

4-2017

# Does Grade Configuration Affect Middle School Students' Achievement?

Katie Johnston

*Northwestern College - Orange City*

Follow this and additional works at: [https://nwcommons.nwciowa.edu/education\\_masters](https://nwcommons.nwciowa.edu/education_masters)



Part of the [Secondary Education Commons](#)

---

## Recommended Citation

Johnston, K. (2017). *Does grade configuration affect middle school students' achievement?* (Master's thesis, Northwestern College, Orange City, IA). Retrieved from URL [http://nwcommons.nwciowa.edu/education\\_masters/36/](http://nwcommons.nwciowa.edu/education_masters/36/)

This Article is brought to you for free and open access by the Education at NWCommons. It has been accepted for inclusion in Master's Theses & Capstone Projects by an authorized administrator of NWCommons. For more information, please contact [ggrond@nwciowa.edu](mailto:ggrond@nwciowa.edu).

Does Grade Configuration Affect Middle School Students' Achievement?

Katie Johnston

Northwestern College

April 15, 2017

### Abstract

This literature review analyzes current and past research over middle school grade configurations. Many large cities are integrating sixth, seventh, and eighth graders into elementaries because they believe middle schools are ineffective. These schools cite a lack of student achievement as the cause to reconfigure building grade spans. The research to support this idea does not look at what takes place within these schools however. When the middle school concept is implemented with fidelity, research has shown students can succeed. Four characteristics commonly missing are having structures to support relationships and learning, providing services to meet needs of students, including family in the education of their students, and having teachers be knowledgeable about educating adolescents.

*Keywords:* grade configuration, grade span, student achievement, middle school concept, transitions

### Does Grade Configuration Affect Middle School Students' Achievement?

Public schools in the United States have evolved over the past two centuries. The one room schoolhouse gave way to elementary and secondary schools. In the early 1900s, “schools that contained the first eight grades dominated the nation” (Dove, Pearson, & Hooper, 2010, pg. 277). As the needs of the work force changed, so did schools’ grade configurations. Junior highs were created to prepare more students to attend high school (Hough, 1995) and to alleviate the enrollment strains on elementary. In 1950, the first middle school was created. The idea behind the middle school was to better meet the needs of adolescent learners. Many middle schools started with seventh and eighth grade and have expanded to include sixth grade, and sometimes fifth grade. With increased pressure to improve student achievement, middle school grade configurations have been challenged.

In the state of Iowa, there are school districts facing tremendous growth while others’ enrollments are declining. Administrators, school boards, and communities are faced with many decisions in either situation. Whether building new facilities or closing schools, districts need to ensure their choices have lasting, positive effects for their students. Grade configuration is one of these choices. Analysis of past and current research shows grade configuration does not directly affect student achievement. How students are grouped in buildings is not what matters most; what matters is what happens inside these buildings. As *This We Believe* from the Association for Middle Level Education states, there are 16 characteristics required for middle schools to be effective. While all 16 are important, not all middle schools exhibit all 16 characteristics. When looking at the ineffectiveness of middle schools, there are four characteristics from *This We Believe* that seem to be missing from many middle schools. First, structures must be in place to enable strong relationships to evolve and meaningful learning to occur. Second, students,

teachers, and parents need to have support services provided that assist in meeting the needs of the students. The third item many middle schools are missing is to have families be an integral part of the students' education. The last characteristic is to make sure teachers understand how to teach students of this age group (This we believe, 2010). This literature review will address research in support of middle school grade configurations, research opposed to middle school grade configurations and conclusions that can be drawn from these studies.

### **In Support of Middle School Grade Configurations**

With government money comes government accountability. Schools receive federal, state, and local money and in return must meet certain requirements and expectations. Besides collecting multiple pieces of data within their own buildings and districts, schools look at current research to ensure they are using the best practices to educate their students. Since the first middle school in 1950, many studies have been performed with a focus on this age group. "Between 1991 and 2003, more than 3,700 studies related to middle schools were published" (Beane & Lipka, 2006, p. 26). Those that discussed grade configuration concentrated primarily on transitions and student achievement, while others researched the schools' climates.

School transitions are part of a student's education. Upon entering middle school, a student is expected to learn a new building, new expectations, new routines, new school organization, and possibly new peers. All these changes could be happening while a student is experiencing changes physically and emotionally. With schools starting to include fifth grade in the middle school grade configuration, transitions are happening earlier. Brian Carolan (2013) analyzed the effect of transitioning after fourth grade using data from the Early Childhood Longitudinal Study (ECLS). This data included a mixture of students from around the United States and various sizes of school districts. Fifth grade reading, math, and science achievement

scores were compared between students who had just transitioned to a new building due to grade promotion and students who did not transition.

Statistically, transitioning at this age did not show a decrease in student achievement. “If anything, the transition is associated with a significant positive effect on science achievement” (Carolan, 2013, pg. 379). Students who transitioned to a new building scored approximately one standard deviation higher than non-transitioning students on the science portion. This could be due to the increased academic expectations, the organization of teachers within the middle school, or the relationships formed between students and teachers. “It is contingent on the schools they attend to minimize other possible sources of stress” (Carolan, 2013, p. 380). If teachers and leaders in middle schools have the knowledge of how to educate this age group, they will know how to best organize the school to meet all students’ needs.

The most recent, well-known form of accountability for schools was the No Child Left Behind Act of 2001 (NCLB). Dove, Pearson, and Hooper (2010) recognized Arkansas schools were consistently not meeting the growth expectations of NCLB. Sixth graders achievement on the math and literacy portion of the Arkansas Benchmark 6 was examined. Three years’ worth of data was analyzed to determine which grade configuration was most beneficial for sixth graders. Schools were sorted into three groups: no transition for sixth graders, first year of transition for sixth graders, or second year of transition for sixth graders. “This study found that grade span configuration alone was not of statistical/practical significance” (Dove, Pearson, & Hooper, 2010, p. 292). No matter what the grade configuration was, the literacy scores did not increase much over the three-year period. The math data showed a different story. All three groups of schools showed tremendous growth.

One take-away from Dove, Pearson, and Hooper's (2010) research is that grade configuration is not the sole reason students are not succeeding. They acknowledge in Arkansas, between fourth and eighth grade, students' academics falter. Math scores potentially improved due to implementing a new program or instructional practice. This program was not abandoned after the first year, nor was it partially carried out. When schools focus on implementing ideas correctly and with fidelity, positive results can be achieved. Middle schools need to revisit the middle school philosophy to ensure they are carrying it out completely.

Interdisciplinary teaming has been advertised as part of the middle school concept. This is a structure put in place to create a small, team environment for students. It also allows teachers to collaborate to integrate content and discuss students' behaviors. Unfortunately, not all middle schools incorporate this into their frameworks. Warren and Payne (1997) set out to see what effect school organization, specifically how teachers were grouped, had on teacher efficacy and school climate. Three groups of teachers were surveyed: interdisciplinary teams with common planning time, interdisciplinary teams without common planning time, and teachers organized by content with no common planning time. A diverse sample of middle schools from Georgia and North Carolina were used for this study.

Multiple data points were used during this study. Two teacher questionnaires were used along with observations of team meetings. Teachers with common planning time were asked to reflect and provide evidence after each session if they were working toward their goals "to know their students better, to diagnose individual student needs, to coordinate content, to plan special events, and to avoid a sense of isolation from their colleagues" (Warren & Payne, 1997, p. 304). With these as goals, it is not surprising that teachers organized in interdisciplinary teams with common planning time indicate they felt confident handling student behavior, organizing

instruction, and shared values. Overall, teachers with common planning times on interdisciplinary teams had significantly higher personal efficacy. This led teachers to report a more positive school climate.

When interdisciplinary teams are enacted correctly, teachers have a structure in place that allows them to be “more responsive to the teaching needs of teachers” (Warren & Payne, 1997, p. 308). Having a common planning period during the school day provides teachers a dedicated time to ask questions of each other, problem solve instructional items, discuss student behaviors, and take risks while learning together. Collaboration between teachers provides a platform to build relationships as the team works to meet the needs of the students.

### **Opposed to Middle School Grade Configurations**

In the last decade, larger cities have started to transition back to K-8 schools. Baltimore, New York City, Philadelphia, Cincinnati, and Milwaukee all cite lack of student achievement as a reason for this transition. Schools have been reorganized to house kindergartners through eighth graders instead of kindergarten through fifth or sixth grade. Former middle schools have been converted into elementary buildings. Varieties of research studies have been done that support these large cities’ decisions. While most focus on lack of student achievement, others link grade configuration to increased bullying and behavior incidents.

Not long after studies were published about schools in New York City and Philadelphia, Stephanie Wren added to the literature over large city districts using a large urban city in the Midwest. Data from the Michigan Educational Assessment Program (MEAP) was used to find the “percentage of students who passed the MEAP in 2001” (Wren, 2003, p. 8-9) for each school building within the district. Wren’s review of data revealed students performed better in schools that served more grades. She proposed the transition from one school to another added increased

stress for students at a time when students are exposed to a “formal, impersonal environment” (Wren, 2003, p. 11) in either middle or high school.

At first glance, this study makes it seem like schools should configure in either K-6, 7-12 or K-8, 9-12 so there are more grade levels in a school building and fewer transitions for a student to make. Yet, when reading Wren’s (2003) analysis, she revealed transition programs utilized by schools led to “students with higher GPA’s and fewer high school dropouts” (2003, p. 11). Transition programs like these were designed to provide students with extra support. In large school districts, multiple elementaries may all go to one middle school. With the increased number of classmates, students may feel added pressure to fit in and make friends. The leaders of these schools recognize the importance of the second characteristic stated earlier from *This We Believe*, comprehensive guidance and support services meet the needs of young adolescents (Association for Middle Level Education, 2010). Transition programs were not only designed for students at these schools; they also were in place for parents and staff members. These schools were displaying the third characteristic most often missing in middle schools: “The school actively involves families in the education of their children” (Association for Middle Level Education, 2010).

Researchers Martin West and Guido Schwerdt (2012) set out to study if achievement on state math and reading tests dropped when students transitioned to a middle school in Florida. Using data from the Florida Department of Education, West and Guido were able to analyze individual students’ data over the course of nine years from third grade through ninth grade. They found a drop in achievement for students entering middle school in sixth grade. For seventh graders entering middle school, the drop in achievement was almost double that of the sixth

grade dip in achievement (West & Schwerdt, 2012). These equal about three and one half to seven months of expected learning.

Knowing many large cities were making changes to their middle schools, West and Schwerdt (2012) disaggregated the results into three groups based on location: large city, suburbia, and town/rural. While the results were more pronounced in cities, West and Schwerdt (2012) found transitioning to middle school in sixth or seventh grade still affected students in suburban and rural areas.

West and Schwerdt offered three insights into their findings. First, transitioning to a middle school during either sixth or seventh grade comes at a time when students are experiencing tremendous changes mentally and emotionally. These changes may make them more likely to be influenced by older students. As mentioned with Wren's research, schools need to have supports in place to ease the stress of moving to a new school. Schools that do not provide this are missing the opportunity to guide students and therefore are not displaying all the characteristics from This We Believe.

The second thought stemming from this study revolves around the number of students in each grade level within a school building. A school with kindergarten through eighth grade likely has less students in each grade level than a middle school with only two or three grade levels. Having fewer students in each grade level means sixth and seventh graders do not have as many older students to be influenced by. The opposite is true for students in a middle school according to West and Schwerdt (2012). Yet, within a middle school, teachers can be organized into interdisciplinary teams to create a smaller learning environment for students. This would align with the first characteristic many middle schools are missing, Organizational structures foster

purposeful learning and meaningful relationships (Association for Middle Level Education, 2010).

West and Schwerdt (2012) offered a third explanation for the drop in student achievement. Florida principals were given a survey during the 2003-04 school year. Several questions on the survey asked principals about the climate of their schools. Middle school principals rated the overall climate of their buildings lower than elementary principals, primarily in the areas of quality of teachers and safety at school. Principals emphasized that teachers did not seem to have all the knowledge and skills needed to instruct this age group. These points to the fourth missing characteristics of some middle schools. “Educators value young adolescents and are prepared to teach them” (Association for Middle Level Education, 2010). David Hough has done research on elemiddle schools. He suggested many middle schools have been staffed with teachers expecting to be promoted to high school positions as a possible explanation for why these teachers may be unprepared for middle school students. (Hough, 1995). Getting a certification to teach secondary English should require extensive training to understand both younger and older adolescents. When hiring teachers for any middle school position, leaders should investigate what knowledge an applicant has over the middle school student and how to best meet their educational needs.

Several other researchers searched for a connection between student achievement and grade configuration for fifth graders. Johnston, Jones, Simieou, Matthew, and Morgan (2013) used data from a three-year span from the Texas Assessment of Knowledge and Skills (TAKS) for fifth graders in an urban school district. Two grade configurations were analyzed during this study; PreK-5 and 5-6 buildings. Johnson et al., found fifth graders performed better on the TAKS if they were in the PreK-5 setting than in the 5-6 setting.

This finding is significant when schools are thinking about the configuration of each building. As various studies look at academic performance of different grade levels, the common theme of poor student performance is related back to the transition to a new building, structures, and environment. Johnson et al. even cautioned schools to reflect on how the middle school model had been implemented (2013). This was a broad reference to evaluate all 16 characteristics needed to have an effective middle school, but if transitions are cited as a cause of decreased achievement, schools need to focus on providing comprehensive guidance and support services to all students (Association for Middle Level Education, 2010). Unless a school building serves all grade levels, a student will experience at least one transition. The different buildings need to work together to assist students during the transition period. This “could involve repeated school visits and an orientation period for incoming students” (Jacob & Rockoff, 2012, p. 31). Teachers or guidance counselors could share important information pertaining to student needs that are not already documented by IEPs, 504s, or PEPs.

Not all grade configuration studies have focused on student achievement. One study completed by Cook, MacCoun, Muschkin, and Vigdor (2006) used behavior data from all public North Carolina schools. Schools are required to report severe behavior infractions to the state but may report other items at their discretion. For this study, only data for sixth graders were used to see if the configuration of the building led to increased behavior reports. Sixth grade students were divided into either an elementary or middle school category depending on the grade configuration of the building they attended. Cook et al. (2006) found sixth graders in middle school were more than two times as likely to have a behavior write-up as sixth graders in elementary schools.

Similar to Wren's study, these researchers cited the toll on students' emotional well-being when transitioning to middle school. They experience many changes during this time including physical developments and social adjustments. Cook et al., (2006) cite "more freedom" and lack of "close connection provided by having one primary teacher" (p. 12) as contributing factors to why sixth grade should be included in elementary versus middle school. These reasons make it imperative for middle schools to be organized to foster meaningful relationships, not only between students, but also to allow students to form connections with adults in the building.

### **Conclusion**

As multiple studies have shown, grade configuration is not the sole factor determining student achievement. When a school truly embeds all aspects of the middle school model, students' performance has been shown to increase. There is research supporting and opposing the middle school grade spans. A similarity between these studies is the caution to monitor the efficacy of implementing the middle school concept. Middle schools should not be closed due to lack of student achievement alone. The causes should be investigated keeping the 16 key characteristics for effective middle schools presented in *This We Believe* in mind. "We would be better off expending our energy creating a curriculum that intellectually engages and inspires young adolescents, pushing for organizing structures that support high-quality relationships, and finding better ways to reach out to families and communities" (Beane & Lipka, 2006, p. 30).

As Warren and Payne (1997) noted, teachers felt more competent when placed on an interdisciplinary team with a common planning time compared to their peers without a common planning time or organized by content. "Successful schools are much more than the result of hiring highly qualified teachers and letting them function in isolation in their separate classrooms" (Erb, 2006, p. 7). Collaboration has a positive effect on teachers which in turn can

have a positive effect on student learning. How teachers are organized can also impact what types of bonds students are able to make and how much they trust, respect, and interact with the adults in the building. Middle schools need to look at the organization of teachers and other structures within the school to ensure meaningful learning can occur while supporting healthy relationships.

Transitions and the size of grade levels within a middle school are two items used to oppose middle school grade spans. The National Forum to Accelerate Middle-Grades Reform (2008) stated schools should “create small learning communities and introduce advisories, teaming, and flexible scheduling” (p. 2). These items, as well as a transition plan, can provide support for students, teachers, and family members as students embark on this portion of their educational journey.

Playwright George Bernard Shaw stated, “He who can, does; he who cannot, teaches” (1903). If schools have this philosophy, the middle school concept will have a hard time taking root. Teachers should not be focused on only content, no matter what age group they are teaching. Teachers require different knowledge when working with various age groups. Instructional practices and behavior strategies that work for kindergartners do not necessarily work for a seventh grader. The specific knowledge required for middle school teachers revolves around the biological changes happening for this age group. When students feel supported and treated fairly by their teachers, they are more apt to be engaged in their learning. “Investing in increasing students’ attachment with school may be a more cost effective way to increase achievement than whole-scale reconfigurations” (Carolan & Chesky, 2012, p. 37).

## References

- Anfara, V. A. (2001). *The handbook of research in middle level education*. Greenwich, CT: Information Age Publishing.
- Association for Middle Level Education (2010). *This we believe: Keys to educating young adolescents* [PDF]. (2010, January 01). Westerville, OH. Retrieved March 8, 2017, from [http://www.amle.org/portals/0/pdf/twb/TWB\\_colorchart\\_Oct2013.pdf](http://www.amle.org/portals/0/pdf/twb/TWB_colorchart_Oct2013.pdf)
- Beane, J., & Lipka, R. (2006, April). Guess again will changing the grades save middle-level education?. *Educational Leadership*, 63(7), 26-30.
- Boyer, S. J., & Bishop, P. A. (2004). Young adolescent voices: Students' perceptions of interdisciplinary teaming. *RMLE Online: Research In Middle Level Education*, 28(1), 1-19.
- Carolan, B. V. (2013). School transitions and students' achievement in the fifth grade. *Journal Of Educational Research*, 106(5), 372-383. doi:10.1080/00220671.2012.736432
- Carolan, B. V., & Chesky, N. Z. (2012). The relationship among grade configuration, school attachment, and achievement. *Middle School Journal*, 43(4), 32-39. Retrieved from <https://ezproxy.nwciowa.edu/login?url=https://search.proquest.com/docview/1282264485?accountid=28306>
- Cook, P. J., MacCoun, R., Muschkin, C., Vigdor, J., & Duke Univ., D. P. (2006, July). Should sixth grade be in elementary or middle school? An analysis of grade configuration and student behavior. Working Papers Series. SAN06-03. *Terry Sanford Institute Of Public Policy*.
- Danielson, C. (2002). *Enhancing student achievement: A framework for school improvement*. Alexandria, VA: Association for Supervision and Curriculum Development.

- 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.
- Erb, T. O. (2006). Middle school models are working in many grade configurations to boost student performance. *American Secondary Education*, 34(3), 4-13.
- Hough, D. L. (1995). Elemiddle schools' for middle-grades reform. *Education Digest*, 60(9), 9
- Jacob, B. A., & Rockoff, J. E. (2012). Organizing schools to improve student achievement: start times, grade configurations, and teacher assignments. *Education Digest*, 77(8), 28-33.
- Johnson, D., Jones, L., Simieou, F., Matthew, K., & Morgan, B. (2013). 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), 31-38.
- Klump, J. (2011). What the research says (or doesn't say) about K-8 versus middle school grade configurations: Assessing the benefits of K-8 schools. Retrieved March 8, 2017, from <http://educationnorthwest.org/news/what-research-says-or-doesnt-say-about-k-8-versus-middle-school-grade-configurations>
- McEwin, C., Dickinson, T. S., & Jenkins, D. M. (2003). *America's middle schools in the new century: Status and progress*. Westerville, OH: National Middle School Association.
- Meichtry, Y. J. (1990, October 19). Teacher collaboration: The effects of interdisciplinary teaming on teacher interactions and classroom practices. Paper presented at Mid-Western Educational Research Association, Chicago, Illinois.
- Meyer, P. (2011). The middle school mess. *Education Next*, 11(1) Retrieved from

<https://ezproxy.nwciowa.edu/login?url=https://search.proquest.com/docview/1237831650?accountid=28306>

National Forum to Accelerate Middle-Grades Reform. (2008, July). Policy statement on grade configuration. Issue 5. *National Forum To Accelerate Middle-Grades Reform*.

Renchler, R. (2002). School organization: Grade span. Trends and Issues. Eugene, OR: ERIC Clearinghouse on Educational Management.

Schwartz, K. (2016, October 24). Why a school's master schedule is a powerful enabler of change. Retrieved November 01, 2016, from <https://ww2.kqed.org/mindshift/2016/10/24/why-a-schools-master-schedule-is-a-powerful-enabler-of-change/>

Shaw, G.B. (1903). *Man and Superman: A comedy and a philosophy*.

Sparks, S. D. (2016). Shorter grade spans are linked to more bullying, study finds. *Education Week*, 36(7), 10.

Spies, P. (1995, October). *Turning the tables: The growing need for high schools to follow the lead of middle level reform thru interdisciplinary teaming*. Paper presented at National Middle School Association Conference and Exhibit, New Orleans, LA.

Warren, L. L., & Payne, B. D. (1997, May/June). Impact of middle grades' organization on teacher efficacy and environmental perceptions. *The Journal of Educational Research*, 90(5), 301-308. Retrieved from <https://ezproxy.nwciowa.edu/login?url=https://search.proquest.com/docview/204193580?accountid=28306>

West, M., & Schwerdt, G. (2012). The middle school plunge. *Education Next*, 12(2) Retrieved from <https://ezproxy.nwciowa.edu/login?url=https://search.proquest.com/docview/1237824244?accountid=28306>

Williamson, R. (2012). Grade configuration. *Education Partnerships, Inc*. Retrieved

from <http://www.eric.ed.gov/contentdelivery/servlet/ERICServlet?accno=ED538738>

Wren, S. D. (2003). The effect of grade span configuration and school-to-school transition on student achievement. Retrieved from <http://www.eric.ed.gov/contentdelivery/servlet/ERICServlet?accno=ED479332>