

December 2004

**GRADE SPAN DOES MAKE A DIFFERENCE**

*According to the USDE Bureau of Educational Statistics, Common Core of Data (2002-2003) 24,852 United States public schools contain a 7<sup>th</sup> grade.*

*Approximately 57 different grade-span configurations are used by school systems to house 7<sup>th</sup> grade students. Following are the six most common, along with the number of U.S. school that use them:*

- *PK/K-8<sup>th</sup> = 5,036*
- *5<sup>th</sup>-8<sup>th</sup> = 1,416*
- *6<sup>th</sup>-8<sup>th</sup> = 8,764*
- *7<sup>th</sup>-8<sup>th</sup> = 2,593*
- *7<sup>th</sup>-9<sup>th</sup> = 622*
- *7<sup>th</sup>-12<sup>th</sup> = 2,600*
- *Other = 3,821*

**Background**

Grade span configuration issues have provided topics for discussion by education researchers, scholars, practitioners, parents, and communities for more than a century. Of particular interest is the question as to which grade span configuration is best for young adolescents between the ages ten to fourteen who attend middle grades schools. Information obtained from a variety of sources, including a recent national study is used in this brief to help bring into focus a number of issues pertaining to the relationships that exist between grade spans, middle grades educational practices, the middle school philosophy, and student outcomes, including but not limited to academic achievement.

Only a few studies have examined the relationship between variables such as types of subjects taught, organizational structures, instructional methods, classroom climate, and student participation in school-sponsored activities to different grade span configurations. Even fewer have examined the relationships between those factors and student outcomes (Hough, et al., 2003). Understanding the philosophies and practices that best serve the needs of young adolescent learners and the schools implementing those practices is of prime importance to policy makers struggling with issues associated with grade configuration and student outcomes, especially academic achievement.

**Syllogism #1**

- Major Premise: The middle grades educational philosophy fully implemented will produce more positive student outcomes including higher achievement than other approaches.
- Minor Premise: K-8 Elemiddle Schools are more fully implementing the middle grades educational philosophy than are other school types.
- Conclusion: The middle grades educational philosophy more fully implemented in K-8 Elemiddle Schools is producing more positive student outcomes, including higher achievement, than other school types.

**Syllogism #2**

- Major Premise: The middle school philosophy fully implemented will produce more positive student outcomes, including higher achievement, than other approaches.
- Minor Premise: 5-8 and 6-8 Middle Schools are more fully implementing the middle school philosophy than are other school types.
- Conclusion: The middle school philosophy fully implemented in 5-8/6-8 Middle Schools is producing more positive student outcomes, including higher achievement, than other school types.

➤ ***“We have not seen the widespread dramatic improvement in academic outcomes we had hoped for. . . . Middle-grades reform efforts have necessarily focused heavily on developmental responsiveness and the accompanying changes in school climate and organization. But middle-level reform is not a series of disconnected projects involving scheduling, teaming, or advisories.”***

(Lipsitz, J. et al 1997)

➤ ***“Studies of the relationship between school grade-span configurations, transitions, and school size to academic achievement and dropout rates indicate that smaller schools housing more grades decreasing the number of transitions have higher achievement and fewer dropouts.”***

(Alspaugh, J. 2002)

While our research findings support syllogism number one, a critical question remains unanswered: If an equal number of K-8 Elemiddles and 5-8 or 6-8 Middle Schools fully implementing the middle school philosophy were to be compared, which school type would produce more positive student outcomes, including but not limited to, academic achievement? Because no one has been able to identify a critical number of these latter school types nation-wide, we must rely on school district self report data as well as our own national pilot study to address this critical issue. What we have found is that those who have tackled the K-8 v. 5-8 / 6-8 grade configuration issue have consistently reported more positive student outcomes in K-8 Elemiddle Schools. Again, we argue that this is not to say that Middle Schools are “not working” but that there are many 5-8 and 6-8 schools calling themselves “Middle Schools” that are not fully implementing the middle school philosophy. If they were, we believe either syllogism number two would be correct or we could answer the (to date) unanswered question stated above.

### ***The Rationale***

Some continue to answer the above question(s) by stating that grade spans don’t matter. Then, all too often, they advocate for one type of grade span configuration over others. If grade spans don’t matter, why advocate for a particular type?

Grade spans do make a difference. In our current age of school system accountability, per the No Child Left Behind Act of 2001, state mandates to improve student achievement, and data driven decision-making approaches promoted by professional development experts, educators and communities are turning to the examination of a variety of factors believed to be associated with student learning. Schools across the country are finding that students attending their K-8 elemiddle schools are often outperforming their counterparts in other school grade configuration types, most notably 5-8s and 6-8s. Often, these latter school types call themselves “middle schools” but may not be fully implementing the programs that would make them bona fide examples deserving of the cognomen. This misunderstanding has contributed to the unfortunate perception by some that middle schools “don’t work.”

Many (if not most) middle grades education supporters believe the middle school philosophy does work, can work, and would work if fully implemented – in any grade span configuration. Limited research may support this position, and our examinations over the past 15 years leads us to agree. The only problem we’re finding, is that K-8 elemiddle schools have been the places (for whatever reasons) where much of the middle grades “best” or “promising” practices have been found and, not incidentally, where schools have reported and studies have documented higher student achievement, better attendance, fewer behavior problems, lower subsequent drop out rates and higher graduation rates in the high schools where these students later attend.

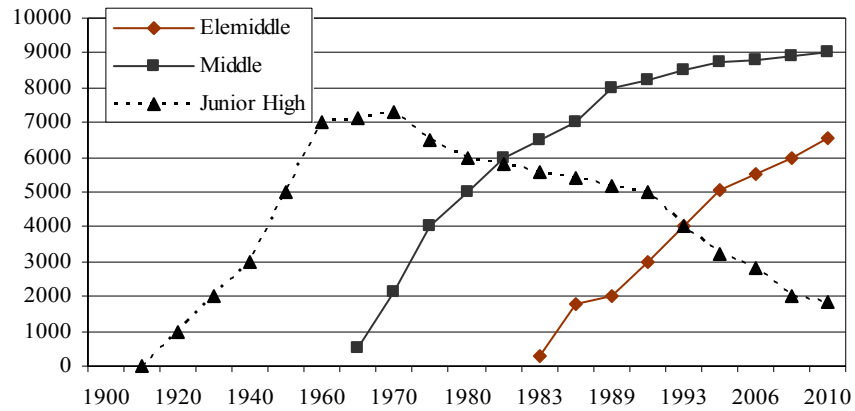
### **What’s In a Name?**

The fundamental fault in the reasoning of too many well-intentioned advocates is that they claim 5-8 and 6-8 middle schools are where the promising practices associated with the middle school philosophy are being implemented at the highest levels. Then, when data demonstrate that students attending schools with these grade configurations are achieving at lower levels than their K-8 elemiddle counterparts, they admonish critics that “the middle school movement cannot be faulted for educational deficiencies it did not create and practices it did not recommend,” as articulated by Sue Swaim, executive director, NMSA, in her April 21, 2004, manifesto in *Education Week*, Vol. XXIII, Number 32. Again, our research supports Director Swaim’s position.

You simply can't have it both ways. Are 5-8 & 6-8 so-called "middle schools" more fully implementing the middle school philosophy or not? If that philosophy is associated with positive student outcomes and if 5-8 and 6-8 schools are implementing this philosophy at higher levels than other schools with different grade span configurations, then why is student achievement not higher in those 5-8 and 6-8 schools? Either the major premise or minor premise is faulty, or the conclusion defies logic.

Of course elemiddle schools could succumb to the same fate of their junior high and middle school predecessors. That is, many so-called "middle schools," may have just changed their school's grade-span configuration from a 7-8 or 7-9 to a 6-8, replaced the words "junior high" with "middle" and then went about business as usual. If the same thing is done by converting schools to K-8 grade configurations, then one could reasonably expect to see a similar outcome sometime in the future. Our advice is not to call yourself a "middle school" unless you really ARE one, and not to call yourself an "elemiddle school" unless you really are.

**Figure 1. Trends in Middle Level Education Grade Span Configuration (Elemiddle, Middle, and Junior High Schools)**



Source: 1910 to 1981 data from various national surveys. 1983 to 1992 data and estimates from 1993 to 2004 from U.S. Department of Education Center for Education Statistics. 2004-2010 are from trend analysis.

***“The Pit & the Pendulum”: Swinging Toward Elemiddle Schools***

Texas, Georgia, Louisiana, Maine, Colorado, and Connecticut have studied the feasibility of creating state-wide initiatives to convert their middle grades schools to K-8 structures. Specific districts across the county that have / are considering a switch to K-8 structures to improve student outcomes, most notably achievement, for young adolescents in the middle grades include:

Miami, Florida; New Orleans, Louisiana; Cleveland, Ohio; Cincinnati, Ohio; Everett, Massachusetts; Fayetteville, Tennessee; Baltimore, Maryland; Louisville, Kentucky; San Francisco, California; and Boston, Massachusetts;. Newark, New Jersey; Trenton, New Jersey; Rochester, New York; Oklahoma City, Oklahoma; New York City, New York; St. Louis, Missouri; and Philadelphia, Pennsylvania.

Of these, the Philadelphia School District has, perhaps, completed the most comprehensive evaluation and conversion plan to reduce the number of its different grade-span configuration schools. Their plan is to increase from 55 to 121 their number

➤ ***“In New Orleans, 8<sup>th</sup> graders in the school system’s five K-8 schools, none of them magnets, were twice as likely to pass the state test as compared to students ‘at the district’s failing middle schools.’ The K-8 students also performed better on the Iowa Test of Basic Skills. Research studies in Philadelphia and Baltimore school systems reached similar conclusions, as did at least one national review of the limited research on this subject.”***  
(Mizell, H. 2004)

➤ ***“There is no definitive research available that says one grade span configuration is preferable to another.”***  
(Swaim, S. 2004)

➤ ***“Another major factor in school systems’ decision to switch to a K-8 configuration involves the issues of student control, discipline, and safety.”***  
(Mizell, H. 2004)

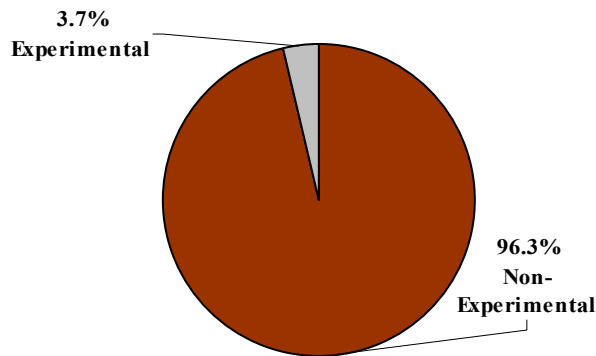
of K-8 schools by 2007. Philadelphia's data indicate that young adolescent learners in their K-8 schools are outperforming students in their other grade-span configuration schools. The Philadelphia data document higher academic achievement, fewer discipline problems, and higher rates of attendance. By adopting the elemiddle approach, Philadelphia schools hope to reduce school size, improve teacher quality, and improve facilities. Philadelphia parents, community members, city officials, and school personnel all contributed input to the plan they have developed. Their goal is to improve teaching and learning for young adolescents in the middle grades.

**Research v. Rhetoric v. Reality**

Our research suggests that in those instances where K-8 elemiddles are found to be outperforming 5-8 and 6-8 schools, it is because the former are more fully implementing middle grades promising practices. Again, to date, no one has been able to find a critical mass of 5-8 and 6-8 schools that are fully implementing the middle school philosophy to allow for an adequate sample size from which comparisons and generalizations can be made. One would want to assume, reasonably, that if 5-8 and 6-8 grade span schools were fully implementing the middle school philosophy, then student achievement would be at least equal to that of students in K-8 elemiddles where the same best practices are being implemented. Such a study has yet to be conducted.

Not all schools that include kindergarten through grade eight are elemiddles. Therefore, we have adopted a working definition of elemiddle schools: Elemiddle schools are those configured with continuous grade spans that begin with kindergarten or pre-kindergarten and end after eighth-grade in which the upper grades (beginning either with the sixth, fifth (or sometimes fourth) are implementing programs consistent with a middle grades educational philosophy of "best" or "promising" practices.

**Figure 2. Middle Level Research Study Designs (1991-2002)**



While middle grades education has been the subject of much study, the key issues addressed in this policy brief have not been a major area of focus by very many researchers. Research teams at the Institute for School Improvement at Southwest Missouri State University have undertaken three important studies over the past four years. First, we spent almost two years examining 3,717 studies of middle grades education issues, topics, and questions. We selected a twelve-year period of time (1991 to 2002) for this examination. This study resulted in the publication of "R<sup>3</sup> = Research,

➤ ***“Less than 4% of middle level research is experimental, utilizing randomized samples and controls. Most information we have is qualitative, collected from case studies and other ethnographic approaches. Of the almost 4,000 studies examined over a 12-year period between 1991-2002, only four address student achievement in any comprehensive fashion, and none of these were experimental.”***

(Hough, D. 2003)

➤ ***“The tendency to create narrow grade-span configurations reinforces the bad habit of building larger and larger schools.”***

(Howley, C. 2002)

➤ ***6-8 Middle Schools, 7-8 / 7-9 junior highs, and 7-12 “middle-high” schools tend to have a greater variety of course offerings, including electives, exploratories, and advisory programs than do K-8 Elemiddle Schools.***

(ISI national pilot study, 2004)

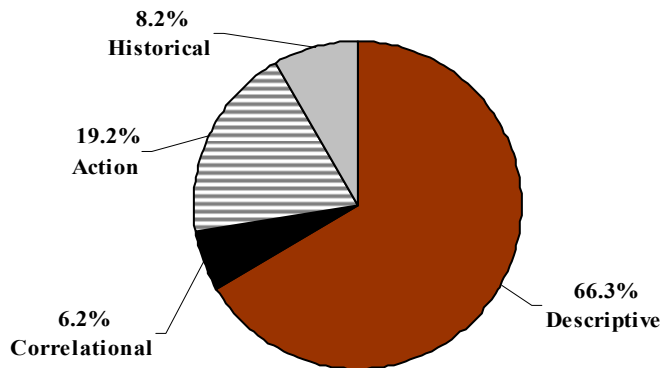
Rhetoric, and Reality” by the National Middle School Association, 2003. Second, we conducted a narrowly focused review of research and resources associated with grade configuration – student outcomes issues. This paper, titled “Implementing the Middle Grades Philosophy in an Elemiddle School Setting: An Annotated Bibliography” is due to be published by the Institute for School Improvement in March 2005. Third, we conducted a national “pilot” study to determine what methods would be necessary to develop an adequate, appropriate national data base that would allow for proper examination of middle grades – student outcomes issues, along with the many questions associated with these inquiries.

➤ ***“The reality is that bearing the title ‘middle school’ and enrolling students in grades 5-8 or 6-8 has never meant that an education community is implementing all the recommended middle school practices. In fact, nationwide, many middle schools took the name while only adopting selected middle school practices, rather than focusing on their full integration.”***  
(Swaim, S. 2004)

➤ ***“Another major factor in school systems’ decision to switch to a K-8 configuration involves the issues of student control, discipline, and safety.”***  
(Mizell, H. 2004)

➤ ***K-8 Elemiddle Schools tend to have higher rates of parent and family participation than 6-8, 7-8, 7-9, and 7-12 schools.***  
(ISI national pilot study, 2004)

**Figure 3. Middle Level Research Study Methods (1991-2002)**



As presented in this policy brief under the heading “lessons learned,” the ISI research team found that paying close attention to research designs and methods is, perhaps, the most widely overlooked or under-examined facet associated with the middle school research literature. Too many people cite “studies” that have not been “refereed” or reviewed rigorously by the research community. Some studies are misrepresented in the literature in that broad generalizations and inferences are made in the absence of data to support findings. For example, when a limited number of program components such as teaming, common planning time, and professional development (taken together) are found to be associated with positive student outcomes, individuals who do not fully understand the implications of these findings all too often tend to misrepresent such research and use it to support contentions the researchers neither implied nor endorsed. The entire array of programs, practices, and policies that constitute a particular philosophical approach to education must be considered, not just a few, choice components.

### ***The ISI National Pilot Study***

Beginning in the spring of 2004, the Institute for School Improvement at Southwest Missouri State University conducted a search of the National Center for Education Statistics (NCES) Common Core of Data (CCD) for schools containing a 7<sup>th</sup> grade. After identifying the population of 24,852 schools, the ISI research team examined the grade configurations associated with these schools. The team identified five specific grade configurations (K-8, 6-8, 7-8, 7-9, 7-12) for this study. A stratified, random sample of 500 schools was drawn from this national population.

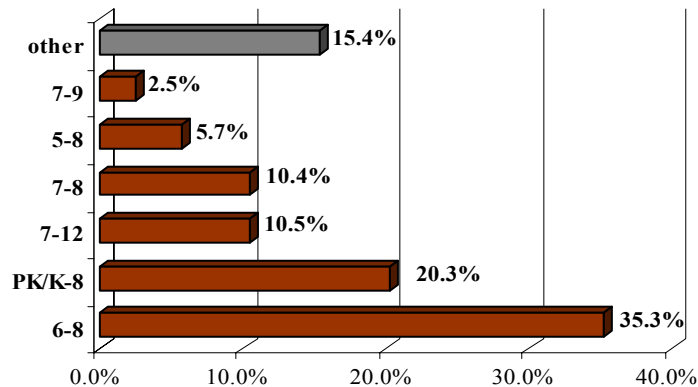
The ISI research team developed a survey instrument designed to gather perceptual data from middle grades principals and teachers regarding pedagogical practices, school-wide policies, and philosophies that influence the instruction of adolescents. Packets containing questionnaires were mailed to the national sample of 500 schools, along with instructions in a letter of transmittal that requested the school principal to complete one questionnaire and randomly distribute the others to any 10 teachers in the school. Thus, the total sample consisted of 500 principals and 5,000 teachers nation-wide.

Because the research question guiding this inquiry required a school level unit of analysis, only those schools from which we received both principal and teacher responses were included. A 17.4% total response rate among principals and teachers was achieved, resulting in 85 schools being included in the pilot study.

**“Lessons Learned”**

Lesson #1. Identifying a sufficient number of middle grades schools fully implementing the middle school philosophy is a challenge. When drawing a random sample to address the philosophy - grade span - student outcomes issue, it is important to stratify on many different grade span configuration schools, including 5-8 and 4-8 schools. Geographic location and setting (as defined by inner city, urban, suburban, and rural) are also important considerations. However, respondents do not always agree as to what type of setting best characterizes their school.

**Figure 4. Middle Level Schools That Contain Grade 7**  
(N = 24,852)



Source: National Center for Education Statistics Common Core Data, Spring 2004

Lesson #2. Principals’ and teachers’ perceptions differ significantly. When data were disaggregated to compare principals’ responses with teachers’ responses to the same questions about what is taking place in their schools, the differences in responses are often statistically significant.

Lesson #3. The validity of the data must be examined by utilizing a variety of methods – not just via survey questionnaire. Site visits, observations, personal interviews, focus group interviews, and the unobtrusive collection of documents are examples of additional approaches needed. In one state alone for example, members of the ISI research team visited 27 different schools over a three-year period and conducted more than 50 interviews while collecting information related to the study of professional development and its impact on student achievement. These components are critical to the study of any school issue.

➤ **“The traditional junior high school model that replicates a comprehensive high school for young adolescents in grades 7-8 or 7-9 is actually beneficial for about 15% of the students attending those schools. However, the other 85% need a different type of environment.”**

(David Hough. Speech given to the California Mentor Teacher Program, Riverside, California, 1994.)

➤ **“There is no definitive research available that says one grade span configuration is preferable to another.”**  
(Swaim, S. 2004)

➤ **K-8 Elemiddle Schools tend to be perceived as more nurturing, child-centered, and safer environments than 6-8, 7-8, 7-9, and 7-12 schools.**

(ISI national pilot study, 2004)

Lesson #4. Determining “high middle school philosophy implementation” v. “low middle school philosophy implementation” is problematic, but must be achieved via statistical methods, not personal opinion. The ISI approach utilized a split mean method in combination with factor analytic techniques to rank order schools from high to low. The middle group could then be removed, leaving the greatest degree of separation possible between the two sets. A serendipitous outcome achieved by this approach was the creation of scales from the data yielding a high level of reliability,  $\alpha = .97$ .

Lesson #5. Normal curve equivalencies can not be used to standardize state assessment data, because the scales and rubrics across states vary widely and do not reflect uniformity of measures. In addition, accessing student level state assessment data is not always feasible, and even accessing school level state assessment data is difficult, at best. Once obtained, many comparisons are spurious due to the different rubrics used.

Lesson #6. The best information on student outcomes and their relationships to school philosophies and programs can be found in the evaluations school districts have conducted themselves. A meta-analysis of these data is sorely needed; however, to date, we have been unable to obtain a sufficient amount of “hard” data from enough schools to perform this analysis.

**Table 1. Factor Analysis. Rotated Component Matrix Showing Loadings on Six Conceptual Factors**

<b>Environment (Factor 1)</b>	
0.922	Provide an environment that is inviting
0.801	Held to high expectations and all academic
0.770	Provided an environment that is safe
0.769	Provided an environment that is supportive
0.746	Teachers who are held to high expectations regarding their performance
0.692	Teachers who actively engage student in the learning process
0.518	School-wide efforts that foster health, wellness, and safety
<b>Affect (Factor 2)</b>	
0.751	Organizational structures that support meaningful learning
0.745	Organizational structures that support meaningful relationships
0.705	School-wide events that foster family/community partnerships
0.667	An Adult Advocate
0.547	Opportunity to take part in exploratory program
0.531	Teachers who vary their learning approach
<b>Teachers (Factor 3)</b>	
0.804	Teachers who are responsive to diverse student needs
0.741	Teachers who value working with adolescents
0.720	Teachers prepared to work with young adolescents
0.507	Are provided with multifaceted guidance/support services
<b>Teaching Teams &amp; Integrated Curriculum (Factor 4)</b>	
0.753	Teachers who plan during a common planning time
0.737	Teachers participating in interdisciplinary teaming
0.654	Instructions that is developed through the use of integrated curriculum
<b>Leadership (Factor 5)</b>	
0.841	Principals who collaborate in their leadership role
0.778	Principals who encourage a school-wide common vision
0.525	Assessed by evaluation programs that promote quality learning approaches
<b>Sports &amp; Grouping for Intramural (Factor 6)</b>	
0.699	Intramural sports
0.625	Scholastic sports
0.483	Heterogeneous grouping environment

\*Extraction Method: Principal Component Analysis a. rotation converged in 8 iterations

\*Rotation Method: Varimax with Kaiser Normalization

➤ *“The primary question that educators, parents, and policy makers have about middle school is ‘Does it Work?’ or ‘Will this model result in higher achievement while meeting other developmental needs of young adolescents as well?’ The myth that middle schools are ‘too soft’ and lack academic rigor persists, and many in the general public so believe, in spite of evidence to the contrary. We need to debunk this myth about middle schools.”*

(NMSA, 2003)

➤ *Principals of 6-8 Middle Schools report that their schools frequently have teams of teachers assigned to common planning periods. However, teachers in these same schools often differ significantly with their principal’s perceptions about teaming, common planning time, and interdisciplinary approaches to instruction.* (ISI national pilot study, 2004.

➤ *While a few schools have sought to save money and maximize use of facilities, others have incurred greater costs by switching to elemiddles, built new K-8 facilities, and/or reduced the number of students in existing facilities. It would appear that cost and facilities are not the forces driving adoption of the elemiddle school concept; rather, it is other schooling factors associated with student success.*

(Hough, D. 2004)

➤ *K-8 Elemiddle Schools tend to provide more opportunities for students in grades 6-8 to participate in intramural athletic programs than do 6-8, 7-8, 7-9, and 7-12 schools. These latter school types tend to encourage interscholastic sports over intramurals.* (ISI national pilot study, 2004)

Lesson #7. Descriptive studies should not be misunderstood to be “prescriptive” studies. While it is possible to identify to some degree the relationship of grade configuration to practices such as teaming, cross-age tutoring, integrated inquiry-based teaching and learning strategies, intramural sports programs, cooperative learning, et cetera operational at some level in middle grades schools, their relationship to student achievement is also descriptive, not prescriptive.

Lesson #8. Elemiddle schools often have smaller class sizes and /or a fewer total number of students in the school than schools with other grade span configurations. Elemiddles generally have a greater degree of parent involvement, and they eliminate at least one additional transition of students from one school to the next.

### ***Policy Implications***

School boards and other policy making groups are cautioned against switching to a K-8 or PK-8 (or any other grade configuration) without simultaneously ensuring that middle grades best or promising practices accompany the switch. If the practices accompany the switch in grade configuration and these grades include K-8 or PK-8, then you may have yourself an elemiddle school.

Any change in practice should include a comprehensive, longitudinal evaluation. Baseline data are essential for any quality evaluation. Formative data and findings should inform and guide practice. Summative data should determine overall program effectiveness.

Don't jump on any bandwagon. Fads come and go. The middle school movement that began in the mid-1960's was not and is not a fad. It represents a fundamental shift in education, just as the junior high school movement did, beginning circa 1910.

Grade spans do make a difference. Given the above disclaimers, the ISI research teams' various studies, coupled with the Principal Investigator's fifteen year history of studying middle grades issues, leads us to conclude that the K-8 and PK-8 school grade configurations, at present, are more closely related to higher levels of implementation of the middle grades philosophy. Elemiddles are also related to more positive teaching and learning outcomes than any other school grade span configuration we have studied.

The positive outcomes that are supported in the research literature include higher student academic achievement, higher attendance rates, more parent / family support and involvement in the school, fewer behavior problems, and lower dropout rates / higher graduation rates subsequently in high school.

The position that grade span DOES make a difference should not be misconstrued to mean that the same positive outcomes are not being achieved in some other schools with different grade span configurations, nor is it to be misconstrued to mean that similar positive outcomes cannot be achieved in other types of middle grades schools. It reflects what we have found to be an accurate description based on the information currently available at this time.

The ISI national pilot study supports the need for a national data base to examine these issues more thoroughly. Were such a data base available, many of the issues associated with middle grades education could be addressed more definitively.

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➤ **Approximately 4.1% of all middle grades research addresses student academic achievement. Well over one third of the research addresses leadership and teaching. Less than 2% addresses professional development and parent / family involvement.**  
(Hough, D. 2003)

➤ **A significant number of K-8 elemiddle schools across the United States report higher student achievement, better attendance, fewer discipline problems, and overall better school climate when compared to schools configured as 5-8, 6-8, 7-8, 7-9, or 7-12.**  
(Hough, D. 2004)

➤ **Approximately 95% of all studies addressing the relationship between grade-span configuration and student outcomes, including achievement, have been conducted independently by schools and school districts.**  
(Hough, D. 2004)

### **Institute for School Improvement**

*The Southwest Missouri State University Institute for School Improvement provides administrative oversight for a number of professional development programs and conducts research to examine the impact of such programs on teaching and learning.*

### **Research**

*The Institute utilizes both qualitative and quantitative approaches to conduct evaluative, descriptive, predictive, and applied research studies that focus primarily on curricular and instructional processes as they relate to classroom practice and student outcomes, including but not limited to achievement.*

### **Organization**

*Established in September 1998, upon approval by the SMSU Board of Governors, ISI is currently one of three support units with in the College of Education and an affiliate of the Professional Education Unit.*

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### **Key Resources**

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