



# Research Report

**LITERATURE REVIEW ON MIDDLE  
LEVEL GRADE SPAN CONFIGURATIONS**

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# TABLE OF CONTENTS

<b>ABSTRACT</b> .....	Pg. 1
<b>HISTORICAL BACKGROUND</b> .....	Pg. 5
<b>OVERVIEW</b> .....	Pg. 5
Other Factors to Consider .....	Pg. 6
Transitions.....	Pg. 8
Quality Program versus Configuration.....	Pg. 9
Peer Appropriate Grouping.....	Pg. 10
Middle School Preferences .....	Pg. 10
K-8 Revival.....	Pg. 11
Implementation Issues .....	Pg. 13
Teacher Training and Professional Development.....	Pg. 14
<b>CONCLUSION</b> .....	Pg. 15
<b>BIBLIOGRAPHY</b> .....	Pg. 17



## ABSTRACT

Empirical research about grade configuration at the middle level is sparse, and most of the qualitative and anecdotal information is coming from the States. The overall consensus is that there are no definitive answers to the question “what is the best configuration?” Each configuration has its own distinct advantages and disadvantages.

“Despite the perpetuity of this debate, the overall literature suggests that...grade level configuration alone appears to bear little consequence on student learning, school adjustment, and personal growth.” (Huss, 2004). In fact the impact of grade span is thought to be relatively minor in comparison to factors such as teacher instructional practice, school leadership, family and peer support, facilities and resources, and community support.

Ultimately, the decision to remix grade configurations is often more pragmatic than philosophical or academic. Rather than debate the configuration issue, districts should perhaps be determining the desirability of alternative grade configurations according to other important contextual or administrative factors. These may include: geographic location, community values and preferences, financial resources, projected enrolments, space constraints, transportation costs, the number of school to school transitions, the size of the school, the need for conversion of facilities, neighbourhood diversity, and/or overall school goals. (Howley, 2002; Paglin & Fager, 1997; Reeves, 2005; Renchler, 2002).

The issue of school to school transitions is one of the more prevalent themes throughout the grade span configuration literature and it is generally agreed that transitions are disruptive to the social structure in which learning takes place. In effect, the more transitions a student makes, the worse the student performs (Wren, 2004). The recurring recommendation in the literature however is that carefully planned, smooth transitions are important whenever they occur. The most critical factor is that, whenever transitions occur, schools must be responsive to the needs of incoming students and provide targeted comprehensive transitional programs to facilitate the process.

At the intermediate level, many researchers caution against equating the middle level “concept” or philosophy with any specific grade configuration or organisational structure. Because the findings about the effectiveness of various configurations are inconclusive, the general consensus is that “effective programs and practices, not grade configurations, determine the quality of schools”. The answer to the debate about which configuration is best “should be found in schools where middle-level promising practices are most easily and readily implemented at the highest degrees for the longest periods of time, resulting in positive student outcomes.” (Hough, 2005)

There are also conflicting arguments about the most appropriate placement of grade 6 students. Some research points to an achievement advantage when grade 6 students are located in an elementary configuration. On the other hand, there is general agreement that students in grade 6, 7 and 8 have more in common developmentally in terms of physical, psychological, social and intellectual variables than other age-grade combinations and constitute an appropriate peer grouping.

In spite of some highly publicised K-8 reorganisations in a few districts in the US recently, the overall trend has been a decrease in K-8 configurations over several decades and a rise in the middle level model within a three-tier organisation. Nevertheless, reports of behavioural problems and lagging achievement in the middle grades (e.g. TIMSS studies in the US) are often associated with the middle school concept, and have prompted some school districts to explore other alternatives.

The recent trend toward the revival of K-8 elementary schools in a few school districts (Pardini, 2002) has been one response. Several small qualitative or anecdotal research studies have favoured a K-8 model (Hough, 2005), suggesting that there may be some advantages to this configuration in terms of achievement, behaviour, safety, parental involvement, attendance, school and class size. At the same time, the K-8 configuration comes with its own set of potential disadvantages or problems. In facilities where the middle grade enrolments are smaller, for example, there may be fewer resources available (e.g. time, money, staff, space) to enrich the middle level program. Schools with smaller enrolments are less likely to be able to provide a

broader complement of specialised electives or courses, a full range of extra-curricular activities, and/or specialised facilities and services (Beane & Lipka, 2006).

Hough (2005) proposed the label “elemiddle” to define schools that focus on serving students between 10-14, and cautioned that the curriculum and practices in the middle level sector should not just mimic the elementary school. Unfortunately while the creation of middle schools made steady progress, traditional schooling cultures often remained. In these cases, the real problem is that middle level components have not been well or fully implemented and/or they are practised inconsistently (Beane & Lipka, 2006). The poor performance of many middle schools is more likely attributed to inadequate implementation of the middle school concept than any weakness in the model itself. (Look, 2006).

Particularly at the middle level, the professional training of teachers may be the key factor in determining how well teachers accept the established tenets of effective practice and how well they subsequently implement them. Research suggests that fewer than one in four middle grade teachers have specialised preparation for this level, so targeting teacher learning and staff development may hold promise as an effective intervention to strengthen those areas where teacher attitudes conflict with the middle school concepts.

Overall the review of the literature revealed many unanswered questions and inconclusive or conflicting results regarding grade span structures. The relationships between program implementation and student performance as they relate to various grade span configurations still needs to be more thoroughly examined. It seems however that some school districts view the re-structuring of grade spans and facilities as a “quick or easy fix” for unsatisfactory student performance results. Instead, in an article in RMLE Online, Schmitt (2004) suggests that:

“In their efforts to improve student achievement, policymakers would be better advised to concentrate on fully implementing (middle school) programs and providing high quality professional development for teachers to improve student learning than to engage in abstract debates over other factors not supported by research. Grade configuration appears to be one of

those factors currently being debated for which the research regarding student achievement is inconclusive. Improving student performance ...can best be achieved when an entire school community focuses on common goals as part of a whole school reform initiative.”

## **HISTORICAL BACKGROUND**

There are numerous grade span configurations and combinations currently in use across Canada and the United States at all levels. Historically grade structures have evolved from a predominately K-12 or K-8, 9-12 model in the early 1900's, through the addition of an intermediate component (e.g. combining grades 7-9 as junior highs) around mid-century. The emergence of a K-5, 6-8, 9-12 structure with a middle school focus began in the 1970's. Traditionally, decisions about grade configuration were based primarily on pragmatic factors such as geography, enrolments, economics or politics rather than the academic needs of students.

The one clear trend in the 20<sup>th</sup> century was the rise and decline of the junior high model and the emergence of the middle school concept. This change reflected a shift not only in grade placement but also a conceptual change. The departmental, subject based approach evident in the junior highs in preparation for high school was giving way to an approach that was intended to meet both the academic as well as social, psychological needs of young adolescent learners through a more child-centred institution, with appropriate teacher training.

This trend towards a middle school structure has prevailed in the past few decades (e.g. at ~60%, the grade 6-8 model was the most common configuration in the US in 2000). In recent years, however, a shift back to a more traditional K-8 model is being proposed again by some reformers (Hough, 1995), while other districts are rethinking a variety of arrangements at all levels. Although these recent developments do not constitute a nation-wide trend, the debate is re-opening about how to best to balance the focus on the academic and social needs for all students, and particularly young adolescents.

## **OVERVIEW**

Empirical research about grade configuration at the middle level is sparse, and most of the qualitative and anecdotal information is coming from the States. Although the majority of grade span research and this literature review focus primarily on middle level grade span configurations, the findings have implications for grade structures at all levels.

The overall consensus is that there are no definitive answers to the question “what is the best configuration?” The topic is a complex and controversial issue, but no single configuration has proven to best serve all the goals and purposes of middle level education. (e.g., academic achievement, student development, social adjustment, high school preparation, parental involvement, etc.). Each configuration has its own distinct advantages and disadvantages. The suggestion then would be that school boards are better served by basing their decisions on their own district goals and priorities, and focusing on building on the positive potential strengths and minimising the weaknesses of whatever grade span is in place (Paglin and Fager, 1997).

“Despite the perpetuity of this debate, the overall literature suggests that...grade level configuration alone appears to bear little consequence on student learning, school adjustment, and personal growth.” (Huss, 2004). Although some studies “suggest” a possible relationship between grade configuration and student success, its specific influence is unclear. Generally the impact of grade span is thought to be relatively minor in comparison to factors such as teacher instructional practice, school leadership, family and peer support, facilities and resources, and community support.

## **Other Factors to Consider**

Structural changes are frequently not based on academics and achievement. Rather than debate the configuration issue, districts should perhaps determine the desirability of alternative grade configurations according to other important contextual or administrative factors. These may include: geographic location, community values and preferences, financial resources, projected enrolments, space constraints, transportation costs, the number of school to school transitions, the size of the school, neighbourhood diversity, and/or overall school goals (Howley, 2002; Paglin & Fager, 1997; Reeves, 2005; Renchler, 2002).

Likewise there has been very little research published on factors such as student engagement and motivation, aspirations, school climate or disciplinary issues which were important components of the original middle school reforms. These should also be taken into consideration when measuring the effectiveness of various grade span structures (Look, 2006).

The following list outlines a variety of factors, beyond student achievement, that should be examined when determining what grade span configuration(s) might work best for your community (Craig, 2006; Paglin & Fager, 1997):

- Demographics/ population of community (K-8 in smaller districts combines resources and saves costs; while large boards have more flexibility)
- Preferred school size (fewer large schools, more small schools, “standard” sizes...)
- Site availability (separate locations, shared sites, adjacent campuses....); inventory of facilities; potential loss of local schools
- Building design/ suitability/ capacity
- Impact on transportation costs (cost and length)
- Length of bus ride
- Number of transitions
- Parent involvement (community input into decision is critical as well); involvement affected by distance to school and the number of different schools their children attend
- Number of students at each grade level affects class groupings and course offerings
- Opportunities for interaction between age groups (older students as role models, mentors); appropriateness of grouping certain grades/ ages together
- Influence of older students on younger students (positive and negative)

It should be noted that any major realignment of grade configuration would require some conversion, modernisation and/or replacement of facilities, so it would be important to plan for potential enrolment shifts well in advance. A school district would need to know their future directions in order to develop and implement an appropriate facility plan.

The rest of this review addresses in more detail some of the other topics that continue to re-surface in the discussions surrounding grade span configurations. These issues include:

- Transitions
- Quality program versus configuration
- Peer appropriate grouping

- Middle school preferences
- K-8 revival
- Implementation issues
- Teacher training and professional development

## **Transitions**

The issue of school to school transitions is one of the more prevalent themes throughout the grade span configuration literature. It is generally agreed that transitions are disruptive to the social structure in which learning takes place. Transition year movement tends to negatively impact student achievement and participation, and motivation (although losses are often regained within one year). With transitions, it is generally not the age of the student that matters but the change itself.

One study conducted in a large inner city district in Midwest looked specifically at grade span configuration and transitions. The findings indicated a positive relationship between grade span and achievement – and that the more grade levels a school services the better the students perform. Similarly, significant differences were observed for students experiencing one school-to-school transition, compared to two and three transitions. In effect, the more transitions a student makes, the worse the student performs (Wren, 2004)

Some earlier studies also pointed to a greater achievement loss associated with the transition from elementary to middle school at grade 6, and from middle to secondary school in grade 9, compared to students who were in K-8 schools (Alspaugh, 1998). On a related note, Alspaugh also reported that the students who transitioned from multiple elementary schools and merged into one middle school experienced greater achievement loss compared to those students who transitioned from a single elementary school into one middle school.

The recurring conclusion in the literature is that carefully planned, smooth transitions are important whenever they occur. Whenever transitions occur, schools must be responsive to the needs of incoming students and provide targeted comprehensive transitional programs to

facilitate the process. It is suggested that students visit the school they will be attending, while administrators and school counsellors from the feeder and receiving schools meet to discuss programs and ways to help students make a smooth transition from elementary to middle school and from middle school to high school. One study cited by Wren (2004) found that middle schools offering transition programs that targeted all three of students, parents and staff produced high school students with higher GPA's and fewer dropouts (compared to schools with minimal or no transition programs).

## **Quality Program versus Configuration**

At the intermediate level, many researchers caution against equating the middle level “concept” or philosophy with any specific grade configuration or organisational structure. There is a recognition that grade span alone does not guarantee that students will learn and be well adjusted. Because the findings about the effectiveness of various configurations are inconclusive, the general consensus is that effective programs and practices, not grade configurations, determine the quality of schools (National Middle School Association, 2003). The type of program offered and the quality of the learning environment, rather than grade organisation, is the critical factor in determining success.

As Mizell (2004) points out, “there is not adequate research to provide definitive guidance about the relative effectiveness of K-8 and 6-8 schools, but there is no shortage of information and models for how to educate youth effectively in the middle grades, regardless of the configuration”. The answer to the debate about which configuration is best “should be found in schools where middle-level promising practices are most easily and readily implemented at the highest degrees for the longest periods of time, resulting in positive student outcomes.” (Hough, 2005)

In that regard, there is much literature about the critical educational components and practices that are recognised as essential for young adolescents. Some sources include the

National Middle School Association, *Turning Points: Preparing American Youth for the 21<sup>st</sup> Century* (1989) and *This We Believe: Successful Schools for Young Adolescents* (2003).

## **Peer Appropriate Grouping**

Much discussion also revolves around the most appropriate placement of grade 6 students and whether or when they should move away from the self-contained classroom environment of elementary school. Again there are conflicting arguments. Some research points to an achievement advantage when grade 6 students are located in an elementary configuration. One study from Connecticut reported that where high stakes testing (like EQAO in Ontario) was concerned, schools made better progress if they were directly accountable for their grade 6 results e.g. such as in K-6 or K-8 schools versus a K-5 or middle level configuration. (Tucker & Andrada, 1997).

On the other hand, there is general agreement that students in grade 6, 7 and 8 have more in common developmentally in terms of physical, psychological, social and intellectual variables than other age-grade combinations and constitute an appropriate peer grouping. A similar argument suggests that grade 9 students are better placed in a secondary school. The feeling is that grade 9's are more likely to be positively influenced by senior students, while they are less likely to be a positive influence on grade 7 and 8 students.

## **Middle School Preferences**

Although there have been some highly publicised K-8 reorganisations in a few districts in the US recently, the overall trend has been a steady decrease in K-8 configurations over several decades. During the same timeframe there have also been significant decreases in junior high (7-9) and two-grade 7-8 schools. The middle level model within a three-tier organisational plan is still the most predominant and most preferred by middle level educators. (McEwin, Dickinson & Jenkins, 2003).

The prevailing notion is that developmental characteristics rather than expediency should drive grade span decisions. It is widely accepted that a school devoted exclusively to young adolescent needs will promote greater success, and that if separate sites are not feasible, districts should attempt to establish a “middle school within a school” structure.

The “Schools to Watch” initiative in the US identified several middle schools (6-8) that are meeting the criteria of quality middle level education and educating students effectively, and suggests that other schools could learn from them rather than abandon the 6-8 model. In their view, other 6-8 schools that are on the brink of performing well need only some additional attention and support from their school systems to achieve greater success. However for those middle schools that consistently perform poorly, it is acknowledged that the conversion to a K-8 model may be an appropriate intervention. (Mizell, 2004)

Nevertheless, reports of behavioural problems and lagging achievement in the middle grades (e.g. TIMSS studies in the US) are often associated with the middle school concept, and this has prompted some school districts to explore other alternatives.

## **K-8 Revival**

The dissatisfaction with middle level outcomes in certain circles has prompted a renewed interest in and a trend toward the revival of K-8 elementary schools in some districts (Pardini, 2002). In theory, these structures would include a middle level component within an elementary configuration. While no large scale, empirical study has examined the relationship between grade configuration and student achievement, several small qualitative or anecdotal research studies have favoured a K-8 model. (Hough, 2005). Although the statistical research is limited, these studies suggest that there may be some advantages to this configuration in terms of achievement, behaviour, safety, parental involvement, attendance, and school and class size. In response, several large school districts (Baltimore, Philadelphia, Cincinnati, Cleveland, New York City...) are reverting many of their intermediate schools into a K-8 model.

One study comparing math scores on a standardised test revealed better performance in K-8 schools compared to middle schools in highly disadvantaged areas. On the other hand, a recent study in Philadelphia produced no evidence of academic advantage to K-8 schools based on grade averages and marks, although 8<sup>th</sup> graders felt safer and scored higher on measures of self-esteem.

Hough (2005) proposes the “elemiddle” label to define schools that focus on serving students between the ages of 10-14. Citing several non-empirical studies, he believes the philosophies of elementary education in this model will better serve the needs of young adolescents than the middle school structure. The Institute for School Improvement’s 2004 policy brief reports that K-8 elemiddles were most consistently producing desirable results, and implementing a middle school philosophy.

The reformers’ rationale for K-8 schools includes greater continuity of K-8 curriculum, fewer transitions, remaining in neighbourhood schools, fostering relationships with staff, more parental involvement, leadership opportunities for young adolescents, etc. Their intention is to offer a more comfortable familiar setting, but it should be cautioned that the curriculum and practices in the middle level sector should not just mimic the elementary school. K-8 buildings may benefit from a “school within a school” concept to avoid sacrificing middle level needs to traditional elementary priorities (Huss).

At the same time, the K-8 configuration comes with its own set of potential disadvantages or problems. Compared to schools with a narrower grade configuration, a K-8 arrangement might not be able to as effectively attend to the specific developmental stage of a particular age group or provide age range services tailored to unique needs (Fager & Paglin, 1997). In facilities where the middle grade enrolments are smaller, there tends to be fewer resources available (e.g. time, money, staff, space...) to enrich the middle level program. Schools with smaller enrolments are less likely to be able to provide a broader complement of specialised electives or courses, a full range of extra-curricular activities, and/or specialised facilities and services (Beane & Lipka, 2006).

## Implementation Issues

A majority of schools shifted from a junior high (7-9) to a middle school organisational model (5-8 or 6-8) in the past few decades, and in anecdotal studies the middle school model appears to be most favoured by school administrators.

While the creation of middle schools has made steady progress and a survey of teacher ratings of middle school tenets revealed substantial acceptance across various organisational settings, traditional schooling cultures often remained. Schools that “blended” traditional structures with middle philosophies (e.g. teachers who were elementary-certified, or secondary-certified, or in a K-8 building, or taught grade 6 in an elementary school) demonstrated the most divergence from the middle school ideology. Although these are concepts that should be discernible regardless of where they are taught (Huss, 2004), a few studies from the mid 1990’s showed that the recommended programs and practices for this age group were more likely to be implemented in the middle school grade configuration. (Epstein & MacIver, 1990; McEwin, 1995).

When schools actually implement the components of the middle school “concept”, academic achievement does increase and behaviour problems decrease. The real problem is that on the whole the components have not been well or fully implemented and/or they are practised inconsistently (Beane & Lipka, 2006). Poor performance of many middle schools is more likely attributed to inadequate implementation of the middle school concept than any weakness in the model itself. (Look, 2006).

Hough (2005) cautions that only those schools who are implementing middle level best practices (either in a K-8 or a 5,6-8 configuration) should be labelled correctly as either an “elemiddle” or a “middle school”. His belief is that the schools that are more fully implementing the middle-level concepts are the ones outperforming those that are not.

## Teacher Training and Professional Development

Particularly at the middle level, the professional training of teachers may be the key factor in determining how well teachers accept the established tenets of effective practice and how well they subsequently implement them. Research suggests that fewer than one in four middle grade teachers have specialised preparation for this level and this “appears to be a perennial roadblock to excellence in middle level education” (Huss, 2004). Hough (2003) believes that middle school practices are more acceptable and easier to achieve with elementary-trained teachers and that elementary and/or middle school certification should be given priority over secondary certification when considering staffing at this level.

Effective middle level teachers need to identify with and buy into the middle level philosophy. Although teachers may appear to be implementing the appropriate program components, if they don’t embrace the concepts they are “implemented without integrity”. Targeting teacher learning and staff development may hold promise as an effective intervention to strengthen those areas where teacher attitudes conflict with the middle school concepts.

A recent study by Schmitt (2004) found that a significant percent of the 6-8 middle level schools she examined were more highly engaged in professional development activities than their K-8 and 7-12 counterparts. However, when taken together, professional development and grade configuration were not found to have a direct relationship to student achievement. The findings suggested that relationships among professional development, grade configuration, and student achievement may exist but cannot be fully explained until researchers are able to identify and account for other variables (e.g. including implementation).

## CONCLUSION

Overall the review of the literature revealed many unanswered questions and inconclusive or conflicting results regarding grade span structures. For example, one viewpoint was that too many middle schools have not fully implemented consistent programs and practices, while another study concluded that grade 6-8 schools implement middle school programs and practices at higher levels than any other grade-span. In contrast, several small studies have suggested that K-8 schools realise higher academic achievement results (Hough, 2005) although the extent to which they are implementing middle level concepts is not always clear. One possible area for further investigation then would be to more thoroughly examine the relationships between program implementation and student performance as they relate to various grade span configurations.

Some school districts perhaps view the re-structuring of grade spans and facilities as a “quick or easy fix” for unsatisfactory student performance results. It would seem that “rather than grappling with the difficult substantive issues ...of engaging students in challenging academic work...and providing them with the personal and academic supports necessary...(they) have (instead) focused on changing schools’ grade configurations and reassigning students” (Mizell, 2004).

The following quote from Vicki Schmitt (2004) aptly summarises both the ongoing debate about grade configurations and the policy implications:

“In their efforts to improve student achievement, policymakers would be better advised to concentrate on fully implementing (middle school) programs and providing high quality professional development for teachers to improve student learning than to engage in abstract debates over other factors not supported by research. Grade configuration appears to be one of those factors currently being debated for which the research regarding student achievement is inconclusive. Improving student performance ...can best be achieved when an entire school community focuses on common goals as part of a whole school reform initiative.”



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