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# Fundamentals for Student Success in the Middle Grades

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National Middle School Association Presents

# Fundamentals for Student Success in the Middle Grades

- Characteristics of Young Adolescents
- National Recommendations
- Research





Twenty million young adolescents attend our schools each day. These 10-to 15-year olds are full of hopes and dreams, energy and expectations. It is our responsibility as community members and educators to assure that every young person has a quality education that allows the young adolescent to succeed now and in the future.

## Essential Questions

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1. Who are young adolescents?
2. What should schools do to provide quality education?
3. Do recommended practices improve student achievement?



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Determining how to provide the best education possible for young adolescents begins with the answers to three essential questions:

Who are young adolescents? What do we know about them, their abilities, interests and strengths?

Based on what we know about young adolescents, what should schools do to provide a quality education for each and every student?

And finally, is there evidence that these recommended practices improve student achievement? How do we know programs and practices designed specifically with young adolescents in mind make a difference?

## Overview

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- Developmental characteristics and implications for practice
- National recommendations
- Research



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To answer these questions, we will first outline some of the developmental characteristics of young adolescents and look at the implications for teaching and learning.

We will then look at national recommendations for schools based on what we know about young adolescents.

Finally, we will consider some of the research that supports these recommendations.

## Characteristics of Young Adolescents



- Physical
- Cognitive
- Social/Emotional



One way to answer the question, “Who are young adolescents?” is to look at their physical, cognitive, and social/emotional development.

## Physical Development

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- Rapid, intense growth
- Height and weight
- Internal organs
- Bone and muscle
- Balance and physical coordination
- Secondary sex characteristics
- Nutrition and hydration



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Between the ages of 10 and 15, the human body undergoes the most intense and rapid growth, second only to the first two years of life.

With the onset of puberty, a 12-, 13- or 14-year old may grow as much as 6 inches in a year, and put on 10 pounds. A pair of shoes that fits the 12-year-old in January may be too small by April.

Heart, lungs and other internal organs increase in size and capacity. Muscles and bones lengthen, although often at different rates. As a result, bones sometimes lack the protection of muscle fibers, causing the very real physical discomfort of “growing pains.”

That part of the brain that coordinates physical movement, the cerebellum, is not yet efficient at controlling balance and physical coordination, because it, too, is maturing during these years.

Secondary sex characteristics begin to mature during these years. And to fuel all this growth, the body demands food and water. It's no wonder the young adolescent always seems to be hungry and thirsty.





- Personally unique calendar
- Inconsistent and variable growth



The order and the timing of these physical changes is unique to each young person. No two growth and development calendars are the same.

In addition, the physical changes within each person are variable. Arms and legs, ears and noses do not grow at the same time, nor do they grow in proportion to each other.

Yes, young adolescents sometimes look awkward and self-conscious. They also feel awkward and self-conscious.

- Opportunities for movement
- Nutrition
- Assurance
- Variety
- Guidance



So, what are the implications for teaching and learning?

To begin with, young adolescents need to move.

They need plenty of good food and water throughout the day.

They also need assurance that the changes they are experiencing and the differences they see among themselves are normal.

Young adolescents need opportunities to learn and participate in a wide variety of activities in the classroom, on the playing field, in arts programs, in the community.

They also need help in learning how to accept themselves and each other.

### Development of

- Neural pathways
- Capacity for abstract thought
- Problem-solving and reasoning abilities
- Metacognition



A young adolescent's rapid physical growth is accompanied by changes in cognitive ability.

Young adolescents are poised to learn. The brain is undergoing a "growth spurt," expanding and refining neural pathways, enhancing the ability to learn.

Young adolescents begin to think and operate in the realm of abstract concepts. They are increasingly able to problem-solve, reason, and analyze. They begin to think metacognitively, stepping outside and observing their own thought processes. It is important to remember, however, that these are *emerging* abilities, not strengths.

### Prefrontal cortex

- Planning
- Anticipating consequences
- Attention
- Decisions



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The prefrontal cortex, that part of the brain where “executive” functions occur – planning, anticipating consequences, initiating and shifting attention, making decisions – continues to mature throughout the adolescent years. As a result, the young adolescent’s abilities to plan ahead, make decisions based on anticipated consequences, or remain focused and attentive for long periods of time are still developing.



- Interesting and challenging curriculum
- Opportunities to bridge from concrete to abstract
- Practice
- Expert teachers



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So, what does this mean for school? First, young adolescents need curriculum that piques their interests and challenges them to learn. They need opportunities to bridge from concrete experiences to abstract thinking. They need to practice problem-solving, analyzing, and reasoning; and, they need teachers who can help them develop these new abilities. If we want young adolescents to achieve academically, teachers must be expert at developing curriculum and teaching students across a wide spectrum of strengths and emerging abilities.



- Awareness of others
- Sense of fairness
- Social consciousness



Finally, young adolescence is a time of rich social and emotional growth. Where young children are primarily concerned with their own needs, young adolescents begin to look outside themselves and consider how other people think and feel. Young adolescents possess a strong sense of fairness and begin to develop a social consciousness. "That isn't fair!" is not simply a 13-year-old's complaint; it is a mark of a developing sense of justice and equity.

### “Who am I?”

- Developing personal identity
- Pleasing peers
- Separating from family
- Growing independence



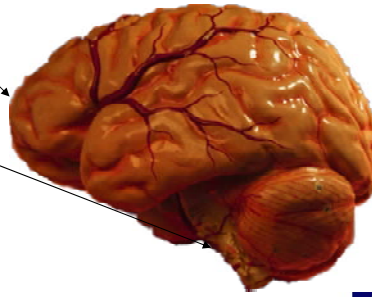
One of the jobs of adolescence is to explore the questions, “Who am I? Where do I belong?” As young adolescents embark on this task, they experiment with aspects of personal identity – clothing, hairstyle, music choices, slang, even friends. They become increasingly concerned with pleasing their peers and less overtly concerned with pleasing adults.

They begin to see themselves as individuals, separate from their families. At the same time, they still rely on the authority of the family for critical decisions.

This can be a stressful time for the young person and for the adults in her or his life, as the young adolescent assert a growing sense of independence, sometimes appropriately, sometimes inappropriately.

### Sudden, intense emotions

Prefrontal cortex  
+ Amygdala  
—  
Surge protector



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Compounding this is the fact that the 10- to 15-year-old often experiences sudden and intense emotions that come on without warning. Sometimes the young person can't even name the feeling. The prefrontal cortex and the amygdala, that part of the brain that identifies and modifies emotions, work together like a surge protector, enabling the adult to manage emotional responses. But a young adolescent's prefrontal cortex is not fully developed and does not yet coordinate with amygdala to buffer emotions.





- Support
- Help students understand
- Maintain safe environment
- Build positive relationships



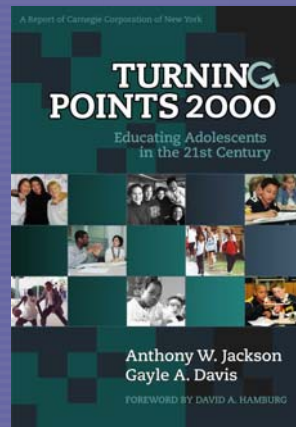
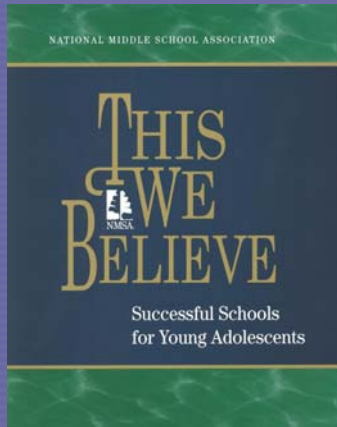
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Given what we know about young adolescent social and emotional growth, how can schools facilitate academic learning?

Rather than criticize or tease the 12-year-old about mood swings, changing friendships, and inconsistent attention span, staff must be supportive and encouraging. After all, these aspects of student development are opportunities for growth, not impediments to learning.

Teachers must help students understand the changes they are experiencing and allay their fears and anxieties. Classrooms must be safe places to learn. Teachers need to build positive relationships with their students, and see them as capable, creative human beings. As the adage goes, “Kids don’t care what you know until they know that you care.”

## National Recommendations



Given what we know about young adolescent growth, what must schools do to assure a quality education for every 10-to 15-year-old? The most widely accepted and researched recommendations come from two documents of national prominence: *This We Believe: Successful Schools for Young Adolescents*, from National Middle School Association, and *Turning Points 2000: Educating Adolescents in the 21st Century*, a report of the Carnegie Corporation.



- Shared vision that guides decisions
- High expectations
- Collaborative, courageous leadership



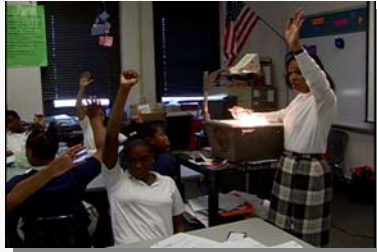
To begin with, school leadership is key. According to *This We Believe* and *Turning Points 2000*, all stakeholders in the school must share a vision for student success that guides all policy and programmatic decisions. High expectations set the standard for everyone in the school, and leadership must be collaborative and courageous.

## Educators

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- Prepared
- Interested
- Able



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Middle grades schools must be staffed with educators who know how to work with young adolescents. We expect the pediatrician to have skills and knowledge to treat children's health needs – needs that are different from other age groups. We should expect the professionals who teach our 10-to 15-year olds to have the desire and ability to work with this age group.



- Relevant and challenging
- Integrative
- Exploratory
- Variety of teaching methods



The curriculum in middle schools must be relevant and challenging. It should integrate topics, and allow students to explore new ideas.

Because the physical growth and emerging cognitive abilities occur on timelines specific to the individual student, teachers must be competent with a variety of teaching strategies. Teachers must be able to choose methods appropriate to student skill and curriculum, so that every student can be an active learner.

## Assessment

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- Improves curriculum and instruction
- Demonstrates knowledge
- Promotes learning



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Assessment should be a tool to help students learn, not a punishment. Assessment should help teachers improve curriculum and instruction and allow students to demonstrate their knowledge and become managers of their own learning.

## Relationships for Learning

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- Teams
- Structured opportunities
- Safe, supportive environment
- Adult advocate



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Effective schools for young adolescents organize relationships for learning. Teachers work in teams to design instructional activities and structure opportunities to develop positive, healthy relationships through advisory groups, lunch gatherings, or other formats. Everyone in the school participates in maintaining a safe, supportive environment, and every student has at least one adult who knows, supports, and advocates for that young person.



- Health and wellness policies
- Safety
- Guidance and support



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Effective schools develop policies and walk the talk of health and wellness. Students and teachers participate in physical activities, practice good eating habits, and encourage each other to make healthy lifestyle choices. School must be a safe place physically and emotionally, and a place where students can find guidance and support as they navigate these years of early adolescence.



- Consistent communication
- Multiple avenues for involvement



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Recognizing the importance of family and community in the lives of students, effective schools create relationships and maintain consistent communication with all stakeholders. They open their doors through mentoring programs, volunteer opportunities, home-school initiatives, evening GED classes, and weekend arts programs.

## Research



- 3700 original studies
- 300 studies each year

Research informs good decisions about middle level practices. More than 3700 original studies specific to middle grades education were conducted between 1991 and 2002. Each study relied on systematic collection and analysis of empirical data. This body of research, an average of more than 300 studies each year, affirms that middle level education is a distinct level of schooling, and clarifies the need for specific middle level practices.

- University of Illinois
- 1995-2001
- Impact of national recommendations on student learning
- Student achievement and self-study
- Data from 7 states



Among the most informative studies are those conducted by The Center for Prevention Research and Development at the University of Illinois between 1995 and 2001. To evaluate whether or not the national recommendations affected student learning, CPRD looked at two sources of data: student achievement and a comprehensive school self-study. It is important to note that the self-study required participating schools to gather data not just from teachers and principals, but also from students and parents.

The researchers sampled hundreds of middle grade schools across Arkansas, Illinois, Louisiana, Massachusetts, Michigan, and Mississippi.

- Major finding: Implementation affects achievement
- Student achievement improves when teachers
  - Work in teams
  - Plan together
  - Have specific preparation



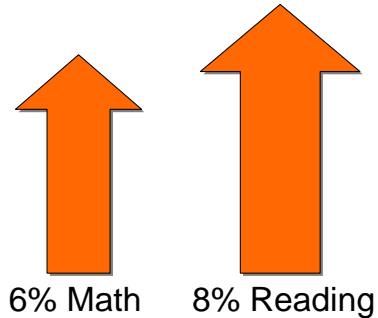
As an overview, CPRD found that the more completely the recommendations for middle grades school were implemented in a school, the stronger the positive impact on student learning and achievement.

They discovered, for example, that achievement scores are higher for students in school where teachers work as teams to develop integrated curriculum, plan for instruction, and make sure they know each of their students.

This achievement increases as teachers have dedicated, sustained, and regular time to plan together.

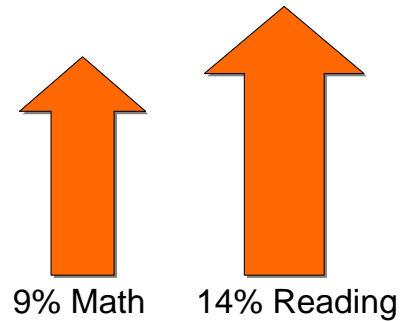
And finally, teachers who have had preparation and training that specifically addresses how to teach young adolescents engage more frequently in best practices, which, in turn, affects achievement.

- 130 middle schools
  - Teams
  - Common planning time
- Findings
  - 8% increase in reading
  - 6% increase in math



In one of the studies, CPRD looked at students across 130 Michigan middle schools between 1995 and 1997, where teachers and students worked in teams, and teachers met at least four times a week for a minimum of 30 minutes each time to plan. They discovered that the students improved by 8% in reading and 6% in math over the two years.

- Subset of schools
- High poverty
- 14% increase in reading
- 9% increase in math



In another study, the researchers looked at a subset of Michigan schools with a significant number of students living in poverty. They discovered an even greater rate of achievement: 14% in reading and 9% in math.

By contrast, in schools where teachers and students did not work in teams and where teachers did not plan together, there was actually a decline in academic performance.



- 2000-2001 study
- Teaming increases use of appropriate practices
  - Small groups, active learning
  - Connecting subjects
  - Assessment for learning
  - Teaching critical thinking skills



A third analysis conducted by CPRD between 2000 and 2001 revealed that the more teachers worked in teams, the more likely they were to use teaching practices recommended for young adolescents: using small group instruction where students were physically active, teaching content by integrating or connecting subjects, using assessment as a tool for learning, and teaching critical thinking skills.

## Studies published in 1997

- Student achievement
- Academic press
- Social support



The Chicago Consortium Studies, published in 1997 offer another look at the effect of middle grades practices on the academic achievement of 6th and 8th grade students.

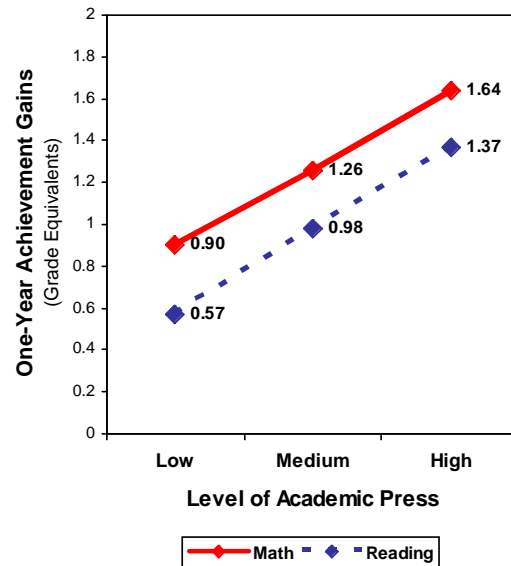
The studies looked at –

Student achievement, according to test scores on the Iowa Test of Basic Skills

Academic press, defined as a school's focus on academic achievement.

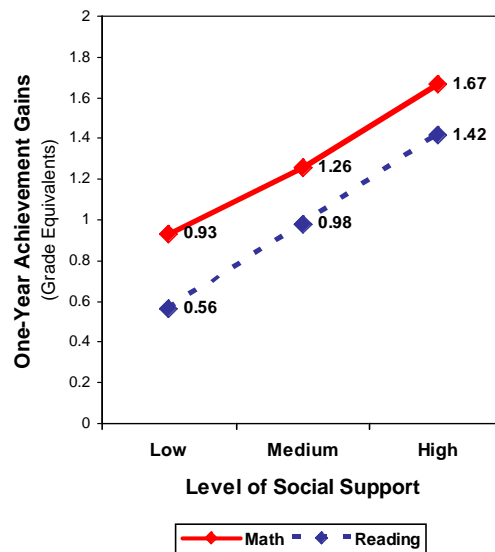
And, social support, which includes the extent to which teachers relate subjects to students' interests and make a point of understanding their students.





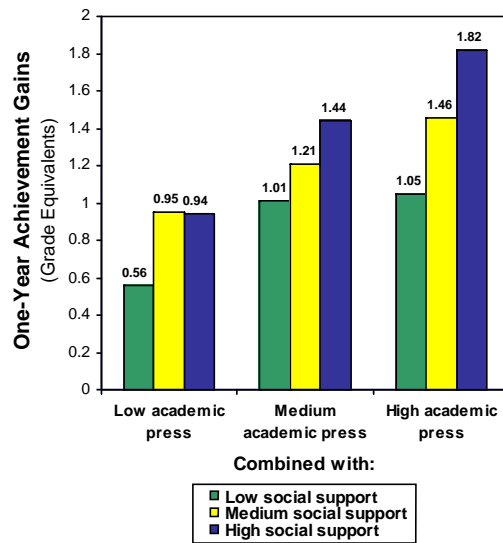
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The Chicago Consortium Studies revealed that students in schools with high academic press improved in reading by 1.37 grade equivalents, and in math by 1.64 grade equivalents.



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The study also found that students in schools with high support improved in reading and math by about one and a half grade level each.



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And students in schools with both high social support and high academic press improved in reading and math by about two grade levels each.

### Examined

- Academic achievement
- Socio-emotional development
- Behavior

### Middle grades practices

- Common planning time (CPT)
- Fewer than 120 students per team
- Frequent advisory periods
- Appropriate practices



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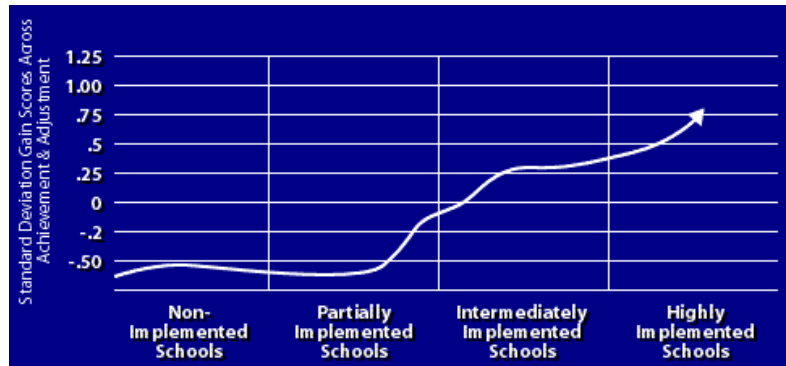
Finally, a 1997 study of 31 Illinois middle grades schools examined student achievement, socio-emotional development, and behavior in relationship to four aspects of middle grades practices:

1. Teaching teams had significant, dedicated time for common planning each week.
2. There were fewer than 120 students on each teaching team.
3. There were 4 to 5 advisory periods each week, where small groups of students met with one or two adults for support around studying, time management and other school-related issues.

And,

4. Educational practices were appropriate for young adolescents.

## Overall finding

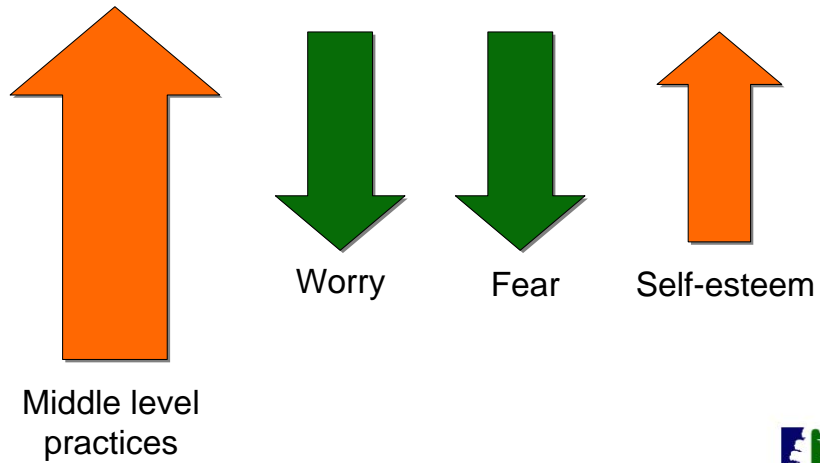


**Source:** Felner, R., Jackson, A., Kasak, D., Mulhall, P., Brand, S., & Flowers, N. (1997). Longitudinal study of a network engaged in *Turning Points*-based comprehensive school transformation. The impact of school reform for the middle years. *Phi Delta Kappan*, 78(7), 548.



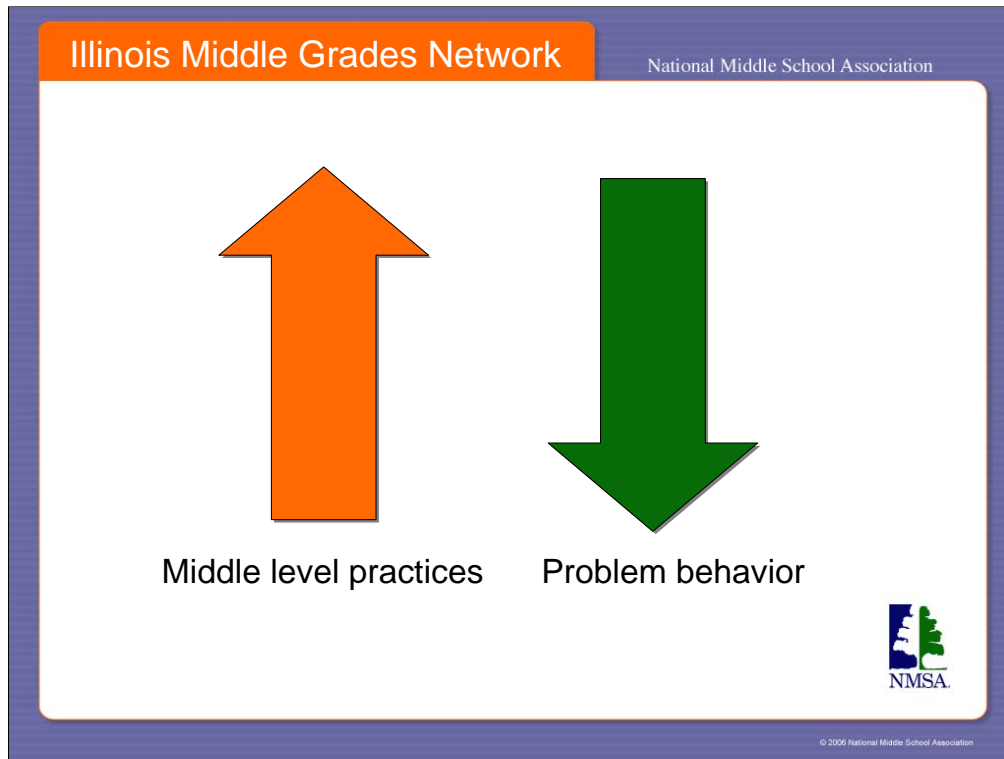
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The overall finding was that the more consistently and more fully the nationally recommended practices occurred as a total package, the greater the student achievement in mathematics, language, and reading.



Students in schools where middle level practices were more highly implemented also reported lower levels of worry and fear and higher levels of self-esteem.

This is important to note, because worry and fear inhibit one's ability to learn.



Finally, this Illinois study demonstrated that as the level of implementation of middle grades practices increased, problem behavior decreased.

The advantage, of course, is that as students and teachers spend less time negotiating behavior problems, the more time they can devote to classroom learning.

Students demonstrate academic growth when schools conscientiously apply the full array of middle level practices.



Over thirty years of research and practice reveal an important fact: Students demonstrate academic growth when schools conscientiously apply the full array of middle grades practices.

And that is the challenge. Sometimes schools yield to the temptation to make a few programmatic adjustments. They add a service learning day in the spring, assign students to small learning groups, or institute a block schedule. While any one of these practices has merit, it cannot, on its own, transform the school.

Similarly, changing a school's name from "junior high" to "middle school," or merging grades 6, 7, and 8 with the elementary school cannot guarantee improved classroom practices.

It is the comprehensive integration of educational practices known to benefit young adolescents that makes a difference.



# Acknowledgements

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