

**Stillwater Public Schools**

**Review of Literature on Grade Configuration and  
School Transitions  
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## A Review of Literature on Grade Configuration and School Transitions

### Introduction

Beginning with the junior high school movement in the 1920s and continuing through the middle school movement in the 1960s, educational researchers have investigated the impact of school transitions and different grade configurations on a variety of student outcomes. In this report, we review the most salient empirical research to date on how school transitions and different grade configurations impact student achievement and behavior, as well as student psychological and social-emotional outcomes.

While our review of the literature is focused primarily on recent research, 2000 to present, we have broadened our sample to include several studies from the 1990s as well as one book from the 1980s because these studies were widely cited in the more recent literature. For example, several researchers cited the 1987 book by Simmons and Blyth titled, "Moving into adolescence: The impact of pubertal change and school context," so we included it in this review.

We employed strict criteria for choosing the articles to review in this report. More specifically, we only reviewed articles that appeared in peer-reviewed and reputable journals. We eliminated references that were opinion based, not empirically-based, or not peer reviewed and those with poor methodologies. We also excluded articles that appeared in journals that advocated for a specific grade configuration over another (ex. The Middle School Journal) or were produced by associations which advocate for a specific grade configuration. Overall, we reviewed 23 empirically-based peer reviewed articles, one dissertation, one peer-reviewed book, and one article that appeared in a peer-reviewed journal that articulated clearly the history of the different grade configuration movements for context [See Appendix for a summary of each of the articles reviewed in this report].

We found that researchers studying the impact of transitions and grade configurations used a variety of outcome measures. As noted above, researchers primarily focused on student achievement, behavior, and psychological and social-emotional outcomes of adolescents. More specifically, in this review, researchers used the following outcomes to test for significant differences pre- and post-transition and between students in different grade configurations:

- Academic Outcomes
  - Grade point average (G.P.A.)
  - Standardized state math achievement scores
  - Standardized state English/ reading achievement scores
  - Standardized state math and reading achievement composite scores
  - Standardized all subjects achievement composite scores
  - Number of failed subjects
  
- Psychological and Social-Emotional Outcomes
  - Self-concept of achievement

- Academic & social efficacy expectations
  - Planning for the future
  - Class preparation/ preparedness
  - Participation in extra-curricular activities
  - Independence
  - Social support
  - Likes school
  - Self image
  - Self-esteem
  - Locus of control
  - Daily hassles (pressures)
  - Feelings of anonymity
  - Suicidal thoughts
  - School safety
  - School threat
  - Violence
  - Feeling victimized
  - Overall school level substance abuse
  - Individual substance use
- Behavioral Outcomes
    - Number of absences
    - Suspension rates
    - Overall combined score for infractions
    - Combined low attendance and suspension scores
    - Drop-out rates
    - Attendance rates
    - Probation levels
    - Individual violent behavior

In addition to the above, a group of researchers also investigated differences in teachers' perceptions of these topics based on grade configuration:

- Teacher Perceptions Outcomes
  - Student discipline
  - Teacher self-efficacy
  - Student decision-making opportunities
  - Student violence
  - Student substance abuse
  - Student absenteeism

Furthermore, one research study looked at differences in these school characteristics across different grade configurations:

- School Characteristic Outcomes
  - Financial resources
  - Class size
  - Teacher quality

The following review is divided up into sections based on the kind of student outcomes used in the studies: academic, psychological and social-emotional, behavioral, and finally teacher perceptions and school characteristics. In each section, an overall summary of the literature is given, followed by a summary table which includes the data and findings.

## **The Impact of Transitions and Different Grade Configurations on STUDENT ACHIEVEMENT**

Fourteen of the 26 sources in this review focused on investigating the differences in student achievement outcomes between elementary, middle, and junior high school grade configurations and after school transitions. The majority of these studies found that elementary school students did significantly better than middle and junior high school students of the same age in G.P.A., standardized state math scores, standardized state reading scores, and state test composite scores. For example, Simmons and Blyth (1987) found that 7<sup>th</sup> graders in elementary school had significantly higher G.P.A.s than 7<sup>th</sup> graders who were in junior high schools. In addition, Poncelet & Metis Associates (2004) and Cook, et al. (2008) found that 6<sup>th</sup> graders in elementary school did significantly better on state standardized English/Reading exams than 6<sup>th</sup> graders in middle school.

Rockoff and Lockwood (2010), using a sophisticated projection model, found that 3<sup>rd</sup> graders slated to continue in elementary grade configurations versus middle school grade configurations would fare better on state math and reading achievement tests than students slated to attend a middle school. They also found that students projected to go to junior high school would fare better than those going to middle schools. Rockoff and Lockwood reported that the transition to middle school would be more harmful for low achieving students than high achieving students. Furthermore, Fink (2010) found that 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grade students in K-8 schools did significantly better on state math achievement tests than students in middle schools. These findings only held for special education students, however, on state reading scores. On the other hand, two research studies found no significant differences in student achievement outcomes between K-8 schools and middle schools. For example, one research study found no significant differences between 8<sup>th</sup> graders in K-8 versus 8<sup>th</sup> graders in middle school on G.P.A. or number of failed subjects (Weiss & Kipnes, 2006). The other study showed no significant differences in 6<sup>th</sup> grade state math or reading scores between elementary or middle school students (Dove et al, 2010).

Similar to what we found in the literature on grade configuration, the majority of research in this review investigating the impact of school transitions found that students transitioning to another school experience a significant drop in achievement related outcomes. For example, Gutman and Midgely (2000) found that when African American students transitioned to a new school from 5<sup>th</sup> to 6<sup>th</sup> grade, their G.P.A. significantly declined. In addition, Seidman et al. (1994) found that transitions at any age had an impact on student G.P.A., whether it was middle or junior high school. Despite these findings, there was one study which showed no significant differences in academic outcomes by transition year. Dove et al. (2010) found no significant differences between student math and reading scores pre- to post-transition for 6<sup>th</sup> graders.

Although the research reviewed in this report did not show significant advantages for a middle school model in terms of student academic achievement compared to a junior high model or a K-8 model, one study we reviewed investigated the differences in middle school achievement based on

the level of implementation of the Turning Points comprehensive school transformation model. Felner et al. (1997), in their research looking at level of middle school implementation found that students in high implementation schools scored a full standard deviation higher in math and even greater in reading scores than students in low implementation schools. These data suggest that if districts are planning on reconfiguring to middle schools, that they should monitor implementation of the criteria outlined in the Turning Points reforms closely. Unfortunately, these researchers did not compare high implementation schools with other grade configuration schools so it is unclear whether highly implemented models have any advantage over junior high school or K-8 configurations.

Because the research appears to favor a K-8 elementary model, two studies investigated the differences in student achievement between longstanding K-8 schools, newly reconfigured K-8 schools, and middle schools (Byrnes & Ruby, 2007; MacIver & MacIver, 2006). Research from both studies revealed that 8<sup>th</sup> grade students in established or old K-8 schools had significantly higher state math scores than 8<sup>th</sup> grade students in either new K-8 schools or middle schools. Neither study found significant differences in achievement between new K-8 schools and middle schools, although both studies showed slight advantages in new K-8 schools. These findings suggest that school districts looking to reconfigure to newly created K-8 school models may not experience significant academic gains, at least not right away.

More research is needed on the differences in culture, relationships, leadership, teaching practices, school size, grade size, demographic differences, and student populations in K-8 schools versus middle and junior high schools. For example, several researchers suggest that some of the differences found in academic achievement in the K-8 models may be due to differences in these other factors rather than on grade configuration per se. For example, Byrnes & Ruby (2007) hypothesized that the differences found in achievement may lie in the differences in the populations that middle schools and K-8 schools generally serve (e.g., Byrnes & Ruby, 2007). In addition, a few researchers found a distinct advantage in K-8 schools because cohort and class sizes were smaller in K-8 schools. Lee & Smith (1993) point out that grade size has been associated with decreased academic engagement and more stratification in achievement by SES. Consequently, because middle and junior high schools have higher enrollments per grade than K-8 schools, some of the academic disadvantages may be due to grade size rather than grade configuration. There is also some evidence showing that lower SES students tend to have a harder time academically in larger rather than smaller schools (e.g., Lee & Loeb, 1998; Alspaugh, 1998, Rockoff & Lockwood, 2010).

See Table 1 below for a summary of the research reviewed in this report on grade configuration, school transition, and academic achievement.

**TABLE 1: Summary of Research Illustrating Significant Differences in **STUDENT ACHIEVEMENT** between Different Grade Configurations & Time of Transition(s)**

<b>Data</b>	<b>Grades Compared</b>	<b>Sig Differences</b>	<b>No Sig Differences</b>	<b>Outcome(s)</b>
<b>Grade Point Average</b>	8 <sup>th</sup> graders in K-8 vs. Middle School		Weiss & Kipnes, 2006	
	African American 5 <sup>th</sup> grade vs. 6 <sup>th</sup> grade (Transition)	Gutman & Midgely, 2000		5 <sup>th</sup> > 6 <sup>th</sup>
	Pre-post 5 <sup>th</sup> transitioning to 6 <sup>th</sup> grade or pre-post 7 <sup>th</sup> transitioning to 8 <sup>th</sup> grade	Seidman, Allen, Aber, Mitchell, & Feinman, 1994		5 <sup>th</sup> > 6 <sup>th</sup> ; 7 <sup>th</sup> > 8 <sup>th</sup>
	7 <sup>th</sup> grades in K-8/9-12 vs. K-6/7-9/10-12	Simmons & Blyth, 1987		K-8/9-12 > K-6/7-9/10-12  Significant decrease in G.P.A. whenever a student transitions regardless of grade configuration
<b>Standardized State Math Achievement Score</b>	3 <sup>rd</sup> graders: K-5, K-6, K-8 Elementary vs. Middle School (projected)	Rockoff & Lockwood, 2010		Elementary > Middle School  Middle School < Junior High School
	General and Special ed. 6 <sup>th</sup> , 7 <sup>th</sup> , 8 <sup>th</sup> graders in K-8 vs. Middle School	Fink, LL., 2010		General ed. 6 <sup>th</sup> grade students in K-8 > Middle School
	6 <sup>th</sup> graders: no transition (P-6, K-6, and 1-6) vs. first year of transition (6th only, 6-7, 6-8) vs. second year of transition (5-6, 5-7, 5-8)		Dove, Pearson, & Hooper, 2010	
	6th graders in elementary vs. middle		Cook, MacCoun,	

	8 <sup>th</sup> graders in Old (longstanding) K-8 schools vs. New K-8 schools, vs. Middle Schools	Byrnes & Ruby, 2007	Old K-8 > New K-8 and Middle Schools
	6 <sup>th</sup> graders in K-8 vs. Middle School	Poncelet & Metis Associates, 2004	K-8 > Middle School
	8 <sup>th</sup> graders in Old (longstanding) K-8 vs. New K-8, vs. Middle School	Maclver & Maclver, 2006	Old K-8 > New K-8 and Middle Schools
<b>Standardized State English/ Reading Achievement Score</b>	3 <sup>rd</sup> graders: K-5, K-6, K-8 Elementary vs. Middle School (projected)	Rockoff & Lockwood, 2010	Elementary > Middle School
	6th graders in elementary vs. middle	Cook, MacCoun, Muschkin, & Vigdor, 2008	Middle School < Junior High School
	General and Special ed. 6 <sup>th</sup> , 7 <sup>th</sup> , 8 <sup>th</sup> graders in K-8 vs. Middle School	Fink, LL., 2010	Elementary > Middle School
	6 <sup>th</sup> graders: no transition (P-6, K-6, and 1-6) vs. first year of transition (6th only, 6-7, 6-8) vs. second year of transition (5-6, 5-7, 5-8)		Special ed. 6 <sup>th</sup> grade students in K-8 > Middle School
	8 <sup>th</sup> graders in Old (longstanding) K-8 schools vs. New K-8 schools, vs. Middle Schools	Byrnes & Ruby, 2007	Dove, Pearson, & Hooper, 2010  Old K-8 schools > New K-8 schools and Middle Schools  New K-8 schools > Middle Schools

	6 <sup>th</sup> graders in K-8 vs. Middle School	Poncelet & Metis Associates, 2004	K-8 > Middle School
	8 <sup>th</sup> graders in Elementary (K-8/K-9/3-8) vs. Middle (4-8/5-8/6-8) vs. Junior High (7-8/7-9) vs. Junior/Senior high (6-12/7-12/8-12)	Wihry, Coladarci, Meadow, 1992	Elementary > Middle, Junior, and Junior/Senior High  No differences found between Middle and Junior High
<b>Standardized Math and Reading Test Composite Score</b>	6 <sup>th</sup> , 7 <sup>th</sup> , 10 <sup>th</sup> , 11 <sup>th</sup> graders: Elementary (K-6, K-7) vs. Middle/Junior High (6-7, 7-8, 6-7, 7-8, 7-9) vs. Secondary (7-12, 8-12, 9-12) vs. Unit (K-12)	Franklin & Glasscock, 1998	6 <sup>th</sup> graders in elementary and K-12 > Middle school  7 <sup>th</sup> graders in elementary and K-12 > Middle school  10 <sup>th</sup> grade in K-12 > Secondary Schools  No significant differences in 11 <sup>th</sup> grade
<b>Standardized All Subjects Test Composite Score</b>	Group 1: 1 K-8 and 1 H.S. vs. Group 2: 1 K-5, 1 M.S., and 1 H.S. vs. Group 3: 3 K-5, 1 M.S., 1 H.S.  8 <sup>th</sup> graders in Elementary (K-8/K-9/3-8) vs. Middle (4-8/5-8/6-8) vs. Junior High (7-8/7-9) vs. Junior/Senior high (6-12/7-12/8-12)	Alspaugh, 1998a  Wihry, Coladarci, Meadow, 1992	Group 1 5 <sup>th</sup> graders in K-8, 9-12 model > Group 3, 5 <sup>th</sup> graders in K-5, M.S., H.S. model  Elementary > Middle, Junior, and Junior/Senior High  No differences found between Middle and Junior High
<b>Failed Subjects</b>	8 <sup>th</sup> graders in K-8 vs. Middle School	Weiss & Kipnes, 2006	

## **The Impact of Transitions and Different Grade Configurations on STUDENT PSYCHOLOGICAL AND SOCIAL-EMOTIONAL OUTCOMES**

Eight of the 26 sources reviewed for this report investigated differences in student psychological and social-emotional outcomes during periods of school transitions and between students in different grade configurations. Overall, the majority of research showed significant advantages in these areas for students in elementary and K-8 grade configurations versus students in middle school or junior high school grade configurations. For example, Weiss and Kipnes (2006) found that 8<sup>th</sup> grade students in K-8 schools had significantly higher self-esteem than 8<sup>th</sup> graders in middle schools. Similarly, Simmons and Blyth (1987) found that 6<sup>th</sup> and 7<sup>th</sup> graders in K-8 had significantly higher self-esteem than students in junior high schools. Furthermore, in a national study (using NELS 88 data) Eccles et al. (1991) found that students in K-8 schools had significantly higher self-concept of their achievement potential, reported significantly lower levels of school threat or violence, were significantly better prepared for class, were absent significantly less often, and reported significantly less substance abuse than students in either middle schools or junior high schools. Furthermore, this national study showed no significant differences in these factors for students in middle schools versus junior high schools.

There were a few areas where research showed no significant differences in grade configurations. For example, Simmons and Blyth (1987) found no significant differences between students in 6<sup>th</sup> through 10<sup>th</sup> grade K-8 and junior high school students in the areas of planning for the future or feeling independent. In addition, Weiss and Kipnes (2006) found no significant differences between 8<sup>th</sup> grade students in K-8 and middle schools in liking school or feeling safe. Lastly, Gunter and Bakken (2010) found no difference in 6<sup>th</sup> graders' self report in K-6 vs. 6-8 in substance use or violent behavior.

Similarly to what we found with academic achievement, the majority of research reviewed for this report showed that school transitions have a significantly negative impact on students' psychological and social emotional wellbeing. For example, Seidman et al. (1994) found that students reported having significantly lower self-esteem after they transitioned to a new school including transitions between 5<sup>th</sup> and 6<sup>th</sup> grade as well as between 6<sup>th</sup> and 7<sup>th</sup> grade. Students prior to transitioning to a new school in this study also reported significantly lower levels of threat or school violence and significantly fewer daily hassles or pressures. They also reported significantly higher participation in extra-curricular activities and reported feeling better prepared for class. Despite these results showing disadvantages for students who transition to either middle or junior high schools, there were some positive aspects to transitioning. In the same study Seidman et al. (1994) found that after transitioning to a new school, 6<sup>th</sup> and 8<sup>th</sup> graders reported significantly higher levels of social support and academic and social efficacy than 5<sup>th</sup> graders or 7<sup>th</sup> graders, respectively.

In Table 2 (below) we summarize the psychological and social emotional findings across the studies.

**TABLE 2: Summary of Research Illustrating Significant Differences in STUDENT PERCEPTIONS OF PSYCHOLOGICAL AND SOCIAL EMOTIONAL OUTCOMES between Different Grade Configurations & Time of Transition(s)**

<b>Data</b>	<b>Grades Compared</b>	<b>Sig Differences</b>	<b>No Sig Differences</b>	<b>Outcome(s)</b>
<b>Self-Concept of Achievement</b>	National Sample Student Survey (NELS 88) K-8 vs. 6-8, vs. 7-8, vs. 7-9	Eccles, Lord, & Midgley, 1991		K-8 > 6-8, 7-8, and 7-9  No sig differences found between middle and junior high
<b>Academic &amp; Social Efficacy Expectations</b>	Pre-post 5 <sup>th</sup> transitioning to 6 <sup>th</sup> grade or pre-post 7 <sup>th</sup> transitioning to 8 <sup>th</sup> grade	Seidman, Allen, Aber, Mitchell, & Feinman, 1994		5 <sup>th</sup> < 6 <sup>th</sup> ; 7 <sup>th</sup> < 8 <sup>th</sup>
<b>Planning for the Future</b>	6 <sup>th</sup> through 10 <sup>th</sup> grade students who went to K-8/9-12 vs. K-6/7-9/10-12		Simmons & Blyth, 1987	
<b>Class Preparation/ Preparedness</b>	Pre-post 5 <sup>th</sup> transitioning to 6 <sup>th</sup> grade or pre-post 7 <sup>th</sup> transitioning to 8 <sup>th</sup> grade	Seidman, Allen, Aber, Mitchell, & Feinman, 1994		5 <sup>th</sup> > 6 <sup>th</sup> ; 7 <sup>th</sup> > 8 <sup>th</sup>
	National Sample Student Survey (NELS 88) K-8 vs. 6-8, vs. 7-8, vs. 7-9	Eccles, Lord, & Midgley, 1991		K-8 > 6-8, 7-8, and 7-9  No sig differences found between middle and junior high
<b>Participation in Extra-Curricular Activities</b>	Pre-post 5 <sup>th</sup> transitioning to 6 <sup>th</sup> grade or pre-post 7 <sup>th</sup> transitioning to 8 <sup>th</sup> grade	Seidman, Allen, Aber, Mitchell, & Feinman, 1994		5 <sup>th</sup> > 6 <sup>th</sup> ; 7 <sup>th</sup> > 8 <sup>th</sup>
	10 <sup>th</sup> graders who went to K-8/9-12 vs. K-6/7-9/10-12	Simmons & Blyth, 1987		K-8/9-12 > K-6/7-9/10-12
<b>Independence</b>	6 <sup>th</sup> through 10 <sup>th</sup> grade students who went to K-8/9-12 vs. K-6/7-9/10-12		Simmons & Blyth, 1987	
<b>Social Support</b>	Pre-post 5 <sup>th</sup> transitioning to 6 <sup>th</sup> grade or pre-post 7 <sup>th</sup> transitioning to 8 <sup>th</sup> grade	Seidman, Allen, Aber, Mitchell, & Feinman, 1994		5 <sup>th</sup> < 6 <sup>th</sup> ; 7 <sup>th</sup> < 8 <sup>th</sup>

<b>Likes School</b>	8 <sup>th</sup> graders in K-8 vs. Middle School	Weiss & Kipnes, 2006	
<b>Self Image</b>	6 <sup>th</sup> and 7 <sup>th</sup> graders in K-8/9-12 vs. K-6/7-9/10-12	Simmons & Blyth, 1987	K-8/9-12 > K-6/7-9/10-12
<b>Self-Esteem</b>	8 <sup>th</sup> graders in K-8 vs. Middle School	Weiss & Kipnes, 2006	K-8 > Middle School
	Pre-post 5 <sup>th</sup> transitioning to 6 <sup>th</sup> grade or pre-post 7 <sup>th</sup> transitioning to 8 <sup>th</sup> grade	Seidman, Allen, Aber, Mitchell, & Feinman, 1994	5 <sup>th</sup> > 6 <sup>th</sup> ; 7 <sup>th</sup> > 8 <sup>th</sup>
	6 <sup>th</sup> and 7 <sup>th</sup> graders in K-8/9-12 vs. K-6/7-9/10-12	Simmons & Blyth, 1987	K-8/9-12 > K-6/7-9/10-12
<b>Locus of Control</b>	National Sample Student Survey (NELS 88) K-8 vs. 6-8, vs. 7-8, vs. 7-9	Eccles, Lord, & Midgley, 1991	K-8 > 6-8, 7-8, and 7-9  No sig differences found between middle and junior high
<b>Daily Hassles (Pressures)</b>	Pre-post 5 <sup>th</sup> transitioning to 6 <sup>th</sup> grade or pre-post 7 <sup>th</sup> transitioning to 8 <sup>th</sup> grade	Seidman, Allen, Aber, Mitchell, & Feinman, 1994	5 <sup>th</sup> < 6 <sup>th</sup> ; 7 <sup>th</sup> < 8 <sup>th</sup>
<b>Feelings of Anonymity</b>	6 <sup>th</sup> and 7 <sup>th</sup> graders in K-8/9-12 vs. K-6/7-9/10-12	Simmons & Blyth, 1987	K-8/9-12 < K-6/7-9/10-12
<b>Suicidal Thoughts</b>	6 <sup>th</sup> graders *self report* in K-6 vs. 6-8	Gunter, & Bakken, 2010	Elementary girls > Middle School girls
<b>School Safety</b>	8 <sup>th</sup> graders in K-8 vs. Middle School	Weiss & Kipnes, 2006	
<b>School Threat</b>	8 <sup>th</sup> graders in K-8 vs. Middle School	Weiss & Kipnes, 2006	K-8 < Middle School
<b>Violence</b>	National Sample Student Survey (NELS 88) K-8 vs. 6-8, vs. 7-8, vs. 7-9	Eccles, Lord, & Midgley, 1991	K-8 < 6-8, 7-8, and 7-9  No sig differences found between middle and junior high
	Pre-post survey of 8 <sup>th</sup> graders transitioning to 9 <sup>th</sup> grade in new school vs. 8 <sup>th</sup> graders staying in same school through 9 <sup>th</sup> grade	Weiss & Bearman, 2007	Non transitioning < transitioning
<b>Feeling victimized</b>	10th graders who went to K-8/9-12 vs. K-	Simmons & Blyth, 1987	K-8/9-12 > K-6/7-9/10-12

	6/7-9/10-12		
<b>Overall School Level Substance Abuse</b>	National Sample Student Survey (NELS 88) K-8 vs. 6-8, vs. 7-8, vs. 7-9	Eccles, Lord, & Midgley, 1991	K-8 < 6-8, 7-8, and 7-9  No sig differences found between middle and junior high
<b>Individual Substance Use</b>	6 <sup>th</sup> graders *self report* in K-6 vs. 6-8		Gunter, & Bakken, 2010
<b>Individual Violent Behavior</b>	6 <sup>th</sup> graders *self report* in K-6 vs. 6-8		Gunter, & Bakken, 2010

## **The Impact of Transitions and Different Grade Configurations on STUDENT BEHAVIOR**

Nine of the 26 studies we reviewed investigated the impact of different grade level configurations and school transitions on student behavior. Our analysis across studies showed mixed results. For example, Weiss and Kipnes (2006) and Rockoff and Lockwood (2010) found no significant differences in absentee rates between students in K-8 versus students in middle school. In addition, Simmons and Blyth (1987) found no significant differences between students in K-8 and junior high schools in suspension or probation rates. On the other hand, Cook et al. (2008) found that 6<sup>th</sup> graders in elementary school had significantly lower combined scores for infractions than 6<sup>th</sup> graders in middle school. Moreover, Fink (2010) found that general and special education students in 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grades in K-8 schools had significantly higher attendance rates than students in those grades who attend middle schools. Lastly, Franklin and Glasscock (1998) found that 6<sup>th</sup>, 7<sup>th</sup>, and 10<sup>th</sup> graders in elementary schools and K-12 school configurations had significantly lower combined attendance and suspension scores than students in middle or secondary school configurations.

One clear finding across the studies was that school transitions, overall, had negative effects on student behavior. For instance, Arcia (2007) found that 6<sup>th</sup> and 7<sup>th</sup> graders who transitioned to new schools had significantly higher rates of suspension after they transitioned. In addition, two studies from Alspaugh (1998a; 1998b) found that in districts with fewer transitions (K-8/9-12) student drop-out rates were significantly lower than in districts with K-5, middle school, and high school configurations. Thus, the more transitions in districts, the higher the rates of student drop-out.

Table 3 below gives a summary of the research findings on the impact of transitions and different grade configurations on student behavior.

**TABLE 3: Summary of Research Illustrating Significant Differences in STUDENT BEHAVIOR between Different Grade Configurations & Time of Transition(s)**

<b>Data</b>	<b>Grades Compared</b>	<b>Sig Differences</b>	<b>No Sig Differences</b>	<b>Outcome(s)</b>
<b>Absences</b>	8 <sup>th</sup> graders in K-8 vs. Middle School		Weiss & Kipnes, 2006	
	3 <sup>rd</sup> graders: K-5, K-6, K-8 Elementary vs. Middle School (projected)		Rockoff & Lockwood, 2010	
	National Sample Student Survey (NELS 88) K-8 vs. 6-8, vs. 7-8, vs. 7-9	Eccles, Lord, & Midgley, 1991		K-8 < 6-8, 7-8, and 7-9 No sig differences found between middle and junior high
<b>Suspension</b>	3 <sup>rd</sup> graders: K-5, K-6, K-8 Elementary vs. Middle School (projected)		Rockoff & Lockwood, 2010	
	6 <sup>th</sup> and 7 <sup>th</sup> graders in K-8 vs. Middle School (Transition)	Arcia, 2007		K-8 < Middle School
	7 <sup>th</sup> graders in K-8/9-12 vs. K-6/7-9/10-12		Simmons & Blyth, 1987	
<b>Overall combined score for Infractions</b>	6 <sup>th</sup> graders in elementary vs. middle (projected)	Cook, MacCoun, Muschkin, & Vigdor, 2008		Elementary < Middle School
<b>Combined low attendance and suspension score</b>	6 <sup>th</sup> , 7 <sup>th</sup> , 10 <sup>th</sup> , 11 <sup>th</sup> graders: Elementary (K-6, K-7) vs. Middle/Junior High (6-7, 7-8, 6-7, 7-8, 7-9) vs. Secondary (7-12, 8-12, 9-12) vs. Unit (K-12)	Franklin & Glasscock, 1998		6 <sup>th</sup> graders in elementary and K-12 < Middle school  7 <sup>th</sup> graders in elementary and K-12 < Middle school  10 <sup>th</sup> grade in K-12 < Secondary Schools
	<b>Drop-Out Rates</b>	Group 1: 1 K-8 and 1 H.S. vs. Group 2: 1 K-5, 1 M.S., and 1 H.S. vs. Group 3: 3 K-5, 1 M.S., 1 H.S.	Alspaugh, 1998a	H.S. students in Group 1 K-8, 9-12 model < H.S. students in Group 2 and Group 3 K-5,

	447 Districts with all different grade configurations	Alspaugh, 1998b	M.S. and H.S. model
<b>Attendance</b>	General and Special ed. 6 <sup>th</sup> , 7 <sup>th</sup> , 8 <sup>th</sup> graders in K-8 vs. Middle School	Fink, L.L., 2010	The more transitions = higher drop-out rates General and Special ed. 6 <sup>th</sup> grade students in K-8 > Middle School
<b>Probation</b>	7 <sup>th</sup> graders in K-8/9-12 vs. K-6/7-9/10-12	Simmons & Blyth, 1987	

**The Impact of Different Grade Configurations on  
TEACHER PERCEPTIONS OF STUDENTS AND OF SELF AND SCHOOL CHARACTERISTICS**

We found only two studies which investigated the differences between grade configurations on teachers' perceptions of their students and teacher self- efficacy. In addition, we only found one study which investigated the difference in school characteristics by grade configuration.

Regarding differences in teacher perceptions by grade configuration, Eccles, et al. (1991 and 1993) found that teachers in elementary schools reported significantly fewer student discipline issues, student violence, student substance abuse, and student absenteeism than teachers in middle and junior high schools. In addition, in the 1991 study, researchers found no significant differences in teachers' perceptions of student substance abuse, violence, or absentee rates between teachers in middle school or junior high school. Interestingly, math teachers in elementary school reported significantly higher self-efficacy than math teachers in middle schools.

Lastly, Rockoff and Lockwood (2010) found no significant differences between any of the grade configurations on school characteristics such as financial resources, class size, or teacher quality.

Tables 4 and 5 below show the summary of research results across the studies.

**TABLE 4: Summary of Research Illustrating Significant Differences in **TEACHER PERCEPTIONS OF STUDENTS AND SELF** between Different Grade Configurations & Time of Transition(s)**

<b>Data</b>	<b>Grades Compared</b>	<b>Sig Differences</b>	<b>No Sig Differences</b>	<b>Outcome(s)</b>
<b>Need for Student Discipline</b>	6th grade Elementary School Teachers vs. 7 <sup>th</sup> grade Middle School math Teachers	Eccles, Wigfield, Midgley, Reuman, Maclver, & Feldlaufer, 1993		Elementary < Middle School
<b>Teacher Self-efficacy</b>	6th grade Elementary School Teachers vs. 7 <sup>th</sup> grade Middle School math Teachers	Eccles, Wigfield, Midgley, Reuman, Maclver, & Feldlaufer, 1993		Elementary > Middle School
<b>Student Decision-Making Opportunities</b>	6th grade Elementary School Teachers vs. 7 <sup>th</sup> grade Middle School math Teachers	Eccles, Wigfield, Midgley, Reuman, Maclver, & Feldlaufer, 1993		Elementary > Middle School
<b>Student Violence</b>	National Sample Teacher Survey (NELS 88) K-8 vs. 6-8, vs. 7-8, vs. 7-9	Eccles, Lord, & Midgley, 1991		K-8 < 6-8, 7-8, and 7-9  No sig differences found between middle and junior high
<b>Student Substance Abuse</b>	National Sample Teacher Survey (NELS 88) K-8 vs. 6-8, vs. 7-8, vs. 7-9	Eccles, Lord, & Midgley, 1991		K-8 < 6-8, 7-8, and 7-9  No sig differences found between middle and junior high
<b>Student Absenteeism</b>	National Sample Teacher Survey (NELS 88) K-8 vs. 6-8, vs. 7-8, vs. 7-9	Eccles, Lord, & Midgley, 1991		K-8 < 6-8, 7-8, and 7-9  No sig differences found between middle and junior high

**TABLE 5: Summary of Research Illustrating Significant Differences in SCHOOL CHARACTERISTICS between Different Grade Configurations & Time of Transition(s)**

<b>Data</b>	<b>Grades Compared</b>	<b>Sig Differences</b>	<b>No Sig Differences</b>	<b>Outcome(s)</b>
<b>Financial Resources</b>	K-5, K-6, K-8 vs. Middle School		Rockoff & Lockwood, 2010	
<b>Class Size</b>	K-5, K-6, K-8 vs. Middle School		Rockoff & Lockwood, 2010	
<b>Teacher Quality</b>	K-5, K-6, K-8 vs. Middle School		Rockoff & Lockwood, 2010	

## Conclusion

In sum, the majority of studies in this review found that elementary school students did significantly better than middle and junior high school students of the same age in G.P.A., standardized state math scores, standardized state reading scores, and state test composite scores. In addition, most studies in this report showed that when students transition to another school, they experience a significant drop in academic related outcomes. Overall, the literature appears to favor a K-8 model over a middle school or a junior high school model.

Furthermore, the majority of research we reviewed showed significant advantages in the student psychological and social-emotional areas for students in elementary and K-8 grade configurations over students in middle school or junior high school grade configurations. Researchers also showed a significantly negative impact on students' psychological and social emotional wellbeing when students transitioned from one school to another. Analysis on the impact of different grade level configurations on student behavior showed mixed results. One clear finding across the studies, however, was that school transitions, overall, had negative effects on academic, psychological and social-emotional and student behavior outcomes. This suggests that the fewer transitions for students, the better.

Lastly, in the research we reviewed for this report, we found that teachers in elementary schools reported significantly fewer student discipline issues, student violence, student substance abuse, and student absenteeism than teachers in middle and junior high schools. There is no evidence suggesting there are significant differences between any of the grade configurations on school characteristics such as financial resources, class size, or teacher quality.

Despite these findings, authors of these studies caution that more research is needed to explore how school culture, student-teacher relationships, leadership, teaching practices, school size, cohort size, and demographic differences in student populations contribute to the differences seen in elementary school grade configurations versus middle and junior high school grade configurations. This is because several of the researchers suggested that some of the differences found in student academic achievement, psychological and social-emotional wellbeing, and behavior in the K-8 models may be due to differences in these other factors rather than grade configuration per se. What may be more important, then, is a school's organizational culture and teaching practices such as developmentally appropriate practices for early adolescents (Cuban, 1992; Eccles et al., 1993; Felner et al., 1997; Seidman et al., 1994), student-teacher relationships and support for learning (promoted in K-8 by smaller grade size; Eccles et al. 1993), heterogeneous grouping and high expectations for all students (less SES stratification in K-8 versus MS or JH; Lee & Smith, 1993; Lee & Loeb, 2000), and collaborative teacher relationships such as team teaching (Felner et al. 1997; Lee & Smith 1993). All of these practices may be implemented within any grade configuration.

## References

- Alspaugh, J. W. (1998a). Achievement loss associated with the transition to middle school and high school. *The Journal of Educational Research, 92*(1), 20-25.
- Alspaugh, J. W. (1998b). The relationship of school-to-school transitions and school size to high school dropout rates. *The High School Journal, 81*(3), 154-160.
- Arcia, E. (2007). A comparison of elementary/K-8 and middle schools' suspension rates. *Urban Education, 42*(5), 456-469.
- Beane, J. & Lipka, R. (2006). Guess again: Will changing the grades save middle-level education? *Educational Leadership, 67*(7), 26-30.
- 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
- Cook, P. J., MacCoun, R., Muschkin, C., & Vigdor, J. (2008). The negative impacts of starting middle school in sixth grade. *Journal of Policy Analysis and Management, 27*(1), 104-121.
- Cuban, L. (1992). What happens to reforms that last? The case of the junior high school. *American Educational Research Journal, 29*(2), 227-251.
- Dove, M. J., Pearson, C. L., & Hooper, H. (2010). Relationship between grade span configuration and academic achievement. *Journal of Advanced Academics, 21*(2), 272-298.
- Eccles, J.S., Lord, S., & Midgley, C. (1991). What are we doing to early adolescents? The impact of educational contexts on early adolescents. *American Journal of Education, 99*(4), 521- 542.
- Eccles, J. S., Wigfield, A., Midgley, C., Reuman, D., Maclver, D., & Feldlaufer, H. (1993). Negative effects of traditional middle schools on students' motivation. *The Elementary School Journal, 93*(5), 553-574.
- Felner, R. D., Jackson, A. W., Kasak, D., Mulhall, P., Brand, S., & Flowers, N. (1997). The impact of school reform for the middle years: Longitudinal study of a network engaged in Turning Points-based comprehensive school transformation. *The Phi Delta Kappan, 78*(7), 528-532,

541-550.

- Fink, L.L. (2010). A comparison of grade configuration on urban sixth to eighth grade students' outcomes in regular and special education. *Doctoral dissertation, University of Maryland, College Park.*
- Franklin, B. J., & Glascock, C. H. (1998). The relationship between grade configuration and student performance in rural schools. *Journal of Research in Rural Education, 14*, 149-153.
- Felner, R. D., Jackson, A. W., Kasak, D., Mulhall, P., Brand, S., & Flowers, N. (1997). The impact of school reform for the middle years: Longitudinal study of a network engaged in Turning Points-based comprehensive school transformation. *The Phi Delta Kappan, 78*(7), 528-532, 541-550.
- Gunter, W.D. & Bakken, N.W. (2010) Transitioning to middle school in the sixth grade: A hierarchical Linear modeling (HLM) analysis of substance use, violence, and suicidal thoughts. *The Journal of Early Adolescence, 30*(6), 895-915.
- Gutman, L.M., & Midgely, C. (2000). The role of protective factors in supporting the academic achievement of poor African American students during the middle school transition. *Journal of Youth and Adolescence, 29*(2), 223-249
- Lee, V. E., & Loeb, S. (2000). School size in Chicago elementary schools: Effects on teachers' attitudes and students' achievement. *American Educational Research Journal, 37*(1), 3-31.
- Lee, V. E., & Smith, J. B. (1993). Effects of school restructuring on the achievement and engagement of middle-grade students. *Sociology of Education, 66*(3), 164-187.
- Mac Iver, M. A., & Mac Iver, D. J. (2006). Which bets paid off? Early findings on the impact of private management and K-8 conversion reforms on the achievement of Philadelphia students. *Review of Policy Research, 23*(5), 1077-1093.
- Poncelet, P., & Metis Associates. (2004). Restructuring schools in Cleveland for the social, emotional,

and intellectual development of early adolescents. *Journal of Education for Students Placed at Risk, 9(2)*, 81-96.

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

Seidman, E., Allen, L., Aber, J.L., Mitchell, C., Feinman, J. (1994). The impact of school transitions on the self-system and perceived social context of poor urban youth. *Child Development, 65*, 507-522.

Weiss, C. C., & Bearman, P. S. (2007). Fresh starts: Reinvestigating the effects of the transition to high school on student outcomes. *American Journal of Education, 113*, 395-421.

Simmons, R. G., & Blyth, D. A. (1987). *Moving into adolescence: The impact of pubertal change and school context*. New York: Aldine de Gruyter.

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

Wihry, D. F., Coladarci, T., & Meadow, C. (1992). Grade span and eighth-grade academic achievement: Evidence from a predominantly rural state. *Journal of Research in Rural Education, 8(2)*, 58-70

## Appendix

### Summary of Each Study Cited in this Review

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

Research Question: What is the relationship between grade span configuration and achievement on the state standardized test for 6<sup>th</sup> graders in Arkansas?

- This study uses a large sample rather than small case study samples that are often used to evaluate the effect of grade span

Research Design:

- Sample included 281 schools in Arkansas with a 6<sup>th</sup> grade – 20 different grade span configurations among them
- “Ex post facto repeated measures design”, using one-between two-within ANOVA
- Outcome variables: math and literacy (percent proficient + advanced) scores over 3 years
- Predictor variable: grade span configuration – levels:
  - no transition – included P-6, K-6, and 1-6
  - first year of transition – 6<sup>th</sup> only, 6-7, 6-8
  - second year of transition – 5-6, 5-7, 5-8
  - \*Were any K-8 schools included?
- No differentiation by student subgroups – school level data
- Literacy includes both reading and writing

Key Findings:

- No significant differences in achievement scores by grade configuration ( $p = .06$ )
  - While the differences were not significant, 6<sup>th</sup> graders in their first year of transition scored the lowest in both math and literacy, and second year vs. no transition at all were pretty similar
- Math achievement increased significantly across the 3 years but literacy did not

Important Findings from Introduction:

- The larger the grade span in the school, the better the achievement outcomes, both for students in the middle and high grades (many references, p. 278 and 281)

- The later the transition to high school, the higher the dropout rate (Brown, 2004 (rural schools only); Howley, 2002; Renchler, 2002)
- One interesting study suggested that transitioning after 4<sup>th</sup> grade results in better achievement than transitioning after 5<sup>th</sup> (middle school model), but found no difference between the middle school and junior high models (Johnson, 2002)

**Citation: Cook, P. J., MacCoun, R., Muschkin, C., & Vigdor, J. (2008). The negative impacts of starting middle school in sixth grade. *Journal of Policy Analysis and Management*, 27(1), 104-121.**

Research Question: What is the difference in behavioral outcomes between 6<sup>th</sup> graders who attend an elementary school vs. a middle school in North Carolina?

- End-of-grade achievement exams were also studied but of secondary interest

Research Design:

- Sample included 99 public school districts in NC
- Used a propensity score sample-trimming procedure to account for the fact that the likelihood of 6<sup>th</sup> grade being in an elementary school was not uniform across districts
  - Ended up with 243 schools and about 45,000 6<sup>th</sup> graders
  - Only 11% of the students were in elementary schools
- Conducted a “pseudo-longitudinal analysis” to project the infractions level for students before and after their 6<sup>th</sup> grade year
  - Infractions data were only available for the 2000-2001 school year, but the researchers had information about what schools the students attended and would later attend. So, they looked at the infractions for older and younger kids in the 00-01 school year and used this information to predict the probability of infractions for their sample students in grades 4-9
- Also conducted a pseudo-longitudinal analysis for EOG tests across grades 4-8

Key Findings:

- Both the incidence and prevalence of all types of disciplinary infractions among 6<sup>th</sup> graders were higher in middle schools than in elementary schools
  - Furthermore, the middle school students in this sample were of higher SES and maternal education level
  - The odds of having a behavioral infraction increase by a factor of 2.2 if you go to middle school instead of elementary (3.8 for a drug infraction)

- Results of the pseudo-longitudinal analysis suggest that the 6<sup>th</sup> graders in middle school actually had fewer infractions than their elementary counterparts in 4<sup>th</sup> and 5<sup>th</sup> grade, but that the increase in middle-school-6<sup>th</sup> graders' infractions remains elevated through 9<sup>th</sup>.
- Results of the achievement test analysis show that in 4<sup>th</sup> and 5<sup>th</sup> grade, the kids who would eventually attend 6<sup>th</sup> in a middle school had better math and reading scores than the kids who would eventually attend 6<sup>th</sup> in elementary. But by 6<sup>th</sup> grade and persisting through 8<sup>th</sup>, the MS 6<sup>th</sup> group was scoring lower than the EL 6<sup>th</sup> group in both subjects, sometimes significantly in reading.

#### Conclusion:

- Attending 6<sup>th</sup> grade in a middle school increases behavior infractions and decreases test scores
  - Authors acknowledge potential differences in reporting between EL and MS but note that in their pseudo-longitudinal analysis, all students were in middle schools by 7<sup>th</sup> grade and they still found differences
- K-6 makes sense, but the authors are not sure about K-8 because exposing younger kids to deviant adolescents may be harmful

#### Study limitations:

- The authors noted that “seventh grade students entering middle school for the first time should also exhibit a spike in behavioral problems (p. 108)”, but that was all they said about moving the transition to one year later. Unless the authors are proposing never to have a transition at all, it seems they are ignoring the possibility that transitions in themselves cause problems, not just more freedom and more deviant peers. A better study, in our opinion, would examine behavior and achievement of students who transitioned at 6<sup>th</sup> and at 7<sup>th</sup>, ideally across the 5<sup>th</sup>-8<sup>th</sup> grade years.

**Citation: Franklin, B. J., & Glascock, C. H. (1998). The relationship between grade configuration and student performance in rural schools. *Journal of Research in Rural Education, 14*, 149-153.**

Research Question: Do student behavior and achievement in grades 6, 7, 10, and 11 vary based on school grade configuration?

#### Research Design:

- Sample includes schools randomly chosen within grade configuration group from all Louisiana schools in 1993-94
- Definitions of grade configuration levels in this study:
  - Elementary: K-6, K-7

- Middle/Junior High: 6-7, 6-8, 6-9, 7-8, 7-9 (not interested in the differences between middle and jh in this study)
- Secondary: 7-12, 8-12, 9-12
- Unit: K-12
- Used ANOVA with post hoc Tukey tests to compare schools within the same grade but different grade configurations on achievement and behavior.

Key Findings:

- Grade 6: students in elementary and unit schools performed better in both achievement and behavior than did 6<sup>th</sup> graders in middle schools
- Grade 7: similar – students in elementary and unit schools performed better in both achievement and behavior than did 7<sup>th</sup> graders in middle schools
- Grade 10: students in unit schools performed better in both variables than 10<sup>th</sup> graders in secondary schools
- Grade 11: no significant differences here – unit and secondary 11<sup>th</sup> graders were similar on achievement and behavior

Study limitations:

- 11<sup>th</sup> graders were tested in different academic subjects than the other grades
- Title says rural schools, but the sample was drawn from the population of all LA schools
- An initial analysis revealed no interaction effects between grade configuration and the control variables of school size and SES, though I'm not sure if this is an adequate control procedure.

**Citation: Fink, L.L. (2010). A comparison of grade configuration on urban sixth to eighth grade students' outcomes in regular and special education. *Doctoral dissertation, University of Maryland, College Park***

Study Purpose/Research Question: Examined the effect of grade configuration in the middle grade years on selected educational outcomes in an urban school system across three grades. Addressed four research questions, two regarding achievement and two regarding attendance.

1. What is the effect of school grade configuration on student math and reading achievement (in general education 6<sup>th</sup>-8<sup>th</sup> grade) on the Maryland State Assessment (MSA)s.
2. What is the effect of school grade configuration on student math and reading achievement (in special education 6<sup>th</sup>-8<sup>th</sup> grade) as measured by the MSA?
3. What is the effect of school grade configuration on attendance in 6-8<sup>th</sup> grade general education classrooms?

4. What is the effect of school configuration on attendance in 6<sup>th</sup>-8<sup>th</sup> grade special education classrooms?

Research Design: Study was conducted in the Baltimore City Schools, where the author followed a cohort of fifth grade students through the middle school years. The author used a quasi-experimental design as students were not randomly assigned to configuration conditions. Student academic outcomes (Maryland State Assessment in math and reading) and attendance in middle school were compared to K-8<sup>th</sup> grade by their performance on outcome measures in 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grade. The study included 5,312 students (28% in K-8; 72% in middle school).

The author examined the data using hierarchical linear modeling (students nested into classrooms). The outcome variables were predicted by several variables including demographic information and baseline student achievement/attendance data. The independent variable of interest was school configuration (K-8 vs. middle school).

Key Findings:

- Note: The findings examine the effect of school configuration on achievement and attendance after accounting for individual characteristics, demographic information, and prior school achievement.
- Reading Achievement – Special education students attending K-8 schools had significantly higher achievement gains on the 6<sup>th</sup> grade reading MSA than their peers in middle schools.
- Math achievement – Regular education students in the 6<sup>th</sup> grade who attended K-8 schools had significantly higher gains on the MSA. No other comparisons were statistically significant.
- Attendance – Both general and special education 6<sup>th</sup> grade students in K-8 schools had significantly higher attendance than their peers in middle schools. The associated coefficients were very small. There were no statistically significant differences between K-8 and middle schools in 7<sup>th</sup> and 8<sup>th</sup> grade.

**Citation: Gutman, L.M., & Midgely, C. (2000). The role of protective factors in supporting the academic achievement of poor African American students during the middle school transition. *Journal of Youth and Adolescence*, 29(2), 223-249**

Information from Lit Review:

- With multiple risk factors, the transition to middle school can be troubling for minority youth.
- Transition to middle school is often characterized by a move to a larger, more complex environment, less emotional support from teachers, and decreased contact between students-teachers, and students-peers.
- Most students are forced to adjust to a new school environment that is characterized by harder grading, more social comparison, and increased competition.

Study Purpose/Research Question: Authors investigated psychological, family, and school factors that support the academic achievement of poor African American students during the transition from elementary to middle level schools.

- Specifically the authors examined the main effects of academic self-efficacy, parental involvement, perceived teacher support, and feelings of school belonging.
- They also examined the interactions between psychological and family factors, psychological and social support factors, and family and school factors.

Research Design: Authors examined data from a larger longitudinal study in Michigan. The smaller sample used data from families from one school district (7 elementary schools, 4 middle schools). After using several selection variables 69 families were included in the final sample. ANOVA and hierarchical linear regression was used to examine the main effects and interaction effects of the variables.

Authors compared students GPA from 5<sup>th</sup> grade to 6<sup>th</sup> grade while controlling for previous levels of academic achievement.

Key Findings:

- On average students experienced a significant decline in GPA across the transition to middle school.
- Parental involvement, perceived teacher support, and school belonging did not significantly predict grade point average across the transition.
- But, students with high levels of involvement and perceived teacher support had higher grade point averages across the transition than peers with high levels in one or zero of these factors.
- Academic self-efficacy was positively associated with GPA across the transition. The interactions of self efficacy and the other variables were not significant.
- Parental involvement, school belonging, and perceived teacher support were not associated with students' grade point average across the transition to middle school.

Study Limitations:

- Small sample size – limited power to detect effects of predictors
- Collected information from parents during middle of 6<sup>th</sup> grade year, so they cannot make inferences if continued parent involvement affected students academic achievement after 6<sup>th</sup> grade.

**Citation: Cuban, L. (1992). What happens to reforms that last? The case of the junior high school. *American Educational Research Journal*, 29(2), 227-251.**

Thesis: The junior high is a school reform that has persisted for many years (1920s-90s) but that has become watered down – intended as a fundamental (major) reform that in practice acts more as an incremental (minor) reform. Moreover, junior highs/middle schools have generally become little high schools and have not succeeded in creating the proposed unique environment

Purpose: Background info on the history of the junior high and middle school movements

Multiple Agendas – No Cohesive Mission

- Historical context: early 1900s, 1913, 1918: NEA’s Commission on the Reorganization of Secondary Education
  - Elementary for ages 6-12, Secondary for 12-18, with secondary divided by junior and senior
- Keep 12 year olds off the street, prevent dropout after 8<sup>th</sup> grade
- Provide prevocational exploration and choices, provide more semi-skilled labor for industry
- Eliminate the “waste” associated with overage retained students and repetitive content in K-8 schools
- Adolescence: late 1800s – general movement toward the “whole child”, “fitting school to the child”
  - G. Stanley Hall’s 1904 book on Adolescence (developmental perspective)
  - The first 3 years of secondary schooling (grades 7, 8, 9) should be devoted to exploration of personal aptitude and work interests
- Reform schools – change elementary and secondary curriculum, more child-centered
- Alleviate overcrowding

The Spread of Junior High: By the 1930s, junior highs had anywhere from 2-4 grades in them, and senior highs had as many as 6 grades, divided by 3-3 or 2-4

Criticisms (by the 1930s)

- Depart- (or compart-) -mentalization (switching classes, teachers teach only one subject and don’t communicate, no interdisciplinary activities)
- Too academically centered (not enough vocational material)
- Improper teacher training (not enough focus on kids’ development)
- Teaching/structure too similar to high school (textbook-focused, teacher-directed, 40-50 min periods)
- Tracking (by ability and achievement)
- The exploration of personal interests is limited to home ec, shop class, and clubs

## Changes Under the Junior High Model

- Small, incremental changes – not the sweeping reforms originally intended
- Fusion of similar disciplines into core courses (e.g., spelling/writing/reading = English, geography/sociology/history = social studies)
- More electives (fine and practical arts)
- Guidance classes
- Increase in number of curricula, course options (often limited to 9th)
- Longer class periods
- A few exemplary schools included “correlated” classes – blocks of time where English and social studies (e.g.) could be combined to foster inquiry and HOT
- Ability grouping nearly doubled from 1954-1964 (some evidence for unequal instruction)

## Actual Resulting Functions of the Junior High:

- More varied curriculum
- Adaptation to the needs of adolescents
- Less dropout after elementary school

## The Middle Schools Movement

- 1960s – educators and reformers displeased with the “little high schools” adolescents attended
- Needed a place more suited to the changes and diversity within 10-14 year olds
- In 1967, more than half of district administrators surveyed said they reorganized to middle school to alleviate overcrowding
- “The dominant reason for the middle school given by administrators in 1977 was to design a program geared specifically to the social, psychological, moral, and intellectual needs of early adolescents. The school's organization, curriculum, and instruction were to help boys and girls make a smooth transition from elementary to high school while building their self-esteem and nourishing their unexplored talents. Such schools, according to partisans, would be organized to permit students to pick subjects usually unavailable to them in elementary school. They would attend classes for an hour or longer where content from two or more subjects was integrated, work with teams of teachers rather than moving from subject to subject, and receive guidance from a teacher in a nonclassroom setting. Instruction by state-certified teachers, trained to be aware of the special needs of this cohort, would be delivered in a mix of large group, small group, and individual settings. Instruction would encourage academic achievement, decision-making skills, leadership, and thinking for one's self” (p. 243-4).

- “exploratory courses or minicourses for all students in all grades, an eight-period day, interdisciplinary teams, and cooperative learning”

#### Actual Resulting Middle Schools

- Research (1987) suggests little to no higher-order thinking or interdisciplinary instruction
- “Only about 10 percent of the schools that contain grade 7 do all three of the following: use interdisciplinary teams, provide at least two hours per week of common planning time for team members, and use more than a little of that planning time for coordinating activities that strengthen the effects of interdisciplinary teams.” (p. 246)
- Ended up a lot like junior highs – influence of high school bears down on the lower grades

#### Why Did This Happen?

- Organizations over time become more alike than different
- Schools have ambiguous/uncertain goals, imperfect “technologies” (teaching practices), uncertain outcomes, and are at the mercy of external forces (taxpayers, student enrollment options); so they need to please the public by looking professional and legitimate, and they mimic success they see in other successful institutions – in this case, the high school
- Why didn’t junior/middle schools choose to model themselves after elementary schools which seem to be doing everything reformers were hoping for?
  - History again: in the early 1900s, high school was a place for the elite – high school was something to both “emulate and anticipate”

**Citation: Lee, V. E., & Smith, J. B. (1993). Effects of school restructuring on the achievement and engagement of middle-grade students. *Sociology of Education*, 66(3), 164-187.**

Research Question: Does attending a restructured school increase levels of achievement and engagement, decrease failure and dropout, and distribute positive outcomes more equitably?

#### Research Design

- Sample from NELS:88
- Measures of school restructuring focus on:
  - Reduced or eliminated departmental structure – less departmentalization and exposure to *fewer* teachers each day earns a higher score
  - Heterogeneously grouped instruction – principal reports
  - Team teaching – yes/no principal reports
  - General index of restructuring – dummy-coded, not sure who is reporting/observing
- Achievement: reading and math tests

- Engagement
  - Academic: prepared for class, time on homework, feelings of boredom in school
  - At risk behaviors: discipline/behaviors, fights, absence/tardy, warnings to parents, being viewed as a troublemaker by others
- Controlled for:
  - Student level: SES, minority, gender, academic background (proxy for ability)
  - School level: average SES, minority concentration, sector, # students in 8<sup>th</sup> grade, standard dev of achievement (measure of academic homogeneity)
- Used ANOVA for prelim analyses and HLM for main analyses
  - Used the slope of SES for each outcome as a measure of the distribution of equity of each of the outcomes

#### Key Findings (results section is long and complex)

- Overall: while all results are modest after controlling for the demographic variables, there is some evidence that decreasing departmentalization, increasing team teaching, and reducing grade size may lead to improved achievement, academic engagement, and equity of positive outcomes across SES, but is not associated with a decrease in at-risk behaviors.
- As expected, student outcomes and school restructuring were related to student and within-school background/demographic variation, so these were controlled for in the multilevel analyses
- *Achievement*: Reduced departmentalization had the greatest effect on achievement and the least SES differentiation of the elements of school restructuring
- *Academic Engagement*: Team teaching was associated with less SES differentiation, and the general restructuring index was modestly correlated with increased engagement
- *At-risk Behaviors*: schools with less rigid departmentalization and more team teaching led to more at-risk behavior and more SES differentiation – not in the hypothesized direction!
  - This was the least reliable measure and had the least between-school variation
- *Grade size*: Larger grades associated with decreased academic engagement and more stratification in achievement by SES
  - \*Middles and junior highs tend to have higher enrollment per grade than K-8, which may have negative effects on engagement and equity of achievement
- \*As suggested by the absence of correlations with the general restructuring index, restructuring seems to benefit students more when a few important elements are implemented deeply, rather than adding more shallow elements

#### Lit Review

- Two structural models of school social and instructional organization

- Rational-bureaucratic: affectively neutral interactions between teachers and students, rule-governed, differentiated by status
- Communal: informal social relationships, minimizes differentiation, shared values, emphasizes discretion among individuals
- Consequences of the shift from communal → rational-bureaucratic:
  - Alienation: normlessness, estrangement from teachers and principals, less commitment to rules
  - Differentiated curriculum (ability grouping): leads to social stratification of academic outcomes, lower quality instruction in vocational/lower-level track
- Two focus areas of school restructuring:
  - Changing how instruction is organized in classrooms – who is taught what?
  - Changing how teachers are organized to deliver instruction – who does what teaching?
- Emphases of restructuring:
  - Heterogeneous grouping (collaborative learning)
  - Reducing departmentalization
    - Mixed evidence of effects in MS: increases teacher collaboration but may reduce teacher content area expertise
  - Increasing teacher collaboration: interdisciplinary teaming
    - Reduces discipline problems, fosters sense of community, increases academic engagement, clarifies learning goals, increases achievement
    - May increase teacher self-efficacy and satisfaction
    - Requires ongoing administrative support
  - School size and grade size
    - Larger schools offer more academic opportunities, but more social stratification of achievement and alienation
    - Grade size varies as a function of number of grades in the school

**Citation: Alspaugh, J. W. (1998a). Achievement loss associated with the transition to middle school and high school. *The Journal of Educational Research*, 92(1), 20-25.**

Question/Purpose: To further examine the relationship between achievement loss at the transitions to middle school and high school, and to explore the relationship between transitions and high school dropout rates

Research Design:

- Sample: three groups of 16 school districts by grade configuration structure
  - Group one: K-8 elementary and 9-12 HS
  - Group two: one elementary, one middle, and one high (linear)
  - Group three: two or three elementary, one middle, and one high (pyramid)

- Used ANOVA

#### Key Findings:

- From grades 5-6, students in K-8 schools experienced an achievement gain, while other students experienced a transition loss; the loss was larger (and only statistically significant) for the pyramid group
- Students in all schools experienced a transition from 8<sup>th</sup>- 9<sup>th</sup> grade, and all experienced an overall transition loss in achievement – no statistical difference between them
  - Analysis of specific subjects shows K-8 made a gain in math
- HS dropout rates were significantly higher in districts with two transitions (both middle school groups) than in the district with one transition (K-8 group)

#### Study limitations:

- The author notes in the summary that “students attending middle schools experienced a greater achievement loss in the transition to high school than did the students making the transition from a K-8 elementary school”, but this difference was not statistically significant overall – only at a class subject-specific level
- There were no urban schools included “in the comparison groups”
- Enrollment per grade is much lower in the K-8 schools, but % FRL was higher – I don’t think the author controlled for any of these things in his analyses

**Citation: Alspaugh, J. W. (1998b). The relationship of school-to-school transitions and school size to high school dropout rates. *The High School Journal*, 81(3), 154-160.**

Purpose/Question: What is the relationship between number of transitions, grade level of the last transition to high school, and K-12 enrollment with high school dropout rates?

#### Research Design:

- 447 districts in MO
- Measures
  - Dropout rate was a 5 year average of the annual dropout rate – “the number of students leaving grades 9-12 without a transcript request divided by the enrollment count for grades 9-12, expressed as a percent”
  - SES measured by % receiving FRL
  - “enrollment per attendance center” measured by total district enrollment divided by # of schools, I think – an average across all school levels

- ANOVA and hierarchical multiple regression

#### Key Findings:

- The number of transitions in a district is linked to demographic factors (enrollment and SES) and dropout rate; the more transitions, the higher the SES (generally), the higher the enrollment, and the higher the dropout rate.
- Similarly, increasing grade of last transition is correlated with higher SES, higher enrollment, and higher dropout rates (the grades of last transition ranged from 6-10)
  - The correlation of these two predictors (# of transitions and grade of last transition) is .73 – strong (makes sense, but how do we know which characteristic is more important?)
- Average enrollment was the strongest predictor of dropout rates, then number of transitions – but including all variables in the model explains the most variation (%FRL, enrollment, # transitions, grade last transition)

#### Literature Review:

- Participation in high-profile extracurriculars keeps kids in school; this type of participation decreases in large schools. Large schools are associated with lower attendance and higher dropout rates.
- The author equates normative school transitions with discontinuous transfers – I am not sure this is accurate
- \*As school size increases, the negative correlation between low SES and high school dropout is magnified
- When enrollment increases, schools tend to add another transition, now setting two adverse variables in place

**Citation: Eccles, J. S., Wigfield, A., Midgley, C., Reuman, D., Maclver, D., & Feldlaufer, H. (1993). Negative effects of traditional middle schools on students' motivation. *The Elementary School Journal*, 93(5), 553-574.**

Purpose/Question: How do changes in school and classroom environments across school transitions affect adolescents' achievement-related beliefs and behaviors?

#### Research Design:

##### *Sample*

- Part of the Michigan Adolescence Study, conducted in 4 waves over 2 years
- Student and teacher samples from 12 school districts in mid and low SES communities
  - Focused on math teachers – area of greatest decline in motivation

## Measures

- Questionnaires:
  - Students: measured beliefs regarding all subjects, perceptions of math class environment, etc.;
  - Teachers: measured trust/respect of students, beliefs about control and discipline, (growth mindset), etc.
- Classroom environment measures (fairness, competition, discipline, autonomy, teaching practices, student interaction): student, teacher, and observer report
- Student/teacher classroom decision-making – same questions to both Ss and Ts

## Method

- \*\*\*Based on three initial variables, students were divided into four groups
  - Initial variables: T efficacy, T-S relationship, between-class ability grouping
  - Four S groups for each of the above variables:
    - positive environments in 6<sup>th</sup> and 7<sup>th</sup>
    - negative environments in 6<sup>th</sup> and 7<sup>th</sup>
    - positive in 6<sup>th</sup>, negative in 7<sup>th</sup>
    - negative in 6<sup>th</sup>, positive in 7<sup>th</sup>
- Used ANOVA and repeated measures ANOVA for most analyses

## Key Findings:

- Major Take-Home: Classroom environments, not just school transitions in themselves, make a difference for student motivation and achievement. Students with high-efficacy, supportive teachers in heterogeneously grouped math classes reported higher self-efficacy and value of math *after* the junior high transition, and ultimately performed better in math and had fewer behavior problems in 10<sup>th</sup> grade. These findings vary by predictor so for specifics check out the details below.
- \*\*\*Interesting – see the Felner et al. (1997) study below: “One of the main reasons the Carnegie Council's [*Turning Points*] report is so powerful is that it deals with changes in school and classroom structure and organization rather than with more cosmetic changes in things such as the grades served by middle schools” (Eccles et al., p. 569).

## Initial Findings

- *Teacher's beliefs about students*: 7<sup>th</sup> grade (middle school) teachers, as compared with 6<sup>th</sup> grade (elementary school) teachers, believed students needed to be disciplined and controlled more and were less trustworthy; 7<sup>th</sup> grade teachers felt less efficacious than 6<sup>th</sup> gr (this difference was the largest); all <.01 sig
- *Student-teacher relationships*:
  - Students and observers both saw 7<sup>th</sup> grade Ts as less supportive, friendly, and fair

- All 3 groups saw more between-class ability grouping, whole-class instruction, and social comparison of grades

*Findings from the 3 variables \* 4 student groups analysis:*

- *Teacher Efficacy:* Students who moved from high-efficacy to low-efficacy teaching classrooms had lower expectations and perceptions of their math performance and thought math was more difficult than students with no change or who moved from low to high efficacy
  - Especially dramatic declines in performance beliefs for low-achieving students
- *T-S Relationships (perceptions of support):* Students' intrinsic value of math was related to the change in perception of teacher support from 6<sup>th</sup> to 7<sup>th</sup> (low → high showed increase in value; high → showed decrease in intrinsic value as well as perceived usefulness and importance of math)
  - Again, greater declines in motivation for low-achievers
- *Between-class ability grouping:* (these 4 groups were slightly different; everyone had a heterogeneously grouped 6<sup>th</sup> grade math, and 7<sup>th</sup> graders were either high, avg, low, or hetero)
  - Initial results: students in the high class had lower self-concepts of math ability, while low class had higher self concepts than in 6<sup>th</sup>; avg and hetero no change
  - 10<sup>th</sup> grade: Ss from low class performed significantly worse on standardized math test than Ss from high class, even when math competence was equal in 7<sup>th</sup>
    - Placement in low class also showed more behavior problems

*Stage-Environment Fit*

- 7<sup>th</sup> graders reported wanting more decision-making opportunities in 4/5 areas, while both students and teachers reported that 7<sup>th</sup> graders have fewer decision-making opportunities in 7<sup>th</sup> than in 6<sup>th</sup>, reflecting a mismatch between classroom environments and student developmental needs.

*Lit Review:*

- Person-environment fit: may explain the reason for a decline in achievement in early adolescence; middle schools do not provide the appropriate environment for early adolescents' development (stage-environment fit)
  - Teachers may need to provide different type and level of structure at different ages
- Interest in school, intrinsic mot, self-efficacy, and self-esteem decrease with age, though may be subject-specific
- Girls may show a more marked decline in self-esteem than boys during the middle school transition
- Previous study by the same authors suggests that developmental/pubertal changes combined with school transition lead to decreases in motivation and interest in school and activities

- General self-esteem seems to be a problematic indicator, resulting in inconsistent findings – task or content-area specific self-efficacy is the way to go
- \*\*\*Studies in this area do not typically take school environments into account pre- and post-transition, including school size, teacher sense of self-efficacy, participation and opportunities for self-determination (autonomy?), level of personal teacher/student relationship

Limitations/Future Research:

- Sometimes it's hard to find schools that systematically vary by these predictors, especially classroom environment factors
- Neutral, external observers may not be necessary for measures of class environment
- Only included math class – no documentation that this is best
- I'm not sure how the authors determined that the 7<sup>th</sup> graders had equal competence in the between-class ability grouping analyses – in their graph (p. 566), the kids' math self-concepts in 6<sup>th</sup> grade (Wave 1 especially) aligned with their placements in 7<sup>th</sup>, suggesting a difference in competence from the start

**Citation: Lee, V. E., & Loeb, S. (2000). School size in Chicago elementary schools: Effects on teachers' attitudes and students' achievement. *American Educational Research Journal*, 37(1), 3-31.**

*Note: This article does not address grade configuration, but it does discuss cohort size which is linked to grade configuration.*

Problem/Question:

- “Is school size related to teachers' assessments of their colleagues' willingness to assume responsibility for students' academic and social development?” (school size → teacher attitudes)
  - What is the relationship between school size and teachers' shared commitment?
- Is school collective responsibility related to student achievement? (teacher attitudes → student learning)
- Does school size have a direct effect on student learning? (school size → student learning)

Research Design

- The authors describe their study and conceptual model as a “school effects study” – how characteristics of schools influence school members' attitudes/behaviors
- Two separate, related, multi-level analyses – controlling for factors at school, teacher, and student levels

- Focus on teachers' attitudes – within-school and between-school model
- Focus on student achievement– within-school and between-school model
- Sample: data from the Consortium on Chicago School Research – 264 K-8 Chicago schools
  - The authors note that this sample is actually the entire population, so instead of reporting statistical significance, they are reporting ES
- Analysis: HLM – controlling for race, SES, at school and student levels

#### Key Findings

- (Not a key finding but interesting: Teachers' experience is related to their sense of collective responsibility; U-shaped relationship where teachers with 6-10 years of experience score lowest)
- School size is negatively related to teachers' attitudes about collective responsibility (*presented in gamma coefficients so I'm not sure what the values mean – seem to be using beta for within-school analyses and gamma for between-school*)
- School size appears to act on students' achievement (math) directly and indirectly through influencing teacher collective responsibility – both are significant predictors
  - Adding the ES of both predictors, total effects of small schools on math learning are .64 SD, and effects of medium schools = .45, compared with large schools.
  - Authors posit that in reality, school size acts on both teachers and students indirectly, through the number of interactions possible with other staff and students – school size may be acting here as a proxy measure for the intimacy and quality of relationships

#### Limitations

- Chicago's K-8/9-12 structure is unusual – limits external validity
- Generally, the limitations of this study would tend to produce *underestimates* of effects

#### Suggestions

- Schools-within-schools – challenges:
- “small” in this study defined as <400 students, but not sure whether this is an appropriate number
- Be sure not to increase between-group stratification
- How autonomous should the small schools be?
- Will they require more funds and resources? Teachers?
- School size is especially important for disadvantaged, urban populations

#### Relevant Info from Lit Review

### *School Size*

- Two streams of research in studying school size:
  - Sociological: as size grows, schools become more bureaucratic, instructional programs become more specialized (was supposed to be a benefit but turned out to be tracking – extensive differentiation yields social stratification), and relationships become more formal
  - Economic: benefits have not panned out – the idea was that expanding the scale would cut costs/increase efficiency by reducing redundancy and increasing resource strength and use, but the costs of expanding administrative staffs, transportation, and material distribution have largely offset these projected savings
- In high schools, students made the most achievement gains when enrollment ranged from 600-900 students – more important for low SES schools (Lee & Smith, 1997)

### *Teacher Collaboration*

- Difficult to establish because the organizational norm in schools focuses on individualization, specialization, rather than cooperation
- Teacher collaboration fosters sharing of information and advice, promotes productive school culture as well as social contact with peers (Little, 1982, 1990; Rowan, 1990b).
- Teachers' attitudes (expectations and responsibility for student learning) have an effect on student engagement and achievement
- Collective responsibility for student learning: an average of teacher attitudes across the school
  - Level of responsibility for own teaching; attributions of student success (internal to teacher or external, such as student ability or family background)
  - Schools with higher collective responsibility and more consistency in these attitudes across teachers showed strong gains in student achievement (Lee & Smith, 1996).

**Citation: Felner, R. D., Jackson, A. W., Kasak, D., Mulhall, P., Brand, S., & Flowers, N. (1997). The impact of school reform for the middle years: Longitudinal study of a network engaged in Turning Points-based comprehensive school transformation. *The Phi Delta Kappan*, 78(7), 528-532, 541-550.**

Purpose: Evaluate the implementation process of the recommendations in *Turning Points: Preparing American Youth for the 21<sup>st</sup> Century*.

- Turning Points is a report of the Carnegie Council – the second author of this article is the first author of *Turning Points*.
- The schools include 97 members of the Illinois Middle Grades Network (IMGN), a selective group that must meet rigorous criteria for acceptance and have agreed to implement the *Turning Points* recommendations.

#### Questions:

- As schools move to more comprehensive stages of implementation, are there parallel changes in student outcomes (long list)?
- How do outcomes vary for students in at-risk groups (race, SES, crime, unemployment)?
- How do school and community settings/contexts affect the relationship between implementation and outcomes?
- (This one was not specified in the RQs section but seems important: which components of *Turning Points* have which effects, dosage/diminishing returns information, combined effects)

#### Research Design

- “Compressed longitudinal” design – sets of schools starting at different phases of implementation (takes less time)
- Sample includes the range of school and student characteristics across all of Illinois
  - \*Preliminary findings reported here pertain to 31 schools (second cohort) that have been in the study for two years
- 31 schools were divided into 3 groups by their (**relative** not absolute) levels of implementation (LOI):
  - High (9 schools): high levels of common teacher planning time, frequent advisory periods, low T:S ratios, developmentally appropriate student decision-making and instructional patterns
  - Partial (12): made some of these changes or made them more recently
  - Low (10?): no/few changes or no progress yet
  - Researchers attempted to keep demographics comparable across groups
- For the longitudinal section of the analyses, another dimension of LOI was added: degree of change over the last year (level 5 – no implementation last year and no change this year, versus level 1 – highest level of changes).

#### Key Findings

- These are preliminary findings -- data were collected through the third year of the study – not very long for systems-level change – use caution in interpretation

#### *Cross-sectional Findings (limited – the purpose of this study is longitudinal)*

- Student achievement: students in high LOI schools scored a full SD higher in math than students in low LOI schools! Difference was even greater for language! Still more than half a SD better in reading.

- Student behavior problems, teacher report: aggression, moodiness/shyness, and learning difficulties (all lumped together) were significantly lower for higher implementing schools – difference between each of the 3 groups was sig
  - Same pattern for student self-report of worry about something bad happening in school and about the future, fear of victimization, and self esteem

#### *Longitudinal Findings*

- Positive correlations between one- and two-year changes and achievement scores: reading (.51, .53) and math (.30, .35) – all sig at  $p < .001$  – increases in implementation are associated with increases in academic achievement
- Average gains in math and reading achievement across 2 two-year periods were highest for the schools at the highest LOI (21 points – nearly half of a SD) and lowest for schools at level 5 (-1 point), with the expected gradations of each level in between (nice figure p. 548).
- Found similar results as the cross-sectional on social-emotional outcomes – not much presented on this in the article

#### *Process Findings*

- Reform must be comprehensive and integrative, with attention to the sequence and interdependence of elements
  - The “checklist” approach, with no regard to level of implementation, is too shallow to ensure an impact on teaching and learning
  - E.g., teaming – yes/no (checklist) versus looking at team sizes, T:S ratios, and common planning time (comprehensive)
- Critical levels (tipping points?) of implementation:
  - Teams should have < 120 students, at least 4 common planning periods per week, and have a S:T ratio below ~25:1
- Interdependence of reform elements: deficits in any one element limit effects of others
- Evidence suggests that the positive effects on students in the reform schools are not due to gains in the middle school, but to the absence of decline that is seen in the traditional schools – preventive
  - The declines are worse for students at risk
- (p. 541-2) The most successful sequencing of reform starts with changing leadership processes, staff attitudes toward the reforms, and shifting operational norms and structures – this will lead to quicker and larger changes in teaching and learning practices and school characteristics.

**Citation: Byrnes, V., & Ruby, A. (2007). Comparing achievement between K-8 and middle schools. A large scale empirical study.**

*Note: Article reports on natural experiment in the Philadelphia School District.*

Literature review information:

- Policy makers and researchers once thought middle schools would be the best way to address behavior, academic, and social-emotional needs of this age group. The return to K-8 schools represents a shift to the old ways.
- Previous research has shown that students in K-8 schools have better reading/math achievement and attendance. Also these students exhibit better performance in terms of social outcomes such as self-esteem leadership, and attitudes.
- Factors that may make K-8 schools better:
  - Middle schools in general serve student populations with higher rates of poverty and larger proportions of minority students, is one of the fundamental reasons suggested by prior research as to why the two school.
  - Teacher characteristics: most middle schools have low retention rates, less experience, and lower rates of certification.
  - School transition: The extra transition for students may be difficult and related to poorer academic and social outcomes.
  - School size: K-8 schools are often smaller which may foster a sense of community and allow teachers to use strategies such as team teaching and personal learning communities.

Purpose: The authors sought to provide a more rigorous evaluation of K-8 schools by employing a more appropriate method of statistical analysis, a substantially larger sample size, and a more diverse set of statistics control.

Design: The authors used a three level multi-level model with students nested into cohorts which were nested into schools. The authors included 40,883 students taken from 95 schools in their sample. The three cohorts were old K-8 schools, new K-8 schools, and middle schools.

The principle outcome measure was students' 8<sup>th</sup> grade scores from the Pennsylvania Statewide System of Assessment (PSSA). Fifth grade scores on the measure were used as controls for prior achievement. Time, student demographics, teacher data, school transitions (examined if students were in the same school in 8<sup>th</sup> grade as they were in fourth), and school factors (e.g. school size) were also included as control variables.

Hypotheses:

1. Do the old K-8 schools have a significant advantage over middle schools in terms of student achievement?
2. Do the new K-8 schools have a significant advantage over middle schools in terms of student achievement?

- a. The authors hypothesized that “since new K–8 schools have intrinsic advantages over middle schools but at the same time serve more disadvantaged populations, they should not perform significantly differently from middle schools in the end.”
3. After controlling for student and teacher characteristics is there an advantage for students in old K–8 schools over middle schools? Is there an advantage for new K-8 schools versus middle schools?
4. After controlling for external (student/teacher characteristics) and internal qualities (school size and school continuity) are there significant differences between old K-8 schools, new K–8 schools, or middle schools.

Results:

- HLM verified the need for 3 levels of analysis.
- > 75% of variation in student achievement in 8<sup>th</sup> grade was at the student level for both math and reading.
- Old K-8 schools had students with significantly higher levels of achievement, this finding held after controlling for population demographics.
- Newer K-8 schools did not perform different than middle schools. However, after controlling for population demographics, the new K-8 schools were statistically higher in reading but not math.

After controlling for school transition and grade size (last control variables entered into the models), there were no statistically significant differences! The authors concluded that this finding was due to newer schools serving a more disadvantaged population than the old K-8 schools.

Author conclusions:

As the new K-8 schools did not contribute to math achievement significantly more than middle schools (with the full model), “we might” conclude the features that changed with the transition are not enough to replicate the old K-8 school achievement advantage.

So much of the K-8 advantage resides in differences in student populations between old K-8 and middle schools.

Authors believe the factors that foster positive student achievement are due to the class size and continuity BUT ALSO the populations that middle schools commonly serve.

“As long as the student demographics remain unchanged, a district is unlikely to replicate the K-8 advantage based on size or transition alone.”

The changes in student performance, while sizable, would have left more than 50% of students in middle school still scoring below proficient on the PSSAs in both math and reading.

**Citation: Seidman, E., Allen, L., Aber, J.L., Mitchell, C., Feinman, J. (1994). The impact of school transitions on the self-system and perceived social context of poor urban youth. *Child Development, 65, 507-522.***

Literature Review information:

- The transition to middle school is likely to be disruptive to the self and to social relationships. If students do not successfully make the transition it will increase the risk for long term negative developmental outcomes.
- This may especially critical for poor urban youth who experience a greater number of environmental stressors.
- Attitudes toward school, achievement motivation, and intrinsic versus extrinsic motivation have been found to change negatively after the transition to middle school.
- Grade point average often declines after a school transition.
- The transition to junior high school is associated with a decrease in student participation in extracurricular activities (which is a marker of engagement).
- Developmental mismatch hypothesis: “The mismatch between the motivational and developmental needs of early adolescents making the transition and their first encounter with the structure and demands of the new social environment is responsible for decrements in the self-system and disruptions in the role relationships.”

Purpose/Question: Examine the developmental mismatch hypothesis with urban youth. Four distinct research questions:

1. What is the impact of the early adolescent school transition on the self-system?
2. What is the impact of the transition on a student’s perceived social context?
3. Are changes in the self system and social context that coincide with the transition common or unique to gender or race/ethnicity?
4. To what extent are the changes in the self-system a function of the changes in the patterns of transactions with the peer and school microsystems across the transition from elementary to middle/junior high school.

Research Design: Data for the study were drawn from a larger longitudinal study of youth attending Baltimore, Washington D.C., and New York City schools. In this study, 580 adolescents who had provided data for both pre- and post-transition and were black, white or Latino (p. 510). The authors used both multivariate analyses of covariance and analyses of covariance to answer research questions. In each analysis, a 2 (gender) x 3 (race/ethnicity) x 2 (time) design was used. Age and grade (5<sup>th</sup>-6<sup>th</sup>, or 7<sup>th</sup>-8<sup>th</sup>) were included as covariates. The authors were interested in the within-subjects main effect of time and the interaction between time x race/ethnicity and time x gender. In order to predict self-system change the authors used hierarchical multiple regression analysis to assess the changes across time.

## Key Findings:

- Impact on Self-System:
  - Self-esteem declined on the transition
  - Academic and social efficacy expectations increased across the school transition
  - Decline in self reported GPA and class preparation.
- Impact on School and Peer Microsystem Transactions:
  - After the transition, daily hassles significantly increased,
  - Perceived social support declined significantly in the transition year
  - Participation in extracurricular activities also significantly declined.
  - There was also a significant decrease in daily hassles with peers.
- The multivariate gender x race/ethnicity x time was significant, until the authors included reading and math achievement scores. Then the interaction was not significant.
- The authors used HLM to find that changes in perceived school and peer microsystems were associated with changes in the academic aspects of the cognitive and behavioral domains of the self-system.
  - Increases in school daily hassles, across the transition, were associated with decreases in academic efficacy expectations, class preparation, and GPA.
  - The perception of conforming peer values was associated with increased class preparation
  - Increased peer hassles with reports of increased GPA (p. 518).
- The developmental mismatch hypothesis was supported by these findings (p. 519)

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

Research Question: How do academic and self-esteem outcomes differ for 8<sup>th</sup> graders in Philadelphia who attend a middle school vs. a K-8 school?

- Do these differences persist after controlling for school and individual predictors?

## Background: Middle Schools Failing Philadelphia Students

- Secondary Education Movement Strategic Plan: At the time the article was written, Philadelphia was in the process (begun in 2003, est. completion 2007) of restructuring to reduce the number of middle schools based on prior research that they were failing urban students
- Under the plan, 9 middle schools would be converted to smaller high schools (800-1000 students), and feeder elementary schools would increase by one grade level each year until they were in a K-8 configuration

- Aim was to foster a smaller, family atmosphere, with groups of students staying together for a longer time, and enabling parents and teachers to form stronger relationships
- In 1995-96 (the first wave of PELS during which the 8<sup>th</sup> grade data were collected), 10,335 8<sup>th</sup> graders were served in Philadelphia in 38 middle schools, and 3,671 8<sup>th</sup> graders were served in 41 K-8 schools.
  - **\*Better teacher characteristics in K-8 schools – higher percentage certified, higher 3-year retention rate, and more years of experience on average than in MS**
  - MS also had more African American students and more students whose families received public financial assistance than K-8

#### Research Design:

- Data from PELS (Phila Education Longitudinal Study) – this study uses 8<sup>th</sup> grade data only
  - PELS includes a stratified random sample from the population of all 8<sup>th</sup> graders in the School District of Philadelphia (public only)
- Multilevel regression (data are nested with groups of students within groups of schools)
  - Used MLWin software, similar to HLM
- Outcomes:
  - Average for all final grades (except gym)
  - Failures: whether the student failed any courses
  - Absences: whether the student missed 20% of school or more in one year
  - Suspensions: whether the student was ever suspended that year
  - Threat: whether student had been threatened by another in school (dichotomous – from survey data)
  - Safety: factor analysis
  - Feelings toward school: factor analysis
  - Self-esteem: factor analysis including self-worth and satisfaction items
- The authors control for school variables (school size and racial composition), individual variables (African-American or not [self-report], gender, retention), and parent SES (parent high school education or not, receive public assistance or not)

#### Key Findings:

- First examined how student and family characteristics differ by school type (not controlling for anything yet): there are significant differences between MS and K-8 schools in Phila – MS have more Hispanic, less parent education, more poverty, more retention, lower grades (small difference but sig at <.001), more failed subjects, more missed school, lower self-esteem, less sense of safety, and feel more threatened than students in K-8
- In the full academic model, after controlling for several other demographic predictors, going to a middle school was not related to any of 2 academic or 2 school-behavior outcomes

- But there was a significant relationship between the contextual predictors of school size, racial composition of the school, individual race, gender, retention, attendance, and public assistance
- Larger schools are associated with lower grades and higher odds of failure
- In the full nonacademic model, after controlling for several demographic predictors, students attending middle school had significantly lower self-esteem and significantly higher perceptions of threat than students attending K-8.
  - Liking school and perceived level of safety *were not* related to MS vs. K-8
  - Race, gender, retention, and poverty *were* all related
- While the interaction term was not significant, results of models separated by school form suggest that self-esteem may carry more benefits for MS students than K-8 students for grades, course failures, and suspensions (but not attendance)

#### Limitations

- Authors note that concurrent data collection of predictors and outcomes obscures directionality: did low grades result in low-self esteem?
- I noted that this is just a study of Philadelphia public high school students – the authors generalized a little broadly by saying that eliminating middle schools is unlikely to succeed with only evidence from one city – we also don't have data on 6<sup>th</sup> or 7<sup>th</sup> graders
- I also noted that previous research says self-esteem is not really a good predictor because it's too general and has been shown not to relate as well to academic outcomes. Here are the items they used (Cronbach's alpha = .68, usually, the alpha should be .7 or above to be considered reliable).
  - You feel that you are very good at your school work.
  - You have a lot of friends.
  - You are happy with yourself most of the time.
  - You like the kind of person you are.

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

#### Questions:

- Does entering a middle school affect academic and behavioral outcomes in subsequent years?
- Do effects differ based on when the student entered middle school?

#### Research Design:

- Used school configuration in grade 3 as the predictor because whether and when they go to a middle school “is strongly related to the range of schools they attend in grade 3”
  - The ranges studied include K-5, K-6, and K-8
  - Called this their “instrumental variables strategy”
- The equation the authors used was designed to be sensitive to whether the students who were destined for middle school saw declines in achievement before they ever made it to middle school, another way of controlling for student factors (prior achievement?)
- Also used two-stage least squared regression (OLS) to account for the fact that not all students experience a systematic, predictable change to the next school
  - E.g., a student who enters MS at grade 7 may not have attended a K-6 school, but perhaps attended a K-8 and changed schools due to another reason (moving)
  - Found that the instrumental strategy and OLS came out with pretty similar results

#### Key Findings:

- Controlling for achievement and retention in grades 3-5, by the time they are in 8<sup>th</sup> grade, students who enter middle school at grade 6 are estimated to underperform relative to kids in K-8 (in math by .17 SDs and in English by .14 SDs); the level of underperformance is not as bad for kids who entered MS at 7<sup>th</sup>, relative to kids who never entered MS (underperforming K-8 8<sup>th</sup> graders in math by .10 SDs and .09 in English).
  - We would consider an effect size <.20 to be trivial, assuming these are equivalent to Cohen’s *d* or *h*.
- Other findings
  - When looking only at students above the city median in grade 3 achievement, the difference between K-8 kids and 7<sup>th</sup> grade-entry MS kids in 8<sup>th</sup> grade achievement is not statistically significant
    - The transition to MS is more harmful for low-achieving kids
  - Cohort size had a small but statistically significant effect on achievement (average grade 8 cohort size in K-8 schools was 200 students fewer than in MS)
  - Parent perceptions of safety, academic rigor, and adult prosocial behavior were lower for parents of MS students than of K-8 students (survey data)
    - Also some evidence of lower *student* perceptions of these factors in MS than K-8
  - The authors looked into several other reasons for the differences in achievement between students who attend middle school and those who don’t, including increased absences in suspensions in MS, financial resources, class size, teacher quality (though this was measured only , peer stability, student characteristic diversity, incidence of tracking, focus on math and English – none of these differed significantly/meaningfully by grade configuration type
  - Moreover, students who entered middle school in grade 6 underperform relative to students who entered middle school in grade 7. An F-test reveals that the expected

difference in achievement in grade 8 between students who entered middle school in grade 6 and those that entered in grade 7 is significant at the 1% level for both subjects.

Limitations:

- These data only go up through 8<sup>th</sup> grade – so not all students have made a transition yet.
  - We can't say middle school is the problem, because the inevitable transition to high school may cause similar declines in achievement for the K-8 students.

**Citation: Gunter, W.D. & Bakken, N.W. (2010) Transitioning to middle school in the sixth grade: A hierarchical linear modeling (HLM) analysis of substance use, violence, and suicidal thoughts. *The Journal of Early Adolescence*, 30(6), 895-915.**

Literature Review information:

- From 1970-2000 the proportion of sixth-grade students in traditional elementary schools went from approximately 75 percent of all sixth graders to less than one quarter (Cook et al., 2008).
- The majority of schools moved sixth grade into middle schools (6-8).
- Previous studies have examined standardized testing data, GPA, and behavioral consequences.
- However, analyzing changes in behavioral measures may reflect changes in staff response to problem behavior (more severe punishment) or changes in awareness (elementary school staff may not look for substance abuse problems).
- The authors of this study use self-report data to determine differences in substance use, violent behavior, and suicidal thoughts.

Research Design:

- Data from the study comes from a Delaware Risk Behavior Survey (developed by the CDC). The survey was administered to a random sample of 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grade classrooms between January and May 2007.
- 3 dependent variables: violence related behaviors, substance use, and suicidal thoughts/actions.
- 23 independent variables in 4 factors, emotional comfort, social acceptance, satisfaction with self, and resilience.
- The authors compared prevalence rates using chi-squared tests and then examined relationships between variables using HLM.
- HLM was also used to determine the relationship between grade configuration and the dependent variables.

#### Key Findings:

- Note: comparisons were drawn between students in terminal 6<sup>th</sup> grades (K-6, and non-terminal 6, 7, 8).
  - Students in terminal 6<sup>th</sup> grades reported a significantly higher response to both measures of violence, BUT this significant difference disappeared under HLM analyses.
    - “study provides evidence against the commonly held assumption that middle school increases exposure to violence and substance abuse” (p. 908)
  - There were no statistically significant differences in substance abuse between the two grade configurations.
- Finally, all indicators of suicidal thoughts/actions were higher among sixth graders in terminal schools.
  - Sixth grade girls in elementary schools were more than twice as likely to report a suicide attempt.
  - There was a gender x school type interaction. This suggests that the increase in suicidal actions during 6<sup>th</sup> grade for females was only significant in Elementary schools! (p. 906)
- Control comparisons were drawn between 7<sup>th</sup> grade and 5<sup>th</sup> grade responses on similar measures.
  - These comparisons showed that the differences between 6<sup>th</sup> graders did not exist in 5<sup>th</sup> grade (suicidal ideation was not measured) or 7<sup>th</sup> grade (except physical fighting, which remained significant).
- The full HLM model showed that emotional comfort, satisfaction, and resilience were significant predictors of suicidal actions.

Limitations: Small sample size and the use of local data limit the inferences from this study. The findings regarding suicide should be regarded as preliminary (p. 910).

**Citation: Eccles, J.S., Lord, S., & Midgley, C. (1991). What are we doing to early adolescents? The impact of educational contexts on early adolescents. *American Journal of Education*, 99(4), 521-542.**

#### Literature Review information:

- Several theorists have suggested that declines in adolescent performance in early adolescent is due to the stress from the junior high school transition or the pubertal changes in students at this time.
- Cumulative stress theory: declines in motivation result from two major changes, school change and pubertal change.

- Simmons and Blyth (1987): greater negative changes for students making the junior high school transition than those who stay in the same school.
- Motivational and behavioral declines may relate to the inappropriate educational environments in junior highs.
- Carnegie Council on Adolescent Development (1989) reported that educational practices for early adolescents should be consistent with a middle school philosophy (i.e. smaller groups of students, increased personal contact, more emphasis on objective based grading).

#### Research Design:

- Eccles et al. conducted several analyses based on the NELS:88 data to parse out the influences of age and transition on student changes in academic achievement.
- Authors made comparisons between schools with a P/K/1-8 ( $n=176$ ), 6-8 ( $n=242$ ), 7-8 ( $n=181$ ), or 7-9 ( $n = 160$ ) grade structure.
- *Outcomes included: grades, locus of control, self-concept, preparation for class, absenteeism, school violence, and substance abuse while at school.*
- Secondary analyses compared the P/K/1-8 structure to the other three on student outcomes.
- Investigated the effects of grade structure on student outcomes with regression.

#### Key Findings:

- Student outcomes did not differ between the 6-8 schools and the 7-8 schools or the 7-9 schools.
- The lack of significant differences between middle and junior highs calls into question the “age-at-transition” hypothesis regarding the decline in student motivation and achievement associated with the junior high transition (p. 526).
- Student outcomes in the K-8 schools were superior then student outcomes in the 6-8, 7-8, or 7-9 configurations.
  - Teachers and students reported that truancy, student violence, and substance abuse were higher in the “middle grade” structured schools.
  - Students in K-8 schools felt better prepared for activities and showed higher interest in school work than students in middle grade configurations.
  - Students in K-8 schools also reported receiving higher grades and having better self concepts, and a “greater locus of control” (p. 527).
  - These findings held, although the size of the coefficients was smaller, when including SES and setting (urban vs. suburban) in the model. “These suggest family-of-origin effects and community setting do not account for the school-grade structure differences” (p. 530).
  - Pattern of relations between school grade and outcomes remained largely unchanged when controlling for size of the school (slight reduction in effect sizes).
  - Examining differences between public and private schools showed no significant differences between K-8 and middle school configurations.

**Citation: Arcia, E. (2007). A comparison of elementary/K-8 and middle schools' suspension rates. *Urban Education*, 42(5), 456-469.**

Literature Review information:

- Suspension rates rise sharply in middle schools compared to elementary school
- Hypotheses for this increase:
  - Students may get more disruptive near adolescence
  - Middle school may provide poor fit for students this age.

Research Design:

- Sample drawn from Miami public schools.
- Comparison groups:
  - Students who attended K/8 or elementary school for 6<sup>th</sup> and 7<sup>th</sup> grade
  - Students who attended K/8 or elementary in 6<sup>th</sup> but middle school in 7<sup>th</sup> grade
  - Students who attended middle school in 6<sup>th</sup> and 7<sup>th</sup> grade
- Majority of the student attended middle schools in 6<sup>th</sup> grade.
- There were ethnic differences between students attending middle school vs. those attending K/8 or elementary schools in 7<sup>th</sup> grade so ethnicity was included as a covariate.

Key Findings:

6<sup>th</sup> grade:

- 8.7% of 6<sup>th</sup> grade students were suspended (at least once) in K-8/elementary schools
- 21.1% of 6<sup>th</sup> grade students in middle school were suspended at least once.

7<sup>th</sup> grade:

- 14.9% of 7<sup>th</sup> graders attending K-8 schools were suspended at least once.
- 24.6% of 7<sup>th</sup> graders attending middle schools were suspended at least once.
- 24% of students who transitioned from K-8/elementary schools to middle schools in 7<sup>th</sup> grade were suspended.

More students who scored below the 50<sup>th</sup> percentile on state tests were suspended than those who scored above the 50<sup>th</sup> percentile.

The suspension percentage was higher for Black students than Latino students which replicated other studies.

Regardless of where 7<sup>th</sup> graders attended 6<sup>th</sup> grade, a greater percentage of students in middle school were suspended than in K-8 schools.

- The higher rates of suspension across race/ethnicity, sixth-grade suspension history, and reading achievement suggest a strong setting effect

**Citation: Poncelet, P., & Metis Associates. (2004). Restructuring schools in Cleveland for the social, emotional, and intellectual development of early adolescents. *Journal of Education for Students Placed at Risk, 9(2), 81-96.***

Research Questions:

- Have the Cleveland middle grades reforms been implemented keeping early adolescents' developmental needs in mind? (Case studies)
- What is the impact on student learning of removing a school transition? (Impact study)

Research Design:

- Case studies
  - 2 elementary schools in their 3<sup>rd</sup> year of restructuring to include middle grades
  - Included interviews and focus groups with stakeholders, record review
  - Half-day observation of one middle grades student throughout his daily school activities
- Impact study
  - Compared results on spring 2002 Ohio state test (OPT) for 6<sup>th</sup> graders in K-8 and middle schools
  - Used ANCOVA to account for achievement in fall of 5<sup>th</sup> grade (2000) on SAT-9
  - For reference, restructuring began in fall of 1999

Key Findings:

- I'm skipping over the case studies for now because I'm not sure it's helpful for our needs – but let me know and I can go back and summarize this
- Impact study:
  - 6<sup>th</sup> grade students attending new K-8 schools outperformed those in MS, after accounting for grade 5 achievement, with an effect size of .29
  - ES = .38 for math only

Lit Review:

2 major possible theories explaining the problems with middle schools:

- Coleman's 1974 focal theory of change: too many life transitions during the early adolescent period can harm psychosocial functioning
- Person-in-environment theory/ stage-environment fit: early adolescents thrive in a school environment that they perceive as safe, supportive, and providing autonomy
- Not mutually exclusive

**Citation: Weiss, C. C., & Bearman, P. S. (2007). Fresh starts: Reinvestigating the effects of the transition to high school on student outcomes. *American Journal of Education*, 113, 395-421.**

Research Questions:

- Do students who transition between schools from 8<sup>th</sup> to 9<sup>th</sup> grade have poorer outcomes than students who don't change schools?
- Does it make a difference for different groups of students?

Research Design:

- Data: Add Health database, using stratified design – includes private, religious, and public schools --- nationally representative samples
  - Wave 1: In-school questionnaires (1994-95 school year)
  - Wave 1 and 2: In-home surveys (majority of data for this study)
- This study includes students who were in 8<sup>th</sup> grade at the wave 1 interview and 9<sup>th</sup> at the wave 2 follow-up (n = 1680)
  - 70% of the sample changed schools moving from 8<sup>th</sup> – 9<sup>th</sup> grade
  - **\*All of these are considered middle schools in this study, including K-8**
- Used HLM for multivariate analysis
  - For dichotomous outcome models, used second-order PQL estimation to minimize downward bias in between-group variance
- Outcomes
  - Nonacademic: fights drug/alcohol/tobacco use, delinquency, weapon at school
  - Academic: grades, school integration, having trouble in school (social, academic, behavioral), college aspirations

Key Findings:

- When controlling for other predictors, the only significant difference between 9<sup>th</sup> graders who changed schools and 9<sup>th</sup> graders who didn't is that those who changed schools were more likely to bring a weapon
- Changes occurred for all students in the shift from 8<sup>th</sup> to 9<sup>th</sup> grade, and for the most part, transitioning to a new school was not a significant predictor of the change
- Interaction effects suggest that school transitions have a **positive** effect for students who were socially isolated or had ever been retained by 8<sup>th</sup> grade

#### Limitations:

- These data do not address selection issues (if parents/students chose to attend a particular type of school)
- This study is only looking at one transition to high school – it's possible that several transitions are harmful even if one is not

#### Lit Review:

##### 2 main schools of thought regarding why the transition leads to poor outcomes

- Developmental – 9<sup>th</sup> grade is just a difficult time in adolescents' lives – changing parental involvement in school, autonomy
- Changing schools – breaking up teacher and peer relationships, changes in organization and instruction – tougher discipline, less engagement, less trust, consequences of performance – effects of larger classes, grades, and schools – school climate

##### Positive effects of transition

- Exposure to new peers/norms is an academic benefit for low-achievers in MS
- Beneficial for students who were unpopular in MS
- Raises awareness of racial identity in some cases
- Few non-school outcomes have been studied

**Citation: Mac Iver, M. A., & Mac Iver, D. J. (2006). Which bets paid off? Early findings on the impact of private management and K-8 conversion reforms on the achievement of Philadelphia students. *Review of Policy Research*, 23(5), 1077-1093.**

Research Questions:

- Do students at schools run privately by educational management organizations (EMOs) make better academic improvement throughout the middle grades than students at other schools?
- Do students in a K-8 classroom make better academic improvement than students in middle schools?

Research Design:

- Sample includes the first and second cohorts to attend 8<sup>th</sup> grade in EMO schools
- Used longitudinal data, including PA state math test scores from the spring of 5<sup>th</sup> and 8<sup>th</sup> grades
- Used 3 multilevel change models since students are nested within schools – within-student, between-student, and school-level

Key Findings:

- \*\*\*Figure 1 does not support the text or conclusions – legend error?
- Privatization/EMO school management does not improve achievement in the short run
  - May be due to incomplete implementation/ following the district's status quo
- Conversion from MS to K-8 may be a promising development (listed in the findings and makes sense looking at Figure 1, but not Table 3)
  - Other work suggests that controlling for grade size reduces the K-8 effect (Byrnes, 2005)
- The 2004 8<sup>th</sup> grade cohort made bigger gains than the 2003 8<sup>th</sup> grade cohort
  - Authors attribute this to increased centralization, which provided instructional coherence and more state funding

Lit Review:

- Research on privatized, decentralized, and site-based management is mixed

**Citation: Simmons, R. G., & Blyth, D. A. (1987). *Moving into adolescence: The impact of pubertal change and school context*. New York: Aldine de Gruyter.**

- Focus on Part IV: Impact of School Environment

Analysis Plan for Ch. 7 and 8:

- Multivariate ANOVA to measure changes in clusters of outcome variables based on school type (grade configuration)
- Examine key variables in grades 6 and 7 where sig relationships are found
- Mean changes between grades 6 and 7 by different grade configurations and gender (four groups) – each group treated as if they all started at the same level in 6<sup>th</sup> (I didn't think this was as important because the K-8 group hadn't experienced any transitions yet)
- Looking at long-term change over five years for each of these same variables (I focused on this)

Chapter 7: The effect of type of school environment upon attitudes toward school and upon the self-image

RQ: How is school type (K-8/9-12 vs. K-6/7-9/10-12) related to student attitudes toward school and self-esteem?

- Attitudes include feelings of anonymity, discomfort, impersonality

Findings

- “top dog” phenomenon – students in all grades feel more anonymous when they are the youngest in the school and less anonymous when they are the oldest (regardless of grade configuration)
  - Same for self-image – better when students are “top dog”
- \*Girls in the junior high configuration experienced a significant drop in self-esteem from grades 6-7 and grades 9-10 (the school transitions) while boys did not; both boys and girls in K-8 configurations increased in self-esteem from grade 6-10, including across the school transition
  - Note: self-esteem was not measured at grade 8

Chapter 8: The effects of type of school environment upon peer relationships, independence, future plans, and conformity behavior

RQ: how is school type related to peer relationships (participation and leadership in extracurriculars), independence, planning for the future, victimization and problem behavior, and academic performance?

Findings:

#### *Extracurricular activities*

- by 10<sup>th</sup> grade, males and females from K-8 schools were participating in more extracurriculars on average than they had in 6<sup>th</sup> grade, while 10<sup>th</sup> graders who went to junior highs are participating in fewer.
  - Males from both types of grade configuration participate in fewer extracurriculars than females do

#### *Problem behavior and victimization*

- 7<sup>th</sup> graders in junior high report less involvement in problem behavior than 7<sup>th</sup> graders in K-8 (but no sig diff in probation or suspension)
- 10<sup>th</sup> graders who went to K-8 schools report more victimization than those who went to junior highs

#### *GPA and Achievement*

- From 6<sup>th</sup> to 7<sup>th</sup> grade, GPA improves very slightly for kids in K-8 and decreases for kids in JH – decreases more for males than females.
  - Math achievement increases for all groups in this time frame, but the most for K-8 females and the least for JH males
- From 6<sup>th</sup> to 10<sup>th</sup> grade, GPA tends to decrease for all groups – unclear whether this is due to the stress of transition, stricter grading standards, or both (or the stress of transition is caused by stricter grading standards)

#### *Non-sig*

- No sig differences between K-8 and JH students were found in independence or planning for the future

### Chapter 10: Individual Change and Recovery: Extracurricular Participation and GPA

RQ: How pervasive (a few kids or many) is the change in GPA found in Ch. 8? How substantial are the changes? Can we predict 5-year change just from the change between 6<sup>th</sup> and 7<sup>th</sup> grade?

Quick recap: K-6/JH/SH kids experience a drop when they transition schools to 7<sup>th</sup> grade; K-8/SH kids experience their drop when they transition schools to 9<sup>th</sup> grade. Everyone drops during 10<sup>th</sup> with no sig diff between them.

## Findings:

- Change scores are pretty similar when you look at means or medians, suggesting that it's not a few extreme kids, but rather a general trend, that was found in Ch. 8
  - The only big difference here: differences in change scores among the K-8 kids from grade 6-9 show a bigger drop only for girls – K-8 boys drop in GPA about the same amount as JH boys from 6<sup>th</sup> to 9<sup>th</sup> grade
- While recovery from a drop in GPA at transition tends to occur at the group level, it seems that kids who experienced the largest drop from 6<sup>th</sup> to 7<sup>th</sup> continue to experience large decreases from 6<sup>th</sup>-9<sup>th</sup> and 6<sup>th</sup>-10<sup>th</sup>, while kids who experienced increases from 6<sup>th</sup>-7<sup>th</sup> show the smallest decrease from 6<sup>th</sup>-10<sup>th</sup> in GPA (everyone's GPA decreased in high school)

## Grand Summary Findings of Chapters 7-10

- Transition to a junior high school was detrimental for self-esteem (girls only), GPA, and extracurricular participation among 7<sup>th</sup> graders as compared with those who did not transition (K-8)
  - but this benefit dissipated when the K-8 cohort entered high school
- The effect appears to be neither due to a few extreme cases nor a very slight change in all children
- Children who had major losses from grades 6-7 do not seem to ever recover easily
  - Girls who attended JH were particularly unlikely to recover their self-esteem
  - JH students were somewhat less likely than K-8 students to recover participation in extracurriculars
- My summary: transitions are difficult whenever they happen, so the fewer the better; early intervention is necessary for kids who fall behind socially and academically in 7<sup>th</sup> grade because their trajectory continues to decrease; K-8 shows slightly better outcomes, perhaps because of one less transition and delaying the drop in self-esteem, extracurricular participation, and GPA

**Citation: Beane, J. & Lipka, R. (2006). Guess again: Will changing the grades save middle-level education? *Educational Leadership*, 67(7), 26-30.**

There is often confusion between middle school configuration and middle school concept. According to the Carnegie Council on Adolescent Development and National Middle School Association, high-quality middle-level schools should:

- Improve academic achievement for all students.
- Understand young adolescence and provide strong transition supports.
- Provide a challenging and integrative curriculum.
- Create supportive and safe environment through such structures as small teaching teams.

- Ensure better teacher preparation for the middle grades.
- Improve relationships with families and communities.

The practices above which make up the *middle school concept* have shown considerable promise, however the problem has been that on the whole, these components have not been well implemented over time and rarely as a complete set of principles and practices. Often times when district decides on middle school configuration it is referring strictly to the grades in the building, not the teaching philosophy.