multiyear, Statewide Analysis." *Current Issues in Education*, 16:2, August 15, 2013. <http://researchnetwork.pearson.com/wp-content/uploads/Clark-D-2013-Current-Issues-in-Education-2.pdf> [6] Byrnes and Ruby, Op. cit. [7] Schwartz, A.E. et al. "The Path Not Taken: How Does School Organization Affect Eighth-Grade Achievement?" *Educational Evaluation and Policy Analysis*, 33:3, September 2011. Accessed via Web of Science
- <sup>149</sup> [1] "What the Research Says (or Doesn't Say) About K-8 Versus Middle School Grade Configurations." *Education Northwest*, August 18, 2011. <http://educationnorthwest.org/news/what-research-says-or-doesnt-say-about-k-8-versus-middle-school-grade-configurations> [2] "WWC Quick Review of the Article 'The Negative Impacts of

Other studies, meanwhile, have found no difference in outcomes between K-8 and middle school students. After controlling for variables such as school size and type, class size, transition rates, and school policies, large studies in Philadelphia<sup>150</sup> and California,<sup>151</sup> have found no difference in academic achievement outcomes for students who have attended K-8 and middle schools, while a large study in Texas found no difference in outcomes for African-American students, but found that Hispanic students actually performed better in middle schools than in K-8 schools.<sup>152</sup> In addition, three recent national studies found that **classroom quality and school attachment, rather than grade span configuration, are more significant predictors of academic achievement outcomes** for students in Grades 5 and 6.<sup>153</sup> Figure 3.1, on the following pages, displays key studies that assess the effectiveness of the K-8 model on students' academic and behavioral outcomes.

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Starting Middle School in Sixth Grade.” Institute of Education Sciences What Works Clearinghouse, June 2008. [http://ies.ed.gov/ncee/wwc/pdf/quick\\_reviews/sixthgrademiddle\\_060308.pdf](http://ies.ed.gov/ncee/wwc/pdf/quick_reviews/sixthgrademiddle_060308.pdf) [3] Jacob and Rockoff, Op. cit.

<sup>150</sup> [1] Weiss, C.C. and L. Kipnes. “Reexamining Middle School Effects: A Comparison of Middle Grades Students in Middle Schools and K-8 Schools.” *American Journal of Education*, 112:2, February 2006. Accessed via EBSCOhost [2] Byrnes and Ruby, Op. cit. [3] Weiss, C.C. and E.C. Baker-Smith. “Eighth-Grade School Form and Resilience in the Transition to High School: A Comparison of Middle Schools and K-8 Schools.” *Journal of Research on Adolescence*, 20:4, 2010. Accessed via EBSCOhost

<sup>151</sup> Williams, T. et al. “Gaining Ground in the Middle Grades: Why Some Schools Do Better - A Large-Scale Study of Middle Grades Practices and Student Outcomes.” EdSource, February 2010. <http://files.eric.ed.gov/fulltext/ED508674.pdf>

<sup>152</sup> Wilson, R. and J.R. Slate. “Grade Span Configuration and Differences in African American and Hispanic Student Mathematics Achievement.” *Journal of Education Research*, 8:4, 2014. Accessed via EBSCOhost

<sup>153</sup> [1] Holas, I. and A. Huston. “Are Middle Schools Harmful? The Role of Transition Timing, Classroom Quality and School Characteristics.” *Journal of Youth & Adolescence*, 41:3, March 2012. Accessed via EBSCOhost [2] Carolan, B.V., C.C. Weiss, and J. Matthews. “Which Middle School Model Works Best? Evidence From the Early Childhood Longitudinal Study.” *Youth & Society*, 47:5, 2015. Accessed via EBSCOhost [3] Carolan, B.V. and N.Z. Chesky. “The Relationship among Grade Configuration, School Attachment, and Achievement.” *Middle School Journal*, March 2012. <https://sites.newpaltz.edu/ncate/wp-content/uploads/sites/21/2014/06/Example-Chesky.pdf>

**Figure 3.1: Evidence of the Effects of K-8 Schools on Student Performance**

AUTHOR(S)	YEAR	STUDY SETTING	STUDY DESCRIPTION	OUTCOMES
Wilson and Slate <sup>154</sup>	2014	<ul style="list-style-type: none"> <li>▪ Statewide analysis of Hispanic and African-American students enrolled in 1,602 Texas public schools from 2010-2011 (number of students not specified)</li> </ul>	<ul style="list-style-type: none"> <li>▪ The study compared students enrolled in 6-8 middle schools to students enrolled in K-8 schools.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Hispanic students in middle schools had significantly higher mathematics scores than Hispanic students in K-8 schools.</li> <li>▪ There was no statistically significant difference in mathematics scores for African-American students enrolled in middle schools and K-8 schools.</li> </ul>
Carolan, Weiss, and Matthews <sup>155</sup>	2013	<ul style="list-style-type: none"> <li>▪ Grade 5 and Grade 8 students included in the Early Childhood Longitudinal Study, Kindergarten Class 1998-1999</li> <li>▪ 2,729 children in 977 schools</li> </ul>	<ul style="list-style-type: none"> <li>▪ The study examined predictors of Grade 8 math achievement (math test scores) for students in five types of schools: K-8 schools; 6-8 middle schools; 7-8 junior highs; 7-12 junior/ senior highs; and K-12 schools.</li> <li>▪ The study also examined measures of math classroom quality, such as whether the class was above algebra level and whether the teacher rated the class as behaving well.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Grade span configurations did not predict Grade 8 math achievement.</li> <li>▪ However, classroom quality did predict math achievement, leading the authors to argue that grade span configurations are less important than instruction and classroom quality in terms of improving academic achievement.</li> </ul>

<sup>154</sup> Wilson and Slate, Op. cit.

<sup>155</sup> Carolan, Weiss, and Matthews, Op. cit.

AUTHOR(S)	YEAR	STUDY SETTING	STUDY DESCRIPTION	OUTCOMES
Clark et al. <sup>156</sup>	2013	<ul style="list-style-type: none"> <li>▪ Grade 6-8 students enrolled in 314 middle schools and 314 K-8 schools in Texas from 2006 to 2011 (encompassing around 1 million students in each grade level)</li> </ul>	<ul style="list-style-type: none"> <li>▪ The study examined reading and math achievement (as measured by state test scores) among students enrolled in middle and K-8 schools.</li> <li>▪ Middle schools were defined as Grades 6-8.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Students in K-8 schools had higher average pass rates in both reading and math than students in middle school.</li> <li>▪ The effect sizes for math achievement were smaller than reading.</li> </ul>
Carolan and Chesky <sup>157</sup>	2012	<ul style="list-style-type: none"> <li>▪ Approximately 6,290 Grade 8 students included in the Early Childhood Longitudinal Study, Kindergarten Class 1998-1999</li> </ul>	<ul style="list-style-type: none"> <li>▪ This study examined the relationship between school attachment, grade span configuration, and academic achievement among K-8 and middle school (6-8 or 7-8) students.</li> <li>▪ School attachment was measured by how much students enjoyed their school, felt they fit in at their school, and felt close to classmates.</li> </ul>	<ul style="list-style-type: none"> <li>▪ There was no significant relationship between attendance at a K-8 school and reading or math achievement.</li> <li>▪ School attachment was a significant predictor of academic achievement. The authors argue that increasing students' attachment with school could be a more cost effective way to increase achievement than reconfiguring grades.</li> </ul>
Schwartz et al. <sup>158</sup>	2011	<ul style="list-style-type: none"> <li>▪ Study of 81,372 students in New York City from 1997 to 2002</li> </ul>	<ul style="list-style-type: none"> <li>▪ The study compared academic achievement outcomes for Grade 8 students in various grade span paths: K-4 to 5-8; K-5 to 6-8; K-6 to 7-8; and K-8.</li> </ul>	<ul style="list-style-type: none"> <li>▪ K-8 and 5-8 students outperformed those in middle and junior high schools.</li> <li>▪ The authors found that peer stability, or the presence of more stable peer cohort groups in K-8 and 5-8 schools, contributed to higher academic performance for these students.</li> </ul>

<sup>156</sup> Clark et al., "Math and Reading Differences Between 6-8 and K-8 Grade Span Configurations: A Multiyear, Statewide Analysis," Op. cit.

<sup>157</sup> Carolan and Chesky, Op. cit.

<sup>158</sup> Schwartz et al., Op. cit.

AUTHOR(S)	YEAR	STUDY SETTING	STUDY DESCRIPTION	OUTCOMES
Schwerdt and West <sup>159</sup>	2011	<ul style="list-style-type: none"> <li>▪ Study of 609,493 students in Florida who were enrolled in public schools from 2000 to 2009</li> </ul>	<ul style="list-style-type: none"> <li>▪ The study compared outcomes for students who attended 6-8 or 7-8 middle schools with those enrolled in K-8 schools.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Students who transitioned to middle school in Grades 6 or 7 suffered sharp drops in academic achievement, which persisted through Grade 10.</li> <li>▪ Transitions to middle school were also associated with increased absences and higher dropout rates in Grade 10.</li> <li>▪ Transitions to high school were associated with a small, one-time drop in achievement.</li> </ul>
Rockoff and Lockwood <sup>160</sup>	2010	<ul style="list-style-type: none"> <li>▪ Study of 193,071 students enrolled in Grades 3 through 8 in New York City from 1998 through 2008</li> </ul>	<ul style="list-style-type: none"> <li>▪ The study compared outcomes for students in K-8 schools with those in 6-8 or 7-8 middle schools.</li> </ul>	<ul style="list-style-type: none"> <li>▪ The study found that moving students to middle school in Grades 6 or 7 resulted in significant drops in academic achievement in both math and English.</li> <li>▪ These effects persisted through Grade 8, and the drop in academic achievement was greater for students who changed schools in Grade 6 than in Grade 7.</li> </ul>

<sup>159</sup> Schwerdt and West, Op. cit.

<sup>160</sup> Rockoff and Lockwood, "Stuck in the Middle: Impacts of Grade Configuration in Public Schools.," Op. cit.



AUTHOR(S)	YEAR	STUDY SETTING	STUDY DESCRIPTION	OUTCOMES
Weiss and Baker-Smith <sup>161</sup>	2010	<ul style="list-style-type: none"> <li>▪ Analysis of 1,026 Grade 9 students included in the Philadelphia Education Longitudinal Study</li> </ul>	<ul style="list-style-type: none"> <li>▪ The study compared academic achievement and social outcomes for students who had attended middle schools and K-8 schools.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Grade 9 students who had attended middle schools had worse grades than those who attended K-8 schools. However, this is largely explained by differences in magnet school attendance at the high school level.</li> </ul>
Williams et al. <sup>162</sup>	2010	<ul style="list-style-type: none"> <li>▪ Study of 303 middle grade schools in California from 2009-2010, which included 204,000 students enrolled in Grades 6-8</li> </ul>	<ul style="list-style-type: none"> <li>▪ The study examined scores on state reading and math tests by type of school attended (6-8, K-8, or 7-8) and also examined the relationship between school practices and student outcomes.</li> </ul>	<ul style="list-style-type: none"> <li>▪ There was no consistent or strong association between test scores and grade configurations</li> <li>▪ Differences in instructional and administrative practices, including an “intense schoolwide focus on improving academic outcomes,” distinguished high-performing schools from low-performing schools.</li> </ul>
Arcia <sup>163</sup>	2007	<ul style="list-style-type: none"> <li>▪ Study of 26,137 students enrolled in a large urban school district from 2001 to 2003</li> </ul>	<ul style="list-style-type: none"> <li>▪ The study compared suspension rates between Grade 7 students in K-8 schools and those who entered middle school either in Grade 6 or 7.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Students in middle school were suspended at substantially higher rates than students in K-8 schools.</li> </ul>

<sup>161</sup> Weiss and Baker-Smith, Op. cit.

<sup>162</sup> Williams et al., Op. cit.

<sup>163</sup> Arcia, Op. cit.

AUTHOR(S)	YEAR	STUDY SETTING	STUDY DESCRIPTION	OUTCOMES
Byrnes and Ruby <sup>164</sup>	2007	<ul style="list-style-type: none"> <li>▪ Study of 40,883 students across five cohorts enrolled in the Philadelphia City School District from 1999 to 2004</li> </ul>	<ul style="list-style-type: none"> <li>▪ This study compared scores on state tests for Grade 8 students enrolled in longstanding K-8 schools, newly created K-8 schools, and traditional middle schools (6-8 or 7-8)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Academic achievement was higher for students in older K-8 schools than in middle schools. However, after controlling for population demographics, the advantage of K-8 schools decreased.</li> <li>▪ Newer K-8 schools did not experience the same increase in achievement, largely due to the fact that they served more disadvantaged students who already had lower levels of achievement.</li> </ul>
Weiss and Kipnes <sup>165</sup>	2006	<ul style="list-style-type: none"> <li>▪ Data from 14,026 Grade 8 students included in the Philadelphia Education Longitudinal Study from 1995-1996</li> </ul>	<ul style="list-style-type: none"> <li>▪ The study compared academic achievement, feelings about school, and self-esteem for students who had attended middle schools and K-8 schools.</li> </ul>	<ul style="list-style-type: none"> <li>▪ There were few differences in student outcomes by school type. Only self-esteem and perception of threat in the school environment differed by school type.</li> <li>▪ Students in middle schools had larger perceptions of threat and lower levels of self-esteem than K-8 students.</li> </ul>

<sup>164</sup> Byrnes and Ruby, Op. cit.

<sup>165</sup> Weiss and Kipnes, Op. cit.

AUTHOR(S)	YEAR	STUDY SETTING	STUDY DESCRIPTION	OUTCOMES
Abella <sup>166</sup>	2005	<ul style="list-style-type: none"> <li>▪ Study of 4,114 Grade 9 students enrolled in Miami-Dade County Public Schools from 2002-2003</li> </ul>	<ul style="list-style-type: none"> <li>▪ The study compared students' academic performance in five small K-8 centers to large 6-8 middle schools.</li> </ul>	<ul style="list-style-type: none"> <li>▪ K-8 students outperformed middle school students in reading and math during middle school. By Grade 9, however, the K-8 and middle school students had nearly identical reading and math scores.</li> <li>▪ K-8 students had better attendance than middle school students by the time they reached high school (9.9 average days missed compared to 9 days).</li> <li>▪ The middle school group had a higher suspension rate in Grade 9 (7.7 incidents per 100 students) compared to K-8 students (6.1 incidents per 100).</li> </ul>

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<sup>166</sup> Abella, Op. cit.

## BENEFITS

Proponents of the K-8 model argue that **K-8 schools provide more nurturing environments and foster better relationships between students and teachers, while also delaying transition to a new school** until students are more mature.<sup>167</sup> Middle and junior high schools often have larger overall student populations or larger class sizes than K-8 schools, possibly making it more difficult for students and teachers to get to know one another and potentially causing students to feel less engaged in school.<sup>168</sup> K-8 schools, on the other hand, may offer more opportunities for students to build lasting relationships with other teachers and peers, and provide students in older grades with additional opportunities to act as role models or serve in leadership roles.<sup>169</sup> A 2014 national study found that K-8 schools had more positive social environments (such as student conduct problems and teacher quality) than middle and junior high schools.<sup>170</sup>

Further, many middle and junior high schools encompass large catchment areas of students who may be very different from students' elementary school peers. This shift to a very different social environment occurs during a developmental period when students are vulnerable to issues such as low self-esteem, decreased engagement in school, and limited ability to judge risks and consequences.<sup>171</sup> Authors of a 2011 Brookings Institute report arguing for middle school reform summarized the problem as follows:

In other words, students undergo a difficult transition at precisely the time when they may need increased attention to social and academic needs. This in turn puts teachers and administrators in a difficult position, dealing with large numbers of students with whose backgrounds and learning styles they are unfamiliar.<sup>172</sup>

Delaying the transition to high school, as well as reducing the overall number of transitions that students experience, are key benefits of the K-8 model.<sup>173</sup> Indeed, a large Florida study found that, although the transition to high school was also associated with a drop in academic achievement, this drop was not as large or sustained as the achievement drops associated with middle school transitions.<sup>174</sup>

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<sup>167</sup> [1] Byrnes and Ruby, Op. cit. [2] Yecke, Op. cit.

<sup>168</sup> [1] Byrnes and Ruby, Op. cit., p. 106. [2] Rockoff, J.E. and B.B. Lockwood. "Stuck in the Middle - How and Why Middle Schools Harm Student Achievement." *Education Next*, Fall 2010. <http://educationnext.org/stuck-in-the-middle/>

<sup>169</sup> Herman, B.E. "The Revival of K-8 Schools." *Phi Delta Kappa Fastbacks*, :519, 2004. Accessed via EBSCOhost

<sup>170</sup> Kim, H.Y. et al. "Navigating Middle Grades: Role of School Context in Students' Social Adaptation and Experiences." Society for Research on Educational Effectiveness, 2014. <http://files.eric.ed.gov/fulltext/ED562784.pdf>

<sup>171</sup> Jacob and Rockoff, Op. cit., p. 13.

<sup>172</sup> Ibid.

<sup>173</sup> [1] "The K-8 Solution: The Retreat from Middle Schools." Center for Education Reform, September 2008. [https://www.edreform.com/wp-content/uploads/2013/03/CER\\_2008\\_K-8\\_Policy\\_Alert.pdf](https://www.edreform.com/wp-content/uploads/2013/03/CER_2008_K-8_Policy_Alert.pdf) [2] West, M.R. and G. Schwerdt. "The Middle School Plunge." <http://educationnext.org/the-middle-school-plunge/> [3] Sparks, "Study Links Academic Setbacks to Middle School Transition," Op. cit. [4] Tamer, M. "Do Middle Schools Make Sense?" *Harvard Ed. Magazine*, September 5, 2012. <https://www.gse.harvard.edu/news/ed/12/09/do-middle-schools-make-sense>

<sup>174</sup> Schwerdt and West, Op. cit., p. 324.

Additional benefits of the K-8 model are primarily related to **school logistics and administration**.<sup>175</sup> It can sometimes be easier to hire and retain staff at K-8 schools than at middle schools. Transportation to and from school may be more convenient for many families, with K-8 students able to travel to school together at the same time. Finally, the typical smaller size of K-8 schools, for some districts, can make them easier and more cost-effective to manage than larger middle schools.

### *POTENTIAL DRAWBACKS AND LIMITATIONS*

Overall, the **potential benefits of the K-8 model have not been adequately demonstrated**. First, the positive outcomes associated with K-8 configurations, although statistically significant in several studies, may not be significant in terms of practical implications. Positive outcomes may not last in the long-term; a 2005 study in Miami-Dade County found that improvements in academic achievement for K-8 students did not carry over into high school.<sup>176</sup> Further, the differences in academic achievement between K-8 and middle school students may be too small to warrant a reconfiguration of existing grades. A 2001 study in Philadelphia found that K-8 students' grades were only one tenth of a letter grade higher than middle school students.<sup>177</sup> Similarly, a 2013 study in Texas found only small differences in math scores for K-8 students compared to middle school students, and these differences were inconsistent from year to year.<sup>178</sup>

In addition, research studies have not explored the impact of the high school transition on K-8 students, and it is unclear whether students in K-8 schools have a more difficult time adjusting to high school than middle school than junior high students. K-8 students may potentially experience higher achievement drops than middle school students upon entering high school because they would be transitioning from a more sheltered environment and would not have previously dealt with a school change.<sup>179</sup> K-8 schools also tend to be less socioeconomically and racially diverse than middle schools, and stakeholders in K-8 districts have expressed concerns that K-8 schools could increase segregation.<sup>180</sup>

An additional criticism of the recent shift toward the K-8 model focuses on school quality. **Because several studies have shown that classroom quality and school environment are stronger predictors of achievement than grade configuration, some argue that K-8 schools are not inherently more effective than middle schools.**<sup>181</sup> The different school environments often associated with K-8 schools, rather than the K-8 configuration itself, may be responsible

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<sup>175</sup> Herman, Op. cit.

<sup>176</sup> Abella, Op. cit.

<sup>177</sup> Offenber, R.M. "The Efficacy of Philadelphia's K-to-8 Schools Compared to Middle Grades Schools." *Middle School Journal*, 32:4, March 2001. Accessed via EBSCOhost

<sup>178</sup> Clark et al., "Math and Reading Differences Between 6-8 and K-8 Grade Span Configurations: A Multiyear, Statewide Analysis," Op. cit.

<sup>179</sup> Rockoff and Lockwood, "Stuck in the Middle - How and Why Middle Schools Harm Student Achievement," Op. cit.

<sup>180</sup> [1] Gewertz, C. "City Districts Embracing K-8 Schools." *Education Week*, May 19, 2004.

<http://www.edweek.org/ew/articles/2004/05/19/37k-8.h23.html> [2] Jacob and Rockoff, Op. cit., p. 15.

<sup>181</sup> [1] Holas and Huston, Op. cit. [2] Carolan, Weiss, and Matthews, Op. cit. [3] Carolan and Chesky, Op. cit. [4] Williams et al., Op. cit.

for the improved academic outcomes seen in some K-8 schools.<sup>182</sup> If districts seek to improve the instructional practices and social environments of middle schools, it is possible these schools could experience achievement gains similar to K-8 schools. Many existing middle and junior schools, according to some experts, have not adequately implemented the “middle school concept” and have not effectively supported students’ transitions to their new environments.<sup>183</sup> The middle school concept—which emphasizes small learning communities, collaboration among teachers, and quality instruction—has been difficult for many districts to fully realize, especially in large schools.<sup>184</sup>

Therefore, some experts recommend that **districts prioritize efforts to improve school quality rather than relying on grade reconfiguration itself as a solution to improving student outcomes.** Researchers Byrnes and Ruby state that a “K-8 conversion policy alone does not represent a ‘silver bullet’ reform for closing the achievement gap and improving student achievement.”<sup>185</sup> Districts need to examine whether schools are truly implementing middle school “best practices” such as small learning communities, cooperative learning, and collaborative professional development for teachers. Recommendations for improving middle school quality are discussed below, as well as in the following sub-section discussing junior high and middle school configurations.

### IMPLEMENTATION CONSIDERATIONS

Because the shift toward K-8 schools is relatively recent, **few studies have focused on the specific characteristics that make a K-8 school successful.** Districts that have recently implemented the K-8 model have generally focused on **applying the middle school concept to the K-8 setting.**<sup>186</sup> Districts have developed interdisciplinary teams of teachers who teach shared groups of students and coordinate instruction with one another. These teams typically have common planning periods that allow them to meet frequently to discuss successful instructional strategies and strategize ways to address difficulties that arise in the classroom.<sup>187</sup> In terms of classroom instruction, these teams utilize more project-based learning and problem solving than used for elementary students.<sup>188</sup>

<sup>182</sup> Clark, D.M. et al. “A Conceptual Analysis of Grade Span Configurations for 6-8 and K-8 Public Schools.” *Online Journal of New Horizons in Education*, 4:1, January 2014. p. 16. Accessed via EBSCOhost

<sup>183</sup> [1] Erb, T.O. “Middle School Models Are Working in Many Grade Configurations to Boost Student Performance.” *American Secondary Education*, 34:3, 2006. Accessed via EBSCOhost [2] Mertens, S. and V. Anfara. “Grade Configurations in Middle Grade Schools.” National Association of Secondary School Principals, February 2008. <http://www.nassp.org/Content.aspx?topic=57004> [3] Beane, J. and R. Lipka. “Guess Again: Will Changing the Grades Save Middle Level Education?” *Educational Leadership*, 63:7, April 2006. Accessed via EBSCOhost [4] “Problems and Promise of the American Middle School.” RAND Corporation, 2004. p. 114. [http://www.rand.org/content/dam/rand/pubs/research\\_briefs/RB8025/RB8025.pdf](http://www.rand.org/content/dam/rand/pubs/research_briefs/RB8025/RB8025.pdf) [5] Clark et al., “A Conceptual Analysis of Grade Span Configurations for 6-8 and K-8 Public Schools,” Op. cit., pp. 16–18.

<sup>184</sup> Erb, Op. cit.

<sup>185</sup> Byrnes and Ruby, Op. cit., pp. 131–132.

<sup>186</sup> Pardini, P. “Revival of the K-8 School.” School Superintendents Association. <http://www.aasa.org/SchoolAdministratorArticle.aspx?id=10396>

<sup>187</sup> [1] Blair, L. “Back to the Future: The Shift to K-8 Schools.” Southwest Educational Development Laboratory, April 2008. [http://www.sedl.org/pubs/sedl-letter/v20n01/k-8\\_schools.html](http://www.sedl.org/pubs/sedl-letter/v20n01/k-8_schools.html) [2] Juvonen et al., Op. cit., pp. 20–27.

<sup>188</sup> Pardini, “Revival of the K-8 School,” Op. cit.

Meeting middle grades students' needs in K-8 schools may require significant changes to existing facilities and programs. Lack of access to extracurricular activities and advanced classes can be a concern for parents of middle grades students attending K-8 schools. School may need to add science labs, algebra and foreign language classes, career exploration programs, and middle school extracurricular programs (such as band, drama, or newspaper) to their existing elementary schools.<sup>189</sup> Facilities may also have to be modified and expanded, such as expanding existing schools to add additional classrooms, modifying bathrooms and athletic facilities, and purchasing additional desks or chairs that can accommodate older students.<sup>190</sup> Teachers may require additional training for working with the school's new student population; elementary teachers, for example, may need additional training in dealing with behavioral problems that may arise for older students.<sup>191</sup>

## JUNIOR HIGH AND MIDDLE SCHOOL (GRADES 6-8, 7-8, OR 7-9)

As junior high schools have become less popular, middle schools have become the dominant form for educating young adolescents. In the 2013 to 2014 school year, there were over 12,300 middle schools (Grades 4/5/6-6/7/8) throughout the country, compared to approximately 2,700 junior high schools (Grade 7-8 or 7-9).<sup>192</sup> The number of junior high schools has been decreasing steadily since the 1970s.<sup>193</sup>

### OVERVIEW OF RESEARCH

**Relatively few studies have compared junior high and middle school grade configurations to each other or to other secondary configurations.** Nonetheless, a small number of recent analyses have compared student outcomes in middle schools and junior highs, as shown in Figure 3.2 on the following page. One study (discussed in Section II) found that Grade 6 students in elementary schools (i.e., those who would later enter a 7-8 junior high school) had higher test scores and were less likely to have disciplinary infractions than their peers in middle schools, leading the authors to conclude that K-8 schools or the K-6/7-8 feeder pattern are superior to the middle school model.<sup>194</sup> Other studies, however, have found grade span itself is not associated with negative academic or behavioral outcomes.<sup>195</sup> **Rather, classroom quality or the social environment may be better predictors of student outcomes.**

<sup>189</sup> [1] Ibid. [2] "K-8 Schools May Help School Districts Improve Student Performance." Office of Program Policy Analysis and Government Accountability, Florida Legislature, January 2005. p. 5.  
<http://www.oppaga.state.fl.us/reports/pdf/0502rpt.pdf>

<sup>190</sup> [1] Pardini, "Revival of the K-8 School," Op. cit. [2] Gewertz, Op. cit. [3] "K-8 Schools May Help School Districts Improve Student Performance," Op. cit., p. 6.

<sup>191</sup> "K-8 Schools May Help School Districts Improve Student Performance," Op. cit., p. 6.

<sup>192</sup> "Table 216.80: Public secondary schools, by grade span, average school enrollment, and state or jurisdiction: 2013-14," Op. cit.

<sup>193</sup> "Table 216.10. Public elementary and secondary schools, by level of school: Selected years, 1967-68 through 2011-12," Op. cit., p. 10.

<sup>194</sup> Cook et al., Op. cit.

<sup>195</sup> [1] Dove, M.J. and L.C. Pearson. "Relationship Between Grade Span Configuration and Academic Achievement." <http://files.eric.ed.gov/fulltext/EJ880581.pdf> [2] Holas and Huston, Op. cit. [3] Kim et al., Op. cit. [4] Weiss, C.C. and P.S. Bearman. "Fresh Starts: Reinvestigating the Effects of the Transition on High School on Student Outcomes." *American Journal of Education*, May 2007.  
<http://steinhardt.nyu.edu/scmsAdmin/uploads/002/636/Weiss%20and%20Bearman%202007.pdf>

**Figure 3.2: Evidence Comparing the Middle School and Junior High School Models**

AUTHOR(S)	YEAR	STUDY SETTING	STUDY DESCRIPTION	OUTCOMES
Kim et al. <sup>196</sup>	2014	<ul style="list-style-type: none"> <li>▪ Analysis of 5,754 students enrolled in Grade 8 from 2006-2007 who participated in the Early Childhood Longitudinal Study, Kindergarten Class 1998-1999</li> </ul>	<ul style="list-style-type: none"> <li>▪ The study compared school characteristics and social and behavioral outcomes for students enrolled in 6-8 middle schools, and 7-9 junior high schools, and K-8 schools.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Grade span itself was not associated with social and behavioral outcomes. Negative school social context (defined as administrator reports of school chaos, conduct problems, staff professional climate, teacher agency, and teacher burden) was associated with lower levels of school attachment, peer support, and peer academic values.</li> <li>▪ There was no difference in social context between middle and junior high schools. However, K-8 schools had a more positive social context compared to middle and high schools after controlling for demographic differences.</li> </ul>
Holas and Huston <sup>197</sup>	2012	<ul style="list-style-type: none"> <li>▪ Study of 855 Grade 5 and 6 students in the national Study of Early Child Care and Youth Development</li> </ul>	<ul style="list-style-type: none"> <li>▪ The study compared academic achievement and school engagement for students enrolled in “early-transition” middle schools (Grades 5-6), “standard-transition” middle schools (Grades 6-8), and “late-transition” schools (Grades 7-8 or 7-9).</li> </ul>	<ul style="list-style-type: none"> <li>▪ No difference was found between the early group and other groups.</li> <li>▪ Grade 6 students in the standard group were less engaged in school than the late-transition group.</li> <li>▪ Classroom quality was a significant predictor of academic achievement; the standard middle schools had lower classroom quality than the late-transition schools.</li> </ul>
Weiss and Bearman <sup>198</sup>	2007	<ul style="list-style-type: none"> <li>▪ Analysis of outcomes for 1,680 Grade 8 students interviewed for the National Longitudinal Study of Adolescent Health in 1996</li> </ul>	<ul style="list-style-type: none"> <li>▪ The study compared behavioral and academic outcomes for students who changed schools between Grades 8 and 9 (i.e., attended K-8, 5-8, 6-8, and 7-8 schools) and those who did not change schools (e.g., 7-9).</li> </ul>	<ul style="list-style-type: none"> <li>▪ There was no difference in academic and behavioral outcomes in Grade 9 for students who changed schools between Grades 8 and 9 and those who did not.</li> <li>▪ Changes in outcomes occurred between Grades 8 and 9; however, these changes were similar for students who changed schools and students who stayed in the same school.</li> </ul>

**BENEFITS**

Much of the debate regarding the potential advantages and disadvantages of middle school is related to the question of whether middle and junior high schools can meet the unique

<sup>196</sup> Kim et al., Op. cit.

<sup>197</sup> Holas and Huston, Op. cit.

<sup>198</sup> Weiss and Bearman, Op. cit.



needs of middle grade students. **The ability of middle and junior high schools to implement practices associated with the middle school concept is generally thought to lead to positive outcomes**, as discussed previously. Interdisciplinary team teaching, a frequently mentioned component of the middle school concept, has generally been found to be associated with higher levels of academic achievement. Some studies have found that interdisciplinary team teaching is correlated with higher scores on state reading and math tests<sup>199</sup> and higher levels of connection with one’s peers, teachers, and school.<sup>200</sup>

### *POTENTIAL DRAWBACKS AND LIMITATIONS*

**School transitions during young adolescence** are of concern to many educators, especially due to the number of studies that have found associations between middle school transitions and decreased academic achievement. Some studies suggest that the presence of a transition in Grade 6 (i.e., a transition to middle school) may be more detrimental than a transition in Grade 7,<sup>201</sup> while other studies suggest that a transition at either age may lead to achievement drops.<sup>202</sup>

However, it is unclear whether eliminating middle/junior high school transitions is indeed the best solution for addressing these achievement drops.<sup>203</sup> As mentioned in the previous subsection, some educators and researchers argue that focusing on providing quality academic and social supports should come before efforts to reconfigure grades. Researchers Beane and Lipka state, for example, that “no matter which grade configuration school districts choose, the most important decision is what kind of education they will offer young adolescents.”<sup>204</sup>

### *IMPLEMENTATION CONSIDERATIONS*

The Association for Middle Level Education (AMLE—formerly the National Middle School Association) has identified four essential attributes and characteristics of effective middle schools. The four attributes—developmentally responsive, challenging, empowering, and equitable—are described in Figure 3.3.

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<sup>199</sup> Juvonen et al., Op. cit., pp. 20–27.

<sup>200</sup> Wallace, J.J. “Effects of Interdisciplinary Teaching Team Configuration upon the Social Bonding of Middle School Students.” *Research in Middle Level Education*, 30:5, 2007.  
[https://www.amle.org/portals/0/pdf/rmle/rmle\\_vol30\\_no5.pdf](https://www.amle.org/portals/0/pdf/rmle/rmle_vol30_no5.pdf)

<sup>201</sup>[1] Cook et al., Op. cit. [2] Rockoff and Lockwood, “Stuck in the Middle: Impacts of Grade Configuration in Public Schools,” Op. cit.

<sup>202</sup> [1] Seidman, E. and L. Allen. “The Impact of School Transitions in Early Adolescence on the Self-System and Perceived Social Context of Poor Urban Youth.” *Child Development*, 65:2, April 1994. Accessed via EBSCOhost [2] Schwartz et al., Op. cit.

<sup>203</sup> Clark et al., “A Conceptual Analysis of Grade Span Configurations for 6-8 and K-8 Public Schools,” Op. cit., pp. 16–18.

<sup>204</sup> Beane and Lipka, Op. cit.

**Figure 3.3: AMLE Essential Attributes of Middle-Level Education**

Developmentally Responsive	Challenging	Empowering	Equitable
<ul style="list-style-type: none"><li>•Using the distinctive nature of young adolescents as the foundation upon which all decisions about school organization, policies, curriculum, instruction, and assessment are made</li></ul>	<ul style="list-style-type: none"><li>•Ensuring that every student learns and every member of the learning community is held to high expectations</li></ul>	<ul style="list-style-type: none"><li>•Providing all students with the knowledge and skills they need to take responsibility for their lives, to address life's challenges, to function successfully at all levels of society, and to be creators of knowledge</li></ul>	<ul style="list-style-type: none"><li>•Advocating for and ensuring every student's right to learn and providing appropriately challenging and relevant learning opportunities for every student</li></ul>

Source: AMLE<sup>205</sup>

High-performing middle schools set high expectations for students and ensure that teachers and staff are held accountable for improving student outcomes.<sup>206</sup> The 16 essential characteristics, as identified by AMLE, focus on providing challenging and high-quality learning experiences, creating a shared vision for supporting students, and creating a culture that meets students' needs (Figure 3.4).

<sup>205</sup> "This We Believe - Keys to Education Young Adolescents." Association for Middle Level Education, 2010. p. 13. <http://8461cuttingedgetechteam.wikispaces.com/file/view/22605279-This-We-Believe-Keys-to-Educating-Young-Adolescents.pdf>

<sup>206</sup> Williams et al., Op. cit., pp. 6–8.

**Figure 3.4: AMLE Essential Characteristics of Middle-Level Education**



Source: AMLE<sup>207</sup>

Finally, implementing middle school concepts such as interdisciplinary team teaching requires strong teacher and school commitment to interdisciplinary collaboration. This may require a shift in attitudes among teachers, who may prefer working autonomously or who may not have experience working collaboratively with other teachers. Schools must schedule common planning periods to ensure that collaboration can occur, and may need to provide additional training so that teachers are able to collaborate effectively.<sup>208</sup>

## **NINTH GRADE ACADEMIES**

Like the transition to middle school, Grade 9 can also be a critical transition point. As students adapt to the new social context and academic challenges of high school, their self-esteem may wane, they may lose interest in school, and their grades may suffer.<sup>209</sup> Poor academic

<sup>207</sup> "This We Believe - Keys to Education Young Adolescents," Op. cit., p. 14.

<sup>208</sup> Juvonen et al., Op. cit., pp. 26–27.

<sup>209</sup> [1] Abbott, S.E. and P.D. Fisher. "Ninth Grade Counts - Strengthening the Transition into High School." Great Schools Partnership, Summer 2012. p. 1.

<https://www2.ed.gov/programs/slcp/ninthgradecounts/ninthgradecountsguide.pdf> [2] Bottoms, G. "Redesigning

performance in Grade 9 is frequently associated with higher dropout rates – students who fail courses or have a large number of absences in Grade 9 are three times less likely to complete high school than those without academic or behavioral problems.<sup>210</sup>

To address this issue, dedicated academies for Grade 9 students emerged in the early 2000's to ease students' transition to high school and improve academic achievement.<sup>211</sup> Ninth grade academies are typically defined as self-contained learning communities designed to meet the specific needs of those students. A ninth grade academy can be housed as a separate space (e.g., hallway or wing) within a school or can be housed in its own building.<sup>212</sup> Researchers have identified several key administrative and programmatic aspects of ninth grade academies. In addition to being housed in a separate space, these academies are characterized by:

- **A school administrator** or administrative team dedicated to the ninth grade academy;
- **Faculty** dedicated to the academy; and
- **Interdisciplinary teams** of Grade 9 teachers.<sup>213</sup>

Further, successful academies typically rely on the following instructional practices:

- **Authentic learning experiences:** Authentic learning experiences refer to opportunities for students to apply their learning to “real-life” settings outside of the school environment, such as research projects, community outreach, and internships.
- **Personalization:** Personalization refers to adapting instruction to students' unique learning needs and identifying students not on track for graduation.
- **Rigorous and relevant instruction:** Ninth grade academies should provide a relevant, challenging curriculum that prepares all students to succeed in high school.

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the Ninth-Grade Experience - Reduce Failure, Improve Achievement and Increase High School Graduation Rates.” Southern Regional Education Board, 2008. p. 1. [http://publications.sreb.org/2008/08v06\\_9th-grade\\_redesign.pdf](http://publications.sreb.org/2008/08v06_9th-grade_redesign.pdf) [3] Warren, C. et al. “Final Report on the Study of Promising Ninth Grade Transition Strategies: A Study of Six High Schools.” U.S. Department of Education, March 2011. p. 3.

<https://www2.ed.gov/programs/slcp/ninthgradecounts/ninthgradestudy2011.pdf> [4] Neild, R.C. “Falling Off Track during the Transition to High School: What We Know and What Can Be Done.” The Future of Children, Spring 2009. p. 54. [http://www.futureofchildren.org/publications/docs/19\\_01\\_04.pdf](http://www.futureofchildren.org/publications/docs/19_01_04.pdf) [5] Kemple et al., Op. cit., p. 3.

<sup>210</sup> [1] Bottoms, Op. cit., p. 1. [2] Warren et al., Op. cit., p. 3.

<sup>211</sup> [1] Adams, C. “Ninth Grade Academies Explored in New Report.” Education Week, July 1, 2013.

[http://blogs.edweek.org/edweek/college\\_bound/2013/07/ninth\\_grade\\_academies\\_explored\\_in\\_new\\_report.html](http://blogs.edweek.org/edweek/college_bound/2013/07/ninth_grade_academies_explored_in_new_report.html) [2] Warren et al., Op. cit., p. 4.

<sup>212</sup> Legters, N. et al. “Implementing Ninth Grade Academies in Broward County, Florida.” MDRC, June 2013. p. ES-2. <http://files.eric.ed.gov/fulltext/ED545472.pdf>

<sup>213</sup> Bullet points adapted from: Ibid.

- **Professional learning and teacher collaboration:** Teachers should have the opportunity to collaborate with and learn from each other, including opportunities to jointly develop and refine Grade 9 lesson plans and instructional strategies.<sup>214</sup>

Ninth grade academies may also provide additional academic and social supports, such as tutoring, mentoring, counseling, and social services.<sup>215</sup>

### OVERVIEW OF RESEARCH

Although many researchers and educators point to the potential benefits of these academies, **few large research studies have compared ninth grade academies to traditional high schools.** Further, these academies often operate as schools-within-schools and often provide additional programs or supports for students. Therefore, most of the research on these academies has sought to investigate whether the *combination* of smaller learning communities and additional student supports can increase outcomes for Grade 9 students, rather than examining the effects of grade span configuration itself.

Figure 3.5, on the following pages, describes the results of several recent research studies of ninth grade academies. Some studies have found positive outcomes such as decreased dropout rates<sup>216</sup> and improved academic achievement for participants,<sup>217</sup> while other studies have found no difference in academic or behavioral outcomes for academy students compared to those in traditional high schools.<sup>218</sup>

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<sup>214</sup> Bullet points adapted from: Cook, C., H. Fowler, and T. Harris. "Ninth Grade Academies Easing the Transition to High School." Public Schools of North Carolina, October 2008. p. 2. <http://www.dpi.state.nc.us/docs/intern-research/reports/9thgradeacademies.pdf>

<sup>215</sup> [1] Legters et al., Op. cit., p. 4. [2] Kemple et al., Op. cit., p. 9.

<sup>216</sup> [1] Cook, Fowler, and Harris, Op. cit. [2] Osler, J.E. and C. Waden. "Using Innovative Technical Solutions as an Intervention for At Risk Students: A Meta-Cognitive Statistical Analysis to Determine the Impact of Ninth Grade Freshman Academies, Centers, and Center Models Upon Minority Student Retention and Achievement." *Journal on School Educational Technology*, 8:2, November 2012. Accessed via EBSCOhost

<sup>217</sup> Styron, R.A. and E.J. Peasant. "Improving Student Achievement: Can 9th Grade Academies Make a Difference." *International Journal of Education Policy & Leadership*, 5:3, May 7, 2010. <http://journals.sfu.ca/ijepl/index.php/ijepl/article/viewFile/179/88>

<sup>218</sup> [1] Cook, Fowler, and Harris, Op. cit. [2] Somers, M.-A., I. Garcia, and J. Quint. "Helping Students Make the Transition Into High School - The Effect of Ninth Grade Academies on Students' Academic and Behavioral Outcomes." MDRC, June 2016. [http://www.mdrc.org/sites/default/files/Helping\\_Students\\_Make\\_the\\_Transition\\_into\\_High\\_School\\_FR.pdf](http://www.mdrc.org/sites/default/files/Helping_Students_Make_the_Transition_into_High_School_FR.pdf)

**Figure 3.5: Evidence of the Effectiveness of Ninth Grade Academies on Student Performance**

AUTHOR(S)	YEAR	STUDY SETTING	STUDY DESCRIPTION	OUTCOMES
Somers, Garcia, and Quint <sup>219</sup>	2016	<ul style="list-style-type: none"> <li>Study of ninth grade academies created at 27 high schools in several Florida school districts between 2011 and 2007 (number of students not specified)</li> </ul>	<ul style="list-style-type: none"> <li>This study compared the academies at 27 high schools with 16 high schools that did not have academies, examining school-level data such as overall attendance rates, pass rates on state tests, credits earned toward graduation, and suspension rates.</li> <li>The study defined ninth grade academies as having four distinct structural components: 1) designated separate space in the high school; 2) a Grade 9 administrator who oversees the academy; 3) faculty assigned to teach only Grade 9 students; and 4) teachers organized into interdisciplinary teams with a common planning period.</li> </ul>	<ul style="list-style-type: none"> <li>These academies did not improve students' academic or behavioral outcomes (i.e., academic credits earned, state test scores, attendance, and suspensions and expulsions).</li> <li>Only half of the academies had fully implemented the model, indicating that schools may need "expert assistance" to implement it with fidelity.</li> </ul>
Osler and Waden	2012	<ul style="list-style-type: none"> <li>Minority students enrolled in ninth grade academies at 17 schools in North Carolina (number of students not specified)</li> </ul>	<ul style="list-style-type: none"> <li>The study sought to examine the impact of these academies on at-risk minority students.</li> <li>It examined "ninth grade academies, centers, and center models" but did not define these terms.</li> </ul>	<ul style="list-style-type: none"> <li>Almost all academic administrators (94.7%) rated their programs as successful.</li> <li>Dropouts among minority students decreased at the schools with ninth grade academies compared to the state average.</li> </ul>

<sup>219</sup> Somers, Garcia, and Quint, Op. cit.

AUTHOR(S)	YEAR	STUDY SETTING	STUDY DESCRIPTION	OUTCOMES
Styron and Peasant <sup>220</sup>	2010	<ul style="list-style-type: none"> <li>▪ 100 students enrolled in six schools in the southern United States from 2005 to 2006; half were enrolled in ninth grade academies and half in traditional high schools</li> <li>▪ Each school had a population of 60% or more who qualified for free or reduced lunch.</li> </ul>	<ul style="list-style-type: none"> <li>▪ The study compared ninth grade academies to traditional high schools.</li> <li>▪ Academies were defined as institutions where Grade 9 students were housed in a separate facility and students attended only elective courses with students in Grades 10-12.</li> <li>▪ Each school used block scheduling.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Academy students had higher mean scores on Algebra I and Biology I Subject Area Tests than those in traditional high schools.</li> <li>▪ Black students in ninth grade academies had mean biology scores approximately 60 points higher than black students in traditional schools, while white students' biology scores in the academies were approximately 29 points higher than white students in traditional schools.</li> </ul>
Cook, Fowler, and Harris <sup>221</sup>	2008	<ul style="list-style-type: none"> <li>▪ Data from students enrolled in 82 ninth grade academies throughout North Carolina from 2001 to 2007 (number of students not specified)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Study of ninth grade academies, defined as year-long, uniquely designed school programs that “provide ninth graders with the resources and support they need.”</li> </ul>	<ul style="list-style-type: none"> <li>▪ Non-promotion rates (not being promoted to the next grade) and dropout rates decreased for schools with academies compared to the state average.</li> <li>▪ There was no significant difference in academic achievement between ninth grade academies and the state average, as measured by state reading test scores.</li> </ul>

<sup>220</sup> Styron and Peasant, Op. cit.

<sup>221</sup> Cook, Fowler, and Harris, Op. cit.

AUTHOR(S)	YEAR	STUDY SETTING	STUDY DESCRIPTION	OUTCOMES
Kemple, Herlihy, and Smith <sup>222</sup>	2005	<ul style="list-style-type: none"> <li>▪ Study of 20 cohorts of Grade 9 students at five high schools in Philadelphia (number of students not specified)</li> </ul>	<ul style="list-style-type: none"> <li>▪ This study compared the Talent Development High School Model, a school reform initiative which includes Grade 9 success academies, to six non-Talent Development high schools.</li> <li>▪ This initiative emphasized accelerated instruction in reading and mathematics, high expectations for students, providing opportunities for struggling students to catch up, improving school capacity to implement reforms, and developing stronger school-family-community partnerships.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Talent Development High Schools had higher overall attendance rates, course credits earned, and promotion rates during the first year of high school.</li> <li>▪ These gains were sustained throughout high school.</li> <li>▪ Large proportions of students were not making adequate progress toward graduation.</li> </ul>

<sup>222</sup> Kemple, J.J., C.M. Herlihy, and T.J. Smith. "Making Progress Toward Graduation - Evidence from the Talent Development High School Model." MDRC, May 2005. [http://www.mdrc.org/sites/default/files/full\\_432.pdf](http://www.mdrc.org/sites/default/files/full_432.pdf)



## *BENEFITS*

Ninth grade academies are intended to address a number of challenges associated with entering high school, described below:

- **School size and bureaucracy:** The sense of community between teachers and students can be undermined by the large size and bureaucratic structure of many high schools, especially because many high schools are much larger than elementary and middle schools. There may be fewer opportunities for students and teachers to get to know each other well, leading students to feel less engaged or motivated. Ninth grade academies address this concern by hiring a smaller group of dedicated faculty and administrators to work with these students and fostering a positive environment.
- **Competitive and performance-oriented environment:** High schools often focus more on content learning and strict grading standards than elementary and middle schools, creating a more competitive environment. This can cause some students to feel isolated or alienated, especially those who are not doing well academically. The smaller, more supportive environment of the academy can help to reduce these feelings of isolation.
- **Lack of preparation for high school:** Many elementary and middle school students receive inadequate preparation for high school. The personalized academic and social supports that students receive in ninth grade academies can address the skills gaps and lack of prior preparation that some students may have experienced.<sup>223</sup>

Overall, administrators of these academies throughout the country believe that the community environment and the more personalized attention that students receive is crucial for improving achievement and preventing dropouts.<sup>224</sup>

## *POTENTIAL DRAWBACKS AND LIMITATIONS*

**Successful implementation of the ninth grade academy model is often a challenge for schools.** Three implementation studies of ninth grade academies found that half or fewer schools achieved “full implementation” of the model.<sup>225</sup> In Broward County, Florida, for example, schools were able to create separate spaces and administrative structures for ninth grade academies, but had more difficulty developing interdisciplinary teaching teams and implementing curricular and personalized instruction strategies to meet the needs of Grade 9 students.<sup>226</sup> Schools also struggled with developing individualized strategies for providing academic and social support to students, especially because schools received very little district support in determining how interdisciplinary teams should support students.<sup>227</sup>

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<sup>223</sup> Kemple et al., *Op. cit.*, pp. 1–13.

<sup>224</sup> Reents, J. “Isolating 9th Graders.” School Superintendents Association.  
<http://aasa.org/SchoolAdministratorArticle.aspx?id=10402>

<sup>225</sup> [1] Legters et al., *Op. cit.* [2] Somers, Garcia, and Quint, *Op. cit.* [3] Warren et al., *Op. cit.*

<sup>226</sup> Legters et al., *Op. cit.*, p. ES-4.

<sup>227</sup> *Ibid.*, p. ES-4-ES-5.

Indeed, program evaluators attributed many of the implementation issues experienced by schools to a shift in district priorities and subsequent decrease in support for the model.<sup>228</sup>

**In addition, districts interested in adopting these academies should be aware that the model often requires a significant resource investment.** Many districts that have implemented academies have received large grants through the U.S. Department of Education’s *Smaller Learning Communities Program*. Funds from these grants are typically used to hire additional administrators, teachers, and/or staff to operate the academies and to develop and implement programs to improve achievement. These programs have included family advocate systems, mentoring programs, reading and math interventions, enhanced guidance and advising, tutoring, and college and career readiness programs.<sup>229</sup> Beyond a financial investment, schools must also invest time and resources in providing additional training and professional development for teachers and staff and providing adequate common planning time for Grade 9 teachers.<sup>230</sup>

### *IMPLEMENTATION CONSIDERATIONS*

In addition to providing adequate district-level and administrative support for ninth grade academies, districts should be aware of several other pitfalls that can occur in implementing these models:

- **Location:** Ninth grade academies should be located as close as possible to the main high school, or located within the high school itself. This ensures that students have access to extracurricular activities and facilities offered by the main campus.
- **Parent buy-in:** Parents may be concerned that the academies can be too isolating for students or that students will not have access to the extracurricular activities in which they want to participate. Administrators of existing academies recommend that districts be prepared to address these concerns and hold orientation programs at middle schools to prepare students and their families for the new school.
- **Staff:** Districts should hire staff and teachers who are interested in teaching only Grade 9 students and who have experience working with this age group, which can be a challenge.<sup>231</sup>

Finally, to ensure that these academies truly address Grade 9 students’ academic and social needs, researchers recommend that schools develop a **proactive approach to facilitating students’ transitions to Grade 9**. Successful academies have developed clear visions of what students need to achieve before graduating and have worked to ensure that all staff are committed to student success. The commitment to student success can be seen in preventive programs and supports to stop students from “falling off track,” as well as timely systems of supports that address academic or behavioral problems as they occur. In addition, these

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<sup>228</sup> *Ibid.*, pp. 25–26.

<sup>229</sup> [1] Warren et al., *Op. cit.*, pp. 1, 4. [2] Legters et al., *Op. cit.*, pp. 19, 34, 75.

<sup>230</sup> Warren et al., *Op. cit.*, p. 2.

<sup>231</sup> Reents, *Op. cit.*

schools systematically review student and teacher data to track students’ progress and improve instructional practices. Finally, they actively value and encourage collaboration among teachers by scheduling common planning periods and providing professional development.<sup>232</sup>

## GRADES 7-12 SECONDARY SCHOOLS

Although 9-12 schools are by far the most prevalent type of secondary school configuration, the Grade 7-12 model is the second most common sequence (3,002 schools in the 2013-2014 school year) after the Grade 9-12 model (16,361 schools).<sup>233</sup>

### OVERVIEW OF RESEARCH

**The research literature on alternative secondary school configurations is very limited and recent studies are scarce.**<sup>234</sup> Hanover Research identified just two research studies comparing 7-12 configurations to other middle and high school configurations (Figure 3.6). These studies, although they measured different student outcomes, found somewhat contradictory results. The first study, conducted in 1992, found that Grade 8 students in junior/senior high configurations in Maine (such as 6-12, 7-12, or 8-12 schools) had lower academic achievement (in terms of test scores) than students in middle, junior high, or K-8 schools. However, the second study, which was published in 2000 and compared the 7-12 configuration to 9-12 and 10-12 configurations in Missouri, found that high school dropout rates were lowest for 7-12 schools.<sup>235</sup>

**Figure 3.6: Evidence of the Effectiveness of Alternative High School Models**

AUTHOR(S)	YEAR	STUDY SETTING	STUDY DESCRIPTION	OUTCOMES
Alspaugh <sup>236</sup>	2000	<ul style="list-style-type: none"> <li>Sample of 15 schools in Missouri from 1993 through 1997 (number of students not provided)</li> </ul>	<ul style="list-style-type: none"> <li>The study compared high school dropout rates in schools with the following grade spans: 7-12, 9-12, and 10-12.</li> </ul>	<ul style="list-style-type: none"> <li>Boys had higher dropout rates than girls in all three school types.</li> <li>The highest dropout rates were in 10-12 schools (6.68%), while the lowest dropout rates were in 7-12 schools (4.37%).</li> </ul>

<sup>232</sup> Warren et al., Op. cit., pp. 2, 16, 29, 33–39.

<sup>233</sup> “Table 216.80: Public secondary schools, by grade span, average school enrollment, and state or jurisdiction: 2013-14,” Op. cit.

<sup>234</sup> McVey, M.K. “School Grade Configuration 7-12 Review of Research.” Network for Educational Leaders, October 14, 2012. p. 2. <http://www.nearnorthschools.ca/meetings-and-agendas/board/Documents/10-22-2013/17%20School%20Grade%20Configuration%207-12%20Review%20of%20Research.pdf>

<sup>235</sup> Alspaugh, J.W. “The Effect of Transition Grade to High School, Gender, and Grade Level Upon Dropout Rates.” *American Secondary Education*, 29:1, Fall 2000. <http://wantagschools.org/cms/lib05/NY01001016/Centricity/Domain/5/Alspaugh2.pdf>

<sup>236</sup> Ibid.

AUTHOR(S)	YEAR	STUDY SETTING	STUDY DESCRIPTION	OUTCOMES
Wihry, Coladarci, and Meadow <sup>237</sup>	1992	<ul style="list-style-type: none"> <li>▪ Study of academic achievement of Grade 8 students at 163 schools in Maine (number of students not provided)</li> </ul>	<ul style="list-style-type: none"> <li>▪ The study used multivariate regression to compare outcomes for Grade 8 students in four types of grade configurations: elementary (K-8, K-9, 3-8); middle (4-8, 5-8, 6-8); junior high (7-8, 7-9); and junior/senior high (6-12, 7-12, 8-12).</li> </ul>	<ul style="list-style-type: none"> <li>▪ Students in elementary configurations had the highest academic achievement.</li> <li>▪ Junior high and middle grade span configurations were more effective than the junior/senior configuration, but less effective than the elementary configurations.</li> <li>▪ Students in the junior/senior grade span had the lowest scores overall and in reading.</li> </ul>

### BENEFITS

Proponents of the 7-12 model argue that it is effective because it **minimizes school transitions**. Because transitions between schools are often associated with a drop in academic achievement, the 7-12 model may minimize this effect by reducing the number of transitions students experience and allowing them more time to adjust to the high school environment.<sup>238</sup>

Second, districts with 7-12 schools argue that these schools benefit Grade 7 and 8 students because the model **allows them to access high school facilities and advanced coursework**.<sup>239</sup> A school district in Canada that recently adopted the 7-12 model has stated that the broader grade span allows Grade 7 and 8 students to attend “schools with specialized facilities to better meet their curricular needs through innovative learning environments.”<sup>240</sup> Cincinnati Public Schools, which adopted the 7-12 model in the 2013-2014 school year, cited early access to a more rigorous curriculum as the primary benefit of the 7-12 model:

The 7-12 high school model allows students to gain stronger progression and earlier proficiency in higher order skills in demanding subjects such as math and science. This positions students for earlier attainment for high school credits and success in the new standards and assessments.<sup>241</sup>

Contact with the high school setting at an earlier age may expose students to the college preparation track and help them focus on high school graduation and college and career

<sup>237</sup> Wihry, D.F., T. Coladarci, and C. Meadow. “Grade Span and Eighth-Grade Academic Achievement: Evidence From a Predominantly Rural State.” *Journal of Research in Rural Education*, 8:2. <https://umaine.edu/edhd/wp-content/uploads/sites/54/2010/05/Wihry-et-al.1.pdf>

<sup>238</sup> [1] Alspaugh, “The Effect of Transition Grade to High School, Gender, and Grade Level Upon Dropout Rates,” Op. cit., pp. 7–9. [2] “Research Supporting a 7-12 School Configuration.” Tulsa Public Schools, June 28, 2012. <http://www.sgdsb.on.ca/upload/documents/june-28-12-post-arc-research-7-12-school.pdf> [3] McVey, Op. cit., p. 7. [4] “Grades K-7 and 7-12 FAQs.” Upper Canada District School Board. <http://www.ucdsb.on.ca/teams/b2020/communications/faq/Pages/allgradesfaqs.aspx>

<sup>239</sup> McVey, Op. cit., p. 7.

<sup>240</sup> “Grades K-7 and 7-12 FAQs,” Op. cit.

<sup>241</sup> “College and Career Ready - Cincinnati Public Schools’ 7-12 High School Model.” Cincinnati Public Schools, 2015. p. 1. <http://www.cps-k12.org/sites/www.cps-k12.org/files/pdfs/ReadyforHighSchool-2015-16.pdf>

readiness.<sup>242</sup> Further, students are able to access additional extracurricular activities and career planning services available at the high school-level.<sup>243</sup> Teachers at the Coos Bay School District in New York, which adopted the 7-12 model in 2014, believe that access to additional electives, such as art, drama, and vocational classes, is beneficial for Grade 7 and 8 students because they can learn more about their interests and career goals.<sup>244</sup>

**An additional potential benefit of 7-12 schools is improved peer relationships.** In traditional elementary or middle school settings, students in Grades 7 and 8 are often prone to bullying younger students. In the 7-12 setting, however, these students may benefit from opportunities to learn from older role models, and the elementary school culture may also improve. Grade 6 students in K-6 schools may be able to take on more of a leadership role without being intimidated by older students.<sup>245</sup>

### *POTENTIAL DRAWBACKS AND LIMITATIONS*

**Although some believe that the 7-12 model is beneficial, there is limited empirical evidence to support the model,** as discussed previously. Moreover, anecdotal data suggest that the model does not consistently lead to academic benefits for students. Two Canadian districts which implemented the 7-12 model have found that Grade 8 students in these schools tend to have higher test scores. However, another district found no difference in academic achievement.<sup>246</sup> In the United States, results have similarly been mixed. Academic achievement in Baltimore 6-12 schools is behind that of 9-12 schools, while in Cincinnati, Grade 8 students in 7-12 students have outperformed those in K-8 schools.<sup>247</sup>

It is unclear why some students in 6/7-12 schools perform better and some perform worse than students in other grade configurations. While some parents and educators argue that the 7-12 setting fosters improved social environments for students, **others contend that it creates harmful or unsafe environments for the younger students in the school.** Combining “vulnerable adolescents with older teenagers” is a common concern for parents, who fear that students will experience bullying or be negatively influenced by older students.<sup>248</sup> In 7-12 settings within the Indianapolis Public School district, the superintendent found that “middle grade students aren’t too fond of the high school students.”<sup>249</sup> Middle grade

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<sup>242</sup> McManus, T. “Other Systems Praise Grades 6-12 High Schools.” *Augusta Chronicle*, January 23, 2014. <http://chronicle.augusta.com/news/education/2014-01-23/other-systems-praise-grades-6-12-high-schools>

<sup>243</sup> “College and Career Ready - Cincinnati Public Schools’ 7-12 High School Model,” *Op. cit.*, p. 1.

<sup>244</sup> Davis, C. “Coos Bay School Board Opts for preK-6, 7-12 Grade Configuration.” *The World*, December 1, 2014. [http://theworldlink.com/news/local/education/coos-bay-school-board-opts-for-prek---/article\\_333c1876-f526-5043-ba01-ee6e523515a6.html](http://theworldlink.com/news/local/education/coos-bay-school-board-opts-for-prek---/article_333c1876-f526-5043-ba01-ee6e523515a6.html)

<sup>245</sup> McVey, *Op. cit.*, p. 5.

<sup>246</sup> McVey, *Op. cit.*

<sup>247</sup> McManus, *Op. cit.*

<sup>248</sup> [1] McVey, *Op. cit.* [2] Richards, E. “Parents Fret about MPS Middle-High School Hybrids.” *Milwaukee-Wisconsin Journal Sentinel*, July 18, 2010. <http://archive.jsonline.com/news/education/98720389.html> [3] Davis, *Op. cit.*

<sup>249</sup> Colombo, H. “IPS Board to Ferebee: Discontinue 7-12 High Schools.” *Chalkbeat*, June 5, 2015. <http://www.chalkbeat.org/posts/in/2015/06/05/ips-board-to-ferebee-discontinue-7-12-high-schools/#.WA4myvkrLIW>

students may benefit from being in a more “secure, familiar school setting,” such as a K-8 school.<sup>250</sup>

Finally, **young adolescents have different needs from older students**, and it is unclear whether 7-12 schools can meet the needs of both groups. The executive director of the National Forum to Accelerate Middle-Grades Reform emphasizes the importance of treating middle and high school grades students differently, even in the same school setting: “[...] if you teach (middle schoolers) as if they are in high school, that is a mismatch and not the way it’s supposed to be done.”<sup>251</sup> Further, secondary teachers may not have the training and experience necessary to work effectively with younger populations, or middle grade teachers may be inexperienced working with older students.<sup>252</sup> In practice, combining middle and high school grades can also present instructional challenges. Math teachers in 7-12 schools in Indianapolis, for example, are tasked with teaching both Calculus and Pre-Algebra. However, most teachers prefer to teach a more limited range of learning levels or age groups and often have “unique” skill sets that make them more effective at teaching one subject over the other.<sup>253</sup>

### IMPLEMENTATION CONSIDERATIONS

**Because Grade 7 and 8 students have different developmental needs than older students, several school districts with 7-12 schools have implemented school-within-school models for 7-8 and 9-12 students.** These students share the same building and resources, but have separate classrooms, class schedules, and lunch periods, and sometimes different assistant principals or other administrators.<sup>254</sup> However, different age groups may interact with one another occasionally, such as between classes and on school buses.<sup>255</sup> Districts have also developed plans for fostering positive interactions between older and younger students. Cincinnati Public Schools, for instance, has created a program in which older high school students mentor and tutor those in younger grades.<sup>256</sup>

### GRADES 9-10 AND 11-12 SECONDARY SCHOOLS

Hanover was unable to identify any existing research studies assessing the outcomes of students in Grades 9-10 and 11-12 secondary schools. Grades 9-10/11-12 schools appear to be uncommon; NCES does not report the prevalence of these configurations.<sup>257</sup> This model

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<sup>250</sup> Wihry, Coladarci, and Meadow, Op. cit., p. 68.

<sup>251</sup> Richards, Op. cit.

<sup>252</sup> McVey, Op. cit.

<sup>253</sup> Colombo, Op. cit.

<sup>254</sup> [1] “Literature Review on Grade Span or Grade Configuration in Schools.” Thames Valley District School Board, March 2004. <http://www.tvdsb.on.ca/areastudy/elemfrenchpdfs/freqquestions.pdf> [2] “Transformational Recommendations for the Concept of 7-12 Schools - Kanata ARC North and South Joint Meeting.” Ottawa-Carleton District School Board, May 26, 2011. p. 2. <http://www.usd417.net/vimages/shared/vnews/stories/546ba8a84aa69/20141118124227712.pdf>

<sup>255</sup> McManus, Op. cit.

<sup>256</sup> Ibid.

<sup>257</sup> “Table 216.80: Public secondary schools, by grade span, average school enrollment, and state or jurisdiction: 2013-14,” Op. cit.

may be unpopular in part because it would increase the number of transitions students experience—as discussed in Section I, school transitions are typically associated with a decrease in student achievement. For example, 1987 study comparing K-8 and 9-12 grade spans to K-6, 7-9, and 10-12 grade spans found that a significant decrease in GPA was associated with school transitions, regardless of the grade configuration.<sup>258</sup> However, a 2011 review of high school transition literature found that the research “suggests that the high school transition can be challenging, but not so for all adolescents,” especially when students receive adequate social support.<sup>259</sup>

Moreover, it is unclear whether a transition during high school would be as challenging as the transition from middle to high school. It is possible that a transition from a Grade 9-10 to 11-12 school would not be as difficult as the initial high school transition, especially if the Grade 11-12 setting is similar to the Grade 9-10 setting—typically, research has found that the middle to high school transition presents challenges due to differences in the social, academic, and behavioral expectations of students.<sup>260</sup>

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<sup>258</sup> Gordon, M.F. et al. “Review of Literature on Grade Configuration and School Transitions.” Center for Applied Research and Educational Improvement, University of Minnesota, March 2011. p. 7.  
<http://conservancy.umn.edu/bitstream/handle/11299/138604/Impact%20of%20School%20Transitions%20and%20Different%20Grade%20Configurations.pdf?sequence=1>

<sup>259</sup> Benner, Op. cit.

<sup>260</sup> Ibid.

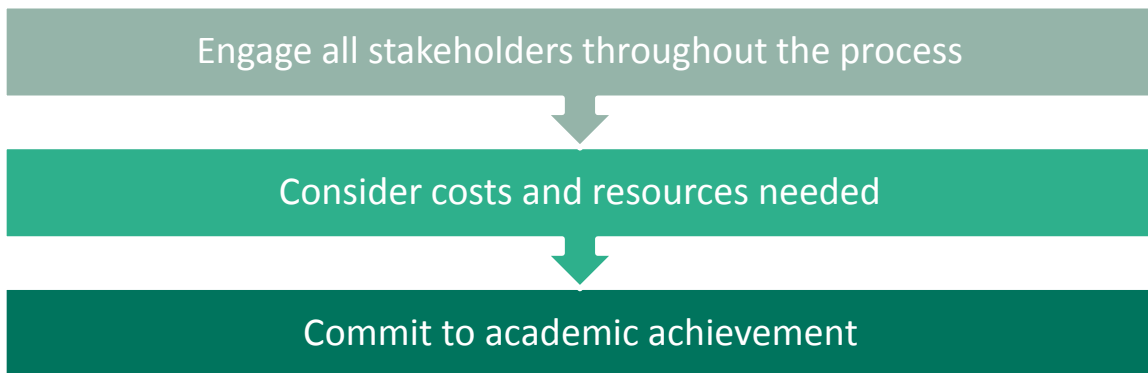
## SECTION IV: BEST PRACTICES IN RE-CONFIGURING GRADES

Regardless of the grade configuration selected, implementing new configurations can initially be disruptive or frustrating for teachers, students, and parents as schools adjust to serving new student populations.<sup>261</sup> This section provides an overview of strategies that other districts have used to facilitate the implementation of new grade configurations and provides potential next steps for ACPS to take to reconfigure its existing grade spans.

### KEY STRATEGIES

Districts typically engage stakeholders throughout the process, consider the costs and resources needed to change grade spans, and ensure a strong commitment to academic achievement (Figure 4.1).

**Figure 4.1: Strategies for Implementing New Grade Configurations**



### ENGAGE STAKEHOLDERS

**Districts typically review the grade configuration literature and solicit feedback from stakeholders when deciding whether to adopt new grade configurations.** A 1997 report on grade configurations by the Northwest Regional Educational Laboratory (NREL) recommends that districts first review the literature on grade configurations and visit or speak with other districts with the same configuration to learn about the benefits and disadvantages of potential configurations.<sup>262</sup> Districts in Montana and Washington that recently reconfigured grades considered state and local trends when deciding on potential grade configurations.<sup>263</sup>

<sup>261</sup> [1] Gewertz, Op. cit. [2] Reeves, Op. cit.

<sup>262</sup> Paglin and Fager, Op. cit., p. 9.

<sup>263</sup> [1] Reid, M. "SKSD Grade Reconfiguration Memo." South Kitsap School District, July 15, 2015. <http://www.skitsap.wednet.edu/cms/lib/WA01000495/Centricity/Domain/49/2015%20Grade%20Reconfiguration%20Memo%20final.pdf> [2] "Benefits/Challenges: Next Generation EPS Secondary Learning Experiences/Grade Configuration." Edina Public Schools. <http://www.edinaschools.org/cms/lib07/MN01909547/Centricity/Shared/PDFs/Grade%20Configuration%20-%20Benefits-Challenges.pdf>



After selecting potential configurations based on the research literature and regional trends, districts should assess stakeholders' views on these potential configurations. NREL recommends that districts "consider what configuration fits best with community geography and values."<sup>264</sup> To ensure alignment with stakeholder values, a number of districts have conducted surveys and focus groups with students, parents, and other community members to determine which grade configuration to adopt.<sup>265</sup> Districts have also created boundary review committees, consisting of parents, teachers, and staff, which have reviewed district plans for grade configuration and school boundary zones.<sup>266</sup>

### CONSIDER COSTS AND RESOURCES

As discussed in Section I, districts must consider a range of issues related to grade configuration. Cost considerations are a key issue for districts to weigh when considering new grade spans. Transportation costs could increase or decrease depending on the details of the new configuration.<sup>267</sup> Schools may also need to add classrooms, purchase additional furniture, or modify their facilities to meet the needs of older or younger students;<sup>268</sup> Space is often a limiting factor for districts that wish to modify their grade configurations.<sup>269</sup>

Researchers at the Brookings Institution have found that **costs associated with grade re-configurations can vary widely**. In Denver Public Schools, for example, the district spent approximately \$20 per student to purchase new classroom furniture and to upgrade science labs, libraries, and art studios when converting nine K-5 schools to K-8. The district also spent approximately \$30 per student over a three-year period to fund additional buses and bus routes that resulted from the K-8 conversion. These costs may vary depending on location and existing district facilities. Denver had extra space in K-5 schools to house the Grade 6—8 students. However, New York City schools spent approximately \$150 per student to renovate its schools to accommodate middle grades students when it converted to the K-8 model. In addition, its per-student costs for furniture and other material upgrades were nearly twice that of Denver.<sup>270</sup>

<sup>264</sup> Paglin and Fager, *Op. cit.*, p. 9.

<sup>265</sup> [1] "Edina School Board Approves Future Direction for Middle School, High School Configurations." Edina Public Schools, June 20, 2014. <https://www.edinaschools.org/site/default.aspx?PageType=3&DomainID=30&ModuleInstanceID=3758&ViewID=6446EE88-D30C-497E-9316-3F8874B3E108&RenderLoc=0&FlexDataID=7533&PageID=109> [2] "FAQs - Middle School Grade Configurations." Jeffco Public Schools. [http://www.jeffcopublicschools.org/fmp/sixth\\_grade\\_faq.pdf](http://www.jeffcopublicschools.org/fmp/sixth_grade_faq.pdf) [2] Smith, C. "District-Wide Enrollment Balancing Recommendations." Portland Public Schools, March 19, 2016. p. 10. <http://www.pps.net/cms/lib8/OR01913224/Centricity/Domain/182/3-29-16-Super-Final-Recommendations-March-29-16.pdf>

<sup>266</sup> [1] Reid, *Op. cit.* [2] "District-Wide Boundary Review Values and Policy Framework - Prepared by the District-Wide Boundary Review Advisory Committee." Portland Public Schools, July 22, 2015. [http://www.pps.net/cms/lib8/OR01913224/Centricity/Domain/182/DBRAC\\_Values\\_and\\_Policy\\_Framework\\_V8\\_amended\\_FINAL\\_072215.pdf](http://www.pps.net/cms/lib8/OR01913224/Centricity/Domain/182/DBRAC_Values_and_Policy_Framework_V8_amended_FINAL_072215.pdf)

<sup>267</sup> Paglin and Fager, *Op. cit.*, p. 10.

<sup>268</sup> [1] Pardini, "Revival of the K-8 School," *Op. cit.* [2] Gewertz, *Op. cit.* [3] "K-8 Schools May Help School Districts Improve Student Performance," *Op. cit.*, p. 6.

<sup>269</sup> "District Examples of Grade-Level Configurations." School Superintendents Association. <https://www.aasa.org/SchoolAdministratorArticle.aspx?id=8718>

<sup>270</sup> Jacob and Rockoff, *Op. cit.*, p. 16.

**COMMIT TO ACADEMIC ACHIEVEMENT**

**Educators and researchers emphasize that a commitment to “sound educational practices”<sup>271</sup> should be the underlying goal of any grade reconfiguration.<sup>272</sup>** Districts should be aware of the developmental issues facing students at different grade levels and ensure that the curriculum, class schedules, and behavioral expectations meet students’ needs. Further, districts should consider whether staff and teachers need additional training to serve new student populations.<sup>273</sup> Finally, as discussed previously, districts should ensure articulation between K-12 curricula and “ensure that students move smoothly through the system, in terms of both academics and social and emotional adjustment.”<sup>274</sup> Comprehensive transition programs, such as those discussed in Section I, can help students navigate transitions to new schools.

To assess the effects of a new grade configuration, districts can examine a range of student-, teacher-, and school-level measures, listed in Figure 4.2.

**Figure 4.2: Indicators for Assessing the Effects of Grade Re-Configurations**

STUDENT ACADEMIC OUTCOMES	STUDENT PSYCHOLOGICAL AND SOCIAL OUTCOMES	STUDENT BEHAVIORAL OUTCOMES	TEACHER OUTCOMES	SCHOOL OUTCOMES
<ul style="list-style-type: none"> <li>▪ State test scores in reading and/or math</li> <li>▪ Grade point average</li> <li>▪ Number of failed subjects</li> <li>▪ Promotion to the next grade</li> <li>▪ Dropout rates</li> </ul>	<ul style="list-style-type: none"> <li>▪ Student engagement and motivation</li> <li>▪ Planning for the future</li> <li>▪ Self-esteem</li> <li>▪ Perceptions of safety</li> <li>▪ Substance use</li> <li>▪ Feelings of connection to peers, teachers, or the school in general</li> <li>▪ Participation in extracurricular activities</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of absences or attendance rates</li> <li>▪ Number of suspensions or disciplinary infractions</li> <li>▪ Incidents of violent behavior</li> </ul>	<ul style="list-style-type: none"> <li>▪ Perceptions of student behavior, discipline, or violence</li> <li>▪ Perceptions of other school or student factors</li> <li>▪ Teacher-student interactions</li> <li>▪ Teacher morale</li> </ul>	<ul style="list-style-type: none"> <li>▪ School size and class size</li> <li>▪ Teacher or classroom quality</li> <li>▪ Financial resources and spending</li> </ul>

Source: Center for Public Education<sup>275</sup> and University of Minnesota<sup>276</sup>

Figure 4.3 on the following page provides a profile of Edina Public schools, a suburban school district in Montana, which recently reconfigured its middle and high school grade span after an extensive research and planning process leveraging the strategies detailed in this section.

<sup>271</sup> Paglin and Fager, Op. cit., p. 9.

<sup>272</sup> [1] Byrnes and Ruby, Op. cit., pp. 131–132. [2] Beane and Lipka, Op. cit. [3] “Grade-Span Configurations.” *District Administration*, March 1, 2005. <https://www.districtadministration.com/article/grade-span-configurations>

<sup>273</sup> Paglin and Fager, Op. cit., pp. 7–9.

<sup>274</sup> *Ibid.*, p. 10.

<sup>275</sup> “School Organization: Full Report.” Center for Public Education, September 4, 2008.

<http://www.centerforpubliceducation.org/Main-Menu/Organizing-a-school/School-organization-At-a-glance/School-organization-Full-report.html>

<sup>276</sup> Gordon et al., Op. cit., pp. 2–4.

**Figure 4.3: Grade Configuration Profile – Edina Public Schools**

Edina Public Schools, a district in suburban Edina, Montana, elected in 2014 to reconfigure its middle school and high school, shifting from a Grade 6-9 and 10-12 grade span to a Grade 6-8 and 9-12 configuration. This district decided on this configuration based on:

- The district’s strategic plan, which identified the need to improve middle grades and Grade 9 learning experiences;
- Research on the potential benefits and challenges of various grade configurations, considering the potential effects on curriculum, costs, and facility and transportation use; and
- Solicitation of feedback from all stakeholders by conducting surveys and focus groups with parents, students, staff, and community members.

The district found that a majority of community members and parents supported a Grade 9-12 high school grade span—54 percent of community members and 65 percent of parents surveyed in fall 2013 rated a comprehensive Grade 9-12 experience as a top priority for the district. Stakeholders and district administrators also believed that the Grade 6-8 and 9-12 grade span supported the district’s goals of creating a “true middle school experience,” allowing the district to create smaller middle schools with more class options. The new grade span would also help the curriculum better align with Minnesota’s state academic standards.

The district plans to implement its new grade span in fall 2017, which will increase the size of the high school by around 700 students. To create a personalized learning environment in this larger school, the district plans to create small learning communities within the school. These learning communities, administrators hope, will help to ease school transitions and increase student engagement.

Source: Edina Public Schools<sup>277</sup>

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<sup>277</sup> “Strategic Plan: Next Generation Learning Experience - Grade Configurations.” Edina Public Schools. <http://www.edinaschools.org/GradeConfiguration> [2] “Benefits/Challenges: Next Generation EPS Secondary Learning Experiences/Grade Configuration,” Op. cit. [2] “Next Generation Learning Experience: Grade Configuration - Decision Process.” Edina Public Schools. <http://www.edinaschools.org/Page/3803> [2] “Edina School Board approves future direction for middle school, high school configurations,” Op. cit.

## NEXT STEPS FOR ACPS

Hanover recommends that ACPS solicit feedback from a wide range of stakeholders to identify potential advantages and limitations of proposed grade configurations (Figure 4.4). Stakeholder surveys are useful for determining stakeholders’ broad opinions on grade configurations and whether they would support a particular configuration, while focus groups are useful for gaining more in-depth information, such as *why* respondents do or do not support a particular grade span.

Figure 4.4: Recommended Next Steps for ACPS

Stakeholders to Engage	Action Items
<ul style="list-style-type: none"> <li>• <b>Parents and Families</b></li> <li>• <b>Teachers and Staff</b></li> <li>• <b>Students</b></li> <li>• <b>Other Community Members</b> (e.g. potential district enrollees and families, local employers, community colleges)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Stakeholder Surveys</b> - Assess general opinions on proposed configurations</li> <li>• <b>Community Meetings or Focus Groups</b> - Identify potential strengths and weaknesses of proposed configurations</li> </ul>

In addition to considering stakeholder feedback, **ACPS should also consider the impact of a new grade configuration on a variety of outcomes**, such as students’ learning, non-academic outcomes, teacher professional development needs, the school’s demographic composition, and the district’s budget and allocation of resources. Figure 4.5 on the following page provides questions which ACPS should take into account when making decisions regarding grade configurations.

**Figure 4.5: Guiding Questions for Making Grade Configuration Decisions**

**STUDENT LEARNING**

- How will the new grade configuration affect student access to elective or advanced courses?
- How many points of transition and articulation will occur, and how will the district and schools address these transition and articulation points?

**NON-ACADEMIC OUTCOMES**

- How will the new grade configuration affect student access to extracurricular opportunities?
- How will the new grade configuration affect parental involvement?
- How will the presence or absence of older students affect younger students in a particular school? What are the opportunities for interactions between students of different age groups?

**TEACHER PROFESSIONAL DEVELOPMENT**

- Do teachers have the skills necessary to teach students in the new grade configuration? Will they require additional training to meet students' needs?
- How will opportunities for teacher collaboration and mentoring be affected?

**SCHOOL DEMOGRAPHIC COMPOSITION**

- How will the new grade configuration school demographic composition? Will the new grade configuration increase or decrease racial, ethnic, or socioeconomic diversity within the school?

**ALLOCATION OF RESOURCES**

- Will existing school buildings and classrooms accommodate the new grade span?
- Will schools need new furniture or other supplies as a result of grade re-configuration?
- Will the new configuration affect transportation costs? How far will students have to travel?

Source: Barton and Klump,<sup>[1]</sup> Derby Public Schools,<sup>[2]</sup> Henry,<sup>[3]</sup> Paglin and Fager<sup>[4]</sup>

<sup>[1]</sup> Barton, R. and J. Klump. "Figuring Out Grade Configurations." *Principal's Research Review*, 7:3, May 2012.

<http://educationnorthwest.org/sites/default/files/resources/PRR-Figuring-Out-Grade-Configurations.pdf>

<sup>[2]</sup> "Proposal for Elementary School Grade Span Re-Configuration." Derby Public Schools.

[https://www.derbyps.org/uploaded/Board\\_of\\_Education/documents/Proposal\\_for\\_Elementary\\_School\\_Configuration\\_Change.pdf](https://www.derbyps.org/uploaded/Board_of_Education/documents/Proposal_for_Elementary_School_Configuration_Change.pdf)

<sup>[3]</sup> Henry, C. "Ninth-Graders Should Move to High School, SK Committee Says." *Kitsap Sun*, June 12, 2015.

<http://archive.kitsapsun.com/news/local/ninth-graders-should-move-to-high-school-sk-committee-says-ep-1072135437-354665171.html>

<sup>[4]</sup> Paglin and Fager, Op. cit.

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