RESEARCH & EVALUATION

RESEARCH BRIEF

Grade-level configurations and student outcomes

by Laura Fogarty & Matthew Linick

Across the country, schools differ in terms of how grade levels are grouped together by building. Students who attend a middle school (where the "middle grades" that students attend during their pre-teen years are grouped separately from both younger and older students) were largely found to have drops in academic proficiency; to underperform in math and reading achievement compared with students who attend a K–8 school. Further, select studies indicate that transition to middle school (as opposed to a K–8 model) is associated with increased absences, infractions for poor behavior, and higher high school dropout rates. No studies in this review were found to suggest that students in middle school outperform students of the same grades in K–8 schools; neither was evidence found of middle school students having more positive outcomes.

Introduction

Schools nationwide differ in terms of grade level configuration, and debate continues regarding the best practice for organizing schools by grade. Schools may be structured in different configurations; for example, banding together grades PreK–K, K–5, K–6, K–8, 5–7, 6–7, 6–8, 6–9. For decades, schools across the nation have implemented changes in how grade levels are grouped together, and many variations can be seen in different schools.

Why do differences exist in how students are grouped together by grade? Why is there no universal agreement that administrators nationwide can come to regarding how grades should be configured? Different theories exist on how students can benefit academically and developmentally by being grouped with specific grades. In the 1970s, there was a push for separating children at the pre-teen age (typically identified as ages 11–14) from both younger, elementary school children as well as from older, high school students.

The main belief behind the movement for this separation was that students of the pre-teen age are experiencing numerous changes (i.e., going through puberty; beginning to form their own identity) and that they would benefit from being separated from younger children during the transitional period, before they are ready to enter high school. This driving belief helped give rise to the middle school; a building designed specifically for students in the "middle grades" (these grades differ in definition, but typically include 6–8). A popular alternative to schooling these students in a separate facility is to continue education in the same building from grades K–8.

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While the concept of organizing grades into different groupings has been around for decades, there is no uniform agreement on which groupings work best; making this an area that would benefit from additional, continued research. One of the main areas of consideration for school administrators is to investigate how different grade-banding approaches impact student outcomes.

Findings:

- Students that attend pre-kindergarten in a standard elementary school outperform their peers who attend a preprimary school.
- Students that attend K–8 buildings outperform their peers in math and reading.
- Students that attend K–8 buildings have better attendance, fewer discipline incidents, and better graduation rates.

After review of numerous studies that deal with grade configuration, it has been found that schools that use the K–8 banding are associated with improved student outcomes compared to schools that use the middle school model. There are multiple methods for organizing students by grade that schools around the country have implemented; differing in terms of which grades are banded together. Regarding student outcomes, factors that were measured in the discussed studies included achievement in reading and mathematics, behavior, absence, and later dropout rates.

Alternative grade configuration of the earliest grades was examined in one study.[i] In a comparison of preprimary schools (PreK–K) and standard elementary schools, students enrolled in preprimary schools learned less in math and reading than did students at the same grade level who were part of a standard elementary school grouping. It is suggested that this difference may be partially due to kindergarten students in preprimary schools missing out on the advantage of interacting with older students.

Some studies found that K–8 structures benefited student outcomes in math and reading[ii iii iv] while other studies found K–8 only benefited math.[v] No evidence was found that attending middle schools resulted in higher achievement in math or reading. One study found that moving students from elementary to middle school in 6th or 7th grade causes significant drops in math and English achievement, and further found little evidence that placing students in middle school is cost-effective.[vi] Another study also found that students moving to middle school in grades 6 or 7 suffered a sharp drop in student achievement in the transition year, and that this drop continued to persist through 10th grade.[vii]

In addition to measuring academic achievement, other outcomes were compared as well to explore the relationship between grade configuration and student success. One study found that 6th-grade students who attend middle school are twice as likely as those enrolled in a K–8 organization to have infractions for poor behavior.[viii] The authors of this study suggest separating 6th-graders from older adolescents. Absences were also measured by another study.[vii] Students moving from elementary school to middle school in grades 6 and 7 were found to have more student absences than those in K–8 schools, and these absences were shown to persist throughout additional school years. Finally, middle school entry was found to be associated with higher 10th-grade dropout rates. Two studies found few differences between middle grade span configuration and academic achievement.[ix x] These findings provide further support for the use of the K–8 model as opposed to separating students in the middle grades. In addition to improved academic outcomes, students in K–8 schools have been found to have fewer infractions for poor behavior, fewer absences, and lower rates of dropout in later grades.

Policy Recommendations

While the reviewed literature varies in its analyses of specific grade bandings (i.e., PreK–K, 5, 6, K–8), and the studies were not perfectly aligned in their findings, several important themes emerge from the studies.

- Schools that use K–8 groupings have generally been found to be associated with more desirable student outcomes (i.e., higher math and reading proficiency, fewer infractions, decreased absences and later dropout rates) than have schools that use the middle school model.

- Students enrolled in preprimary schools were found to learn less in math and reading than students with typical elementary school structures, although additional studies are recommended to gather more information on this comparison.

For school and district leaders considering different approaches to grade banding and wondering which grade band groupings would benefit students the most, the current evidence suggests that students benefit most from attending K–8 schools or preK–8 schools. While some schools differ in terms of grade banding and student outcomes, it appears that students enrolled in schools that use the K–8 model produce more desirable student outcomes than schools that separate students in the middle grades. Further, students who attend preprimary schools display lower academic performance than those in standard elementary schools. Administrators who seek guidance on how to best structure or restructure schools based on grade groupings should review these findings and investigate the studies cited to the right for additional information.

i Burkam, D. T., Michaels, D. L., & Lee, V. E. (2007). School grade span and kindergarten learning. *Elementary School Journal, 107(3)*, 287–303.

ii Byrnes, V. & Ruby, A. (2007). Comparing achievement between K-8 and middle schools: a large-scale empirical study. *American Journal of Education, 114 (1)*, 101-135.

iii Clark, D.M., Slate, J.R., Combs, J.P., & Moore, G.W. (2013). Math and reading differences between 6-8 and K-8 grade span configurations: A multiyear, statewide analysis. *Current Issues in Education, 16 (2)*.

iv Schwartz, A.E., Stiefel, L., Rubenstein, R., & Zabel, J. (2011). The path not taken: How does school organization affect eighth-grade achievement? *Educational Evaluation and Policy Analysis, 33 (3)*, 293-317.

v Keiffer, M.J. (2013). Development and reading and mathematics skills in early adolescence: Do K-8 public schools make a difference? *Journal of Research on Educational Effectiveness, 64 (4)*, 361-379.

vi Rockoff, J.E. & Lockwood, B.B. (2010). Stuck in the middle: Impacts of grade configuration in public schools. *Journal of Public Economics, 94 (11-12)*, 1051-1061.

vii Schwerdt, G. & West, M.R. (2013). The impact of alternative grade configurations on student outcomes through middle and high school. *Journal of Public Economics, 97*, 308-326.

viii Cook, P.J., MacCoun, R., Muschkin, C. & Vigdor, J. (2007). The negative impacts of starting middle school in sixth grade. *Journal of Policy Analysis and Management, 27 (1)*, 104-121.

ix Dove, M.J., Pearson, L.C. & Hooper, H. (2010). Relationship between grade span configuration and academic achievement. *Journal of Advanced Academics, 21 (2)*, 272-298.

x Weiss, C.C. & Kipnes, L. (2006). Reexamining middle school effects: A comparison of middle grades students in middle schools and K-8 schools. *American Journal of Education, 112(2)*, 239-272.