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# Students' Motivation During the Middle School Years

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The early adolescent developmental period is one in which individuals experience many changes, including the biological changes associated with puberty, important changes in relations with family and peers, and the social and educational changes resulting from transitions from elementary to junior high school and junior high school to high school (see Eccles & Wigfield, 1997; Wigfield, Eccles, & Pintrich, 1996). Different theorists (e.g.; Eccles & Midgley, 1989; Hill & Lynch, 1983; Midgley & Edelin, 1998) have proposed that these changes have significant impact on a variety of developmental outcomes. Many children make these changes relatively easily. Others, however, have difficulty with one or another of these changes and as a result are at risk for various negative outcomes. We focus in this chapter on changes in early adolescents' motivation and self-concepts, and how changes in these characteristics are influenced by different experiences in middle schools. A special focus of this chapter is on gender differences in motivation and self-concept at early adolescence. We begin the chapter with a brief discussion of some of the important biological and cognitive changes that occur during early

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adolescence, to provide background for our discussion of changes in children's self-concepts and motivation.

### **BIOLOGICAL AND COGNITIVE CHANGES AT EARLY ADOLESCENCE**

The biological changes associated with puberty are the most dramatic ones that individuals experience during their lifetimes (outside of prenatal development), and these changes have been used to characterize the early adolescent period as a period of "storm and stress," where there is a great deal of conflict between children, parents, and teachers (e.g., Blos, 1979; Hall, 1904). We have heard teachers (and parents) say that "If we could just lock kids up for those years things would be fine"! While it is undeniable that major physical changes occur during early adolescence, many researchers now believe that the characterization of this period as one of storm and stress is an overstatement (see, for example, Dornbusch, Petersen, & Hetherington, 1991). Yet Lerner, Entwisle, and Hauser (1994) again used the term "crisis" in their description of the state of contemporary American adolescents. Whether or not adolescents are in crisis, the biological changes they go through do have many influences on their thinking and behavior.

Because these changes occur at different times for boys and girls their impact on each sex differs (see Malina, 1990). There is some consensus that for boys early maturity is advantageous, particularly with respect to their participation in sports activities (see Malina, 1990) and social standing in school (Petersen, 1985). For girls early maturity can be problematic, as they will be the first to experience pubertal changes and thus can feel "out of sync" with their agemates (see Petersen, 1988; Simmons & Blyth, 1987; Stattin & Magnusson, 1990). In fact, Simmons and her colleagues report that early-maturing girls have the lowest self-esteem and the most difficulty adjusting to school transitions, particularly the transition from elementary to junior high school (e.g., Simmons, Blyth, Van Cleave, & Bush, 1979). Because girls enter puberty earlier than boys do, they are more likely to be coping with pubertal changes at the same time they make the middle-grade school transition than are boys, and thus are more likely to face multiple transitions simultaneously. Like early-maturing girls, later-maturing boys also may have some difficulties due to their physical development being out of synchrony with their agemates.

One important educational implication of this work concerns the issue of timing for the transition from elementary to secondary school. Many researchers and educational policy analysts urged that middle-grade school should begin earlier, so that students make the school transition before they enter puberty, and many school districts have followed this advice. Middle school now often encompasses sixth through eighth grade, rather than seventh through ninth grade. Others have argued that a K-8 organizational structure

may be most beneficial to early adolescents. There is increasing awareness among educators that this is a unique developmental phase that requires careful structuring of educational environments (see further discussion later).

A great deal has been written about how children's thinking changes during the adolescent years (e.g., see Byrnes, 1988; Keating, 1990). For our purposes the most important changes to note are the increasing ability of children to think abstractly, consider the hypothetical as well as the real, engage in more sophisticated and elaborate information processing strategies, consider multiple dimensions of a problem at once, and reflect on oneself and on complicated problems (see Keating, 1990, for more complete discussion). Abstract thought and hypothetical thinking are hallmarks of Piaget's formal operations stage, the stage that he and his colleagues stated should emerge during adolescence (e.g., Piaget & Inhelder, 1973). Currently there is much debate about when exactly these kinds of cognitive processes emerge, and many researchers now question whether the emergence of these processes reflects global stage-like changes in cognitive skills as described by Piaget. However, most theorists do agree that these kinds of thought processes are more characteristic of adolescents' cognition than of younger children's cognition (e.g., see Fischer, 1980; Moshman, 1998).

Along with their impact on children's learning, these changes in children's thinking have important implications for individuals' self-concepts and motivation. Theorists such as Erikson (1963) and Harter (1990) view the adolescent years as a time of substantial change in children's self-concepts, as they consider what possibilities are available to them and try to come to a deeper understanding of themselves. These sorts of self-reflections require the kinds of higher-order cognitive processes just discussed. With motivation increasingly conceived in cognitive terms these changes also have implications for early adolescents' motivation.

### **CHANGES IN SELF-CONCEPT AND MOTIVATION DURING EARLY ADOLESCENCE**

#### **Self-Concept and Identity Development During Early Adolescence**

As just noted, adolescence has long been thought to be a time of great change in children's self-concepts. Erikson (1963), in his ground breaking work, characterized adolescence as the time in which individuals searched for their identity, either finding it or sinking into role confusion. More recently, Harter (1990, 1998) discussed how during middle adolescence the self-concept is both less integrated and more unstable than at earlier or later periods, and that perceived inconsistencies or conflicts in one's characteristics were a source of great concern during middle adolescence (see also Rosenberg, 1986;

Simmons & Blyth, 1987). Thus like Erikson, Harter proposed that a major task of adolescence is to integrate the disparate aspects of self.

One hallmark of recent research on adolescents' self-concepts is that researchers have focused on particular aspects of self-concept rather than just measuring individuals' general sense of themselves. They have developed measures of self-concept that have better psychometric properties than earlier scales. How the self organizes and regulates behavior also has been a major focus of recent work.

Markus and her colleagues (e.g., Markus & Nurius, 1986; Markus & Wurf, 1987) discussed how the self organizes and regulates behavior. They argued that individuals take information about the self and organize it into coherent frameworks that they call "self-schemas." For instance, students have a sense of themselves in the role of student. Markus and Nurius would call these self beliefs a "student self-schema." These self-schemas have a strong role in determining the goals we have, directing our behavior, and evaluating information we receive about ourselves. Those with strong student self-schemas are likely to do better in school and continue their educational pursuits. Markus also discussed how our self-concepts relate to our future activities, using the term "possible selves" to discuss the images we have of what we want to be in the future. The possible self notion is of course particularly germane to adolescents, because it is a period in which individuals explore different possibilities for themselves and begin to determine which roles are best and most appropriate for them.

Marsh and his colleagues have done a great deal of empirical work to examine the structure of self-concept, using Shavelson, Hubner, and Stanton's (1976) model of the self-concept as the theoretical basis for their work. They developed scales to measure children's self-concepts in many different activity domains, including both academic and nonacademic activities. Extensive factor analytic work with these scales has shown, first, there are clearly separate dimensions of self-concept even in very young children (see also Eccles, Wigfield, Harold, & Blumenfeld, 1993). Second, during middle childhood and early adolescence children's self-concepts appear to be organized hierarchically (e.g., Marsh, 1990; Marsh & Shavelson, 1985), with specific aspects of self-concept at the bottom of the hierarchy (e.g., math self-concept) and global self-concept at the top. Interestingly, during later adolescence there is less evidence for a hierarchical self-concept. These findings suggest an intriguing pattern in self-concept development across childhood and adolescence, from differentiated and hierarchical to differentiated into quite distinct components.

Harter (1982, 1990) also has done extensive work on the structure of children's and adolescents' self-concepts. Her work also has shown that children's self-concepts are multidimensional and increase in complexity during adolescence. In addition to her work on the structure of self-concept Harter has focused on the nature of some important self-processes during

adolescence. For example, she and her colleagues examined adolescents' sense of whether they could express their "true" selves or were not able to do so, in different settings. They have found that adolescents who hide their "true" selves do so because they think others devalue their true selves, because they want to make a good impression on others, or because they want to fit in. Adolescents who think others devalue their true selves have the lowest self-esteem (see Harter, 1998; Harter, Waters, & Whitesell, 1997, for further discussion). Adolescents believing they must receive approval from others before they can approve themselves also tend to have lower self-esteem.

The issue of how self-esteem changes at early adolescence has been an important concern of various researchers (see Harter, 1998). Self-esteem often is defined as one's overall self-evaluation. Self-esteem changes in important ways at early adolescence. Simmons, Rosenberg, and Rosenberg (1973) showed that following the transition to junior high school early adolescents' general self-esteem is lower and less stable and their self-consciousness, higher. However, there has been some debate about how prevalent these negative changes in general self-esteem are. In our work (Eccles, Wigfield, Flanagan, Miller, Reuman, & Yee, 1989; Wigfield, Eccles, Mac Iver, Reuman, & Midgley, 1991), children's self-esteem was lowest immediately after the transition into junior high school in seventh grade, but increased during students' seventh grade year. In their longitudinal work Blyth, Simmons, and Carlton-Ford (1983) and Simmons et al. (1979) found that for most children, self-esteem scores increase across middle adolescence (see also Dusek & Flaherty, 1981; O'Malley & Bachman, 1983). In Simmons and Blyth's work, white girls who make the transition to junior high school are the only group to show consistent evidence of declines in self-esteem. Eccles and her colleagues (Eccles & Midgley, 1989) and Simmons and her colleagues (Blyth et al., 1983; Simmons, Rosenberg, & Rosenberg, 1973; Simmons & Blyth, 1987) have postulated that these changes in early adolescents' self-beliefs are due in part to changes in the school environment that occur following the transition to junior high; these changes are discussed in more detail later.

Determining which specific components of children's self-concepts relate most strongly to their overall self-esteem or self-worth at different ages has been an important research topic. Harter (1986) found that during the elementary school years and adolescence, perceptions of physical appearance and social acceptance relate most strongly to children's feelings of self-worth (see Harter, 1990). These findings probably will come as no surprise to teachers and others working with early adolescents. Social status and physical appearance often seem to be much more important to adolescents than things like school success. The great changes in physical appearance occurring at this time likely are a major reason why adolescents are so concerned about their appearance.

A more difficult issue is determining exactly *how* the specific aspects of self-concept may influence general self-worth. Harter (1990) proposed that

individuals' general self-worth is determined in part by the synchrony between their sense of competence at different activities and the importance of those activities to them. Doing well in activities that are important should foster positive general self-worth. Harter has found support for this notion in her empirical work; children believing they are good at activities they think are important have more positive general self-worth than do children who believe certain activities are important but do not think they are competent at those activities.

This issue also has very important implications for students' school engagement. To the extent that adolescents do well in school and believe it is important, they should remain engaged in academic activities. If either their performance decreases or they begin to decide that school is not important, then their engagement will decrease. One of the challenges for middle school educators is that the perceived importance of school often decreases during adolescence because many adolescents begin to see social activities as more important to them at this time, and like those activities much more than academic tasks (see Eccles et al., 1989; Wigfield et al., 1991). We return to this issue later.

### Changes in Early Adolescents' Achievement Motivation

Work on motivation and achievement-related beliefs has flourished in the last 25 years (see Eccles, Wigfield, & Schiefele, 1998; Pintrich & Schunk 1996, for review). Many researchers studying motivation have taken the broad perspective that it is children's *interpretations* of their achievement outcomes that are critical mediators of subsequent achievement behavior; therefore, students' beliefs about themselves and their achievement have been a major focus of research. Students' purposes for engaging in achievement activities also have received a great deal of attention; constructs concerned with these purposes include students' goals, and their valuing of achievement activities.

To organize the proliferation of motivation constructs, Eccles et al. (1998) proposed that they can be thought of in terms of two major questions students can ask themselves. One question is "Can I succeed on this task or activity?" Constructs related to this question include students' competence-related beliefs such as self-efficacy (Bandura, 1997; Stipek & Mac Iver, 1989), their attributions (or explanations) for success and failure (Weiner, 1985), and their perceptions of control over outcomes (Skinner, Zimmer-Gembeck, & Connell, 1998). In general, when students have high self-efficacy, the belief that they can control their achievement outcomes, and internal attributions for their success, they tend to be more positively motivated and perform better on different achievement tasks and activities (see Eccles et al., 1998, for complete review; see also Chapter 2 by Pajares and Schunk in this volume for further discussion of some of these constructs).

The second question is "Why do I want to do this activity?", a question having to do with the purposes for which students engage in academic activities. This question is crucial to motivation. Even if individuals believe they can succeed on a task or activity, they may not engage in it if they have no clear purpose for doing so. Constructs related to this question include students' valuing of achievement, goals for achievement, and intrinsic and extrinsic motivation. Eccles, Adler, Futterman, Goff, Kaczala, Meece, and Midgley (1983) defined three main aspects of children's valuing of achievement: their interest in the activity, its usefulness to them, and its relative importance to them. They found that students' valuing of achievement relates strongly to their choices of which activities to continue to do (Eccles et al., 1983; Meece, Wigfield, & Eccles, 1990). For example, when students value math they are more likely to keep taking math courses, when they have choices about which courses to take.

Researchers studying achievement goals initially focused on two major goal orientations. One goal orientation concerns individuals' desire to learn new things and master material; this orientation has been called a task mastery or learning goal orientation by different researchers (Ames, 1992; Dweck & Leggett, 1988; Nicholls, 1984). The second orientation concerns individuals' desires to outperform others and receive favorable evaluations of their performance; this orientation is termed ego or performance goal orientation. Recently researchers have explored dual aspects of the performance orientation, dividing it into performance-approach and performance-avoidance goals (see Pintrich, 2000). Performance-approach goals include things like wanting to do better than others. Performance-avoidance goals are things like not wanting to appear stupid. Students adopting a performance-approach orientation tend to be more strongly motivated for achievement activities than do students adopting a performance-avoidance orientation (Elliot & Harackiewicz, 1996).

Intrinsic motivation refers to doing an activity out of interest and personal engagement in it, whereas extrinsic motivation means doing an activity to receive a reward or some other kind of recognition (see Chapter 4 by Deci and Ryan in this volume). Researchers assessing these constructs have found that when students hold mastery goals, performance-approach goals, are intrinsically motivated, and highly value achievement they will achieve better and be more engaged in learning activities.

Researchers looking at how these beliefs, goals, and values change during early adolescence and adolescence often have found that adolescents' motivation declines during this period (see Anderman & Maehr, 1994; Eccles et al., 1998, for review). Specifically, early adolescents have lower perceptions of their competence for different school subjects than do their younger peers (Eccles et al., 1989; Marsh, 1989; Wigfield et al., 1991). Many early adolescents become more anxious about school in general and mathematics in particular (Brush, 1980; Harter, Whitesell, & Kowalski, 1992). Students' valuing of different school subjects often declines as they move through school, with the declines

especially marked across the transition to middle school (Eccles et al., 1989; Wigfield et al., 1991). Their intrinsic motivation for learning often decreases (Harter, 1981; Harter et al., 1992). Students often focus more on performance goals as they get older, at the expense of task mastery goals (Anderman & Midgley, 1997; Midgley, Anderman, & Hicks, 1995).

Researchers have explained these changes in two major (and complementary) ways. One explanation focuses on cognitive and other changes within the individual. As children mature cognitively and receive increasing amounts of evaluative feedback, they come to understand more clearly their relative level of performance and what the evaluative feedback means (see Stipek & Mac Iver, 1989, for further discussion). As one illustration of this process, when asked how good they are in reading, most first grade children think they are one of the best in the class. Later in elementary school fewer children believe this (see Nicholls, 1979). The second explanation acknowledges these individual changes, but focuses more on the kinds of experiences children have in school as the reason for the declines in motivation. A major premise of this explanation is that when schools focus too much on ability evaluations, social comparison between students, and performance goals, many students' sense of competence, intrinsic motivation, and mastery goal orientation will decrease. The particular ways in which the transition from elementary school to middle school can produce these effects is the topic of the next section.

## THE MIDDLE-GRADE SCHOOL TRANSITION AND STUDENT MOTIVATION

### The Transition to Traditional Junior High Schools

Traditional junior high schools (and middle schools) differ structurally in important ways from elementary schools. Most junior high schools are substantially larger than elementary schools, because they draw students from several elementary schools. As a result, students' friendship networks often are disrupted as they attend classes with students from several different schools. Students also are likely to feel more anonymous because of the large size of many middle schools. Instruction is likely to be organized and taught departmentally. Thus junior high school teachers typically teach several different groups of students each day and are unlikely to teach any particular students for more than one year. This departmental structure can create a number of difficulties for students. One is that the curriculum often is not integrated across different subjects. A second is that students typically have several teachers each day with little opportunity to interact with any one teacher on any dimension except the academic content of what is being taught and disciplinary issues. Finally, family involvement in school often declines during the middle school years.

Researchers also have discussed how in traditional junior high schools and middle schools, classroom and school environments change away from practices that foster mastery goals and intrinsic motivation and focus instead on practices that promote a performance goal orientation in students (Eccles & Midgley, 1989; Maehr & Midgley, 1996; Wigfield et al., 1996). Such practices also can contribute to the decline in students' academic competence beliefs, interest, and intrinsic motivation discussed earlier. We focus here on several particular changes in teacher-student relations and social organizations of classrooms and schools. The first is changes in *authority relationships*. Middle school classrooms, as compared with elementary school classrooms, are characterized by a greater emphasis on teacher control and discipline and fewer opportunities for student decision making, choice, and self-management (e.g., Midgley & Feldlaufer, 1987; Moos, 1979). These practices can reduce students' sense of control and autonomy.

Second, traditional middle school classrooms, as compared with elementary school classrooms, often are characterized by *less personal and positive teacher-student relationships* (see Eccles & Midgley, 1989). For example, Trebilco, Atkinson, and Atkinson (1977) found that students reported less favorable interpersonal relations with their teachers after the transition to secondary school than before. Similarly, Feldlaufer, Midgley, and Eccles (1988) found that both students and observers rated junior high school math teachers as less friendly, less supportive, and less caring than the teachers these same students had one year earlier in the last year of elementary school. Positive and emotionally warm relations with teachers relate to students' motivation and adjustment in the classroom (Wentzel, 1997).

Third, the shift to middle school is associated with systematic changes in the *organization of instruction*, such as increases in practices such as having the entire class working together, and between classroom ability grouping (see Eccles & Midgley, 1989). Such changes are likely to increase social comparison, concerns about evaluation, and competitiveness, all of which could foster an ego goal orientation and a stronger focus on perceived competence (see Rosenholtz & Simpson, 1984). In addition, under these learning conditions children doing less well in school will be more likely to begin to doubt their competence.

Fourth, junior high school teachers often feel less effective as teachers, especially for low-ability students. This was one of largest differences we found between sixth and seventh grade teachers in the Michigan Study of Adolescent Life Transitions. Seventh grade teachers in these junior high schools reported much lower confidence in their teaching efficacy than did the sixth grade elementary school teachers in the same school districts (Midgley, Feldlaufer, & Eccles, 1988). Others have reported similar results. Alexander and George (1981) found that teachers in traditional junior high schools had a lower sense of their teaching efficacy than did teachers in a more innovative middle-grade school.

Several studies have documented the impact of teacher efficacy on student beliefs, attitudes, motivation, and achievement. Alexander and George (1981), in the study just mentioned, found that teachers in the more innovative middle-grade schools had higher expectancies for student success and also were more likely to take personal responsibility for student failure than were the junior high school teachers. Ashton (1985) found that teachers' sense of efficacy relates positively to high school students' performance on math and language arts achievement test scores. More efficacious teachers also were more encouraging and supportive of students.

Fifth, despite what one might expect given what we know about cognitive development at this age, there is evidence that classwork during the first year of junior high school requires lower-level cognitive skills than classwork at the elementary level. One rationale often given for the large, departmentalized junior high school system is its efficiency in providing early adolescents with higher-level academic work and more varied academic courses taught by specialists in their fields (see Clark & Clark, 1993). It is argued that the early adolescents are ready for more formal instruction in the various subject areas. Two assumptions are implicit in this argument. First, it is assumed that more formal, departmentalized teaching is conducive to the learning of more advanced cognitive processes. Second, it is assumed that children in junior high school are undertaking learning tasks that require advanced (or higher-order) thinking in their departmentalized courses. Both of these assumptions have been questioned. For example, in an observational study of 11 junior high school science classes, only a very small proportion of tasks required higher-level creative or expressive skills; the most frequent activity involved copying answers from the board or textbook onto worksheets (Mergendoller, Marchman, Mitman, & Packer, 1988). Similarly, Walberg, House, and Steele (1973) rated the level of complexity of student assignments across grades 6 to 12 according to Bloom's taxonomy of educational objectives. The proportion of low-level activities peaked at grade 9, the first year after the students in this district made the transition into secondary school. Thus, although the students have been led to believe that they are moving to a more challenging school environment, they may well find themselves in classes that are reviewing the material they learned in elementary school, and as will be discussed next, they are likely to be given lower grades for their work. As we shall see below, this experience is not likely to facilitate their motivation.

Sixth, junior high school teachers appear to use a higher standard in judging students' competence and in grading their performance than do elementary school teachers (see Eccles & Midgley, 1989). There is no stronger predictor of students' sense of competence than the grades they receive. If grades change, then we would expect to see a concomitant shift in the adolescents' self-perceptions and academic motivation. There is evidence that junior high school teachers use stricter and more social comparison-based standards

than elementary school teachers to assess student competency and to evaluate student performance, leading to a drop in grades for many early adolescents as they make the junior high school transition. For example, Simmons and Blyth (1987) found a greater drop in grades between sixth and seventh grade for adolescents making the junior high school transition at this point than for adolescents enrolled in K-8 schools.

The decline in grades is not matched by a decline in the adolescents' scores on standardized achievement tests, suggesting that the decline reflects a change in grading practices rather than a change in the rate of the students' learning (Kavrell & Petersen, 1984). Imagine what this decline in grades might do to early adolescents' sense of competence, especially in light of the fact that the material is not likely to be more intellectually challenging. Indeed, even controlling for a youth's performance prior to the school transition, the magnitude of the grade drop following the transition into either junior high school or middle school is a major predictor of dropping out of school (Simmons & Blyth, 1987).

Finally, as noted above, peer networks are disrupted when children change schools. Many times friends are separated from one another, and it takes some time for children to reestablish social networks. Wigfield et al. (1991) found that children's sense of social competence was lowest immediately after the transition to junior high school, in comparison to before the transition or later in junior high school. Such disruptions could influence children's academic motivation as well.

In summary, traditional junior high schools and middle schools have a variety of organizational characteristics and classroom practices that have negative effects on students' competence beliefs, mastery goals, and intrinsic motivation for learning. Eccles and Midgley (1989) argued that a main reason these practices have a negative impact is that they are developmentally inappropriate for early adolescents. At a time when the children are growing cognitively and emotionally, desiring greater freedom and autonomy, and focusing on social relations, they experience teaching practices like those just described that do not fit well with the developmental characteristics of early adolescents. Therefore, for many early adolescents these practices contribute to the negative change in students' motivation and achievement-related beliefs. What has been done about these problems? That is the topic of the next section.

### Middle School Reform Efforts and Student Motivation

Based in part on the research just reviewed, proposals by middle school experts, and the *Turning Points* report written by the Carnegie Council on Adolescent Development, middle schools across the country have begun to change greatly (see Alexander & George, 1981; Carnegie Council on Adolescent

Development, 1989; Clark & Clark, 1993; Irvin, 1992; Midgley & Edelin, 1998). There is growing consensus about what kinds of changes should be made in middle-grade schools (Lipsitz, Mizell, Jackson, & Austin, 1997). One structural change adopted in many school districts has been to move the transition to middle school from after to before sixth grade, in part so that fewer students would experience pubertal changes at the same time they underwent the middle school transition. This change on its own accomplishes little; what is more important is changing school organization and instructional practices in systematic ways (Mac Iver & Epstein, 1993). Both the Carnegie Council on Adolescent Development and the National Middle Schools Association have made recommendations for how middle schools should be changed; a summary of their recommendations is presented in Table 1. As can be seen in the table, there is much overlap between the two sets of recommendations.

TABLE 1

**Recommendations for Restructuring Educational Practices in Middle-Grade Schools**

Recommendations from the Carnegie Council on Adolescent Development
1. Turn large schools into smaller learning communities.
2. All students should receive a common core of high-level knowledge.
3. All students should be given the opportunity to succeed.
4. Teachers and administrators should be empowered to make important decisions.
5. Middle-grade teachers should receive special preparation for teaching at the middle school level.
6. Early adolescents' fitness and health should be enhanced to enhance their academic performance.
7. Families should be reengaged in middle schools.
8. Connections between schools and communities need to be built.
Recommendations from the National Middle School Association
1. Middle school educators should be knowledgeable about young adolescents.
2. The middle school curriculum should be balanced and responsive to the needs of young adolescents.
3. There should be a range of organizational arrangements in middle schools.
4. Instructional strategies should be varied.
5. There should be full exploratory programs in different schools.
6. Comprehensive advising and counseling should be provided for all students.
7. All students should make continuous progress.
8. Evaluation procedures should be compatible with the nature of young adolescents.
9. Teachers should have time for cooperative planning.
10. Each middle school should have a positive school climate.

Many of these recommendations have strong appeal for those interested in developmentally appropriate education for early adolescents. Indeed, several focus directly on the special nature of the early adolescence age period and how teachers need to be prepared specifically for working with this age group. From our perspective as developmental psychologists such recommendations are particularly important. Early adolescence is a unique developmental period in many respects, and designing educational programs to fit the developmental needs of early adolescents can facilitate students' learning and adjustment (see Eccles & Wigfield, 1997).

We also believe recommendations that increase the sense of community in middle schools are particularly important. A good example of this are the recommendations focusing on replacing department structures with teams of teachers working with the same group of students. This practice allows groups of teachers to spend more time with the same group of adolescents, thus getting to know them better. It also allows for greater integration across the curriculum. Teachers serving as advisors and counselors has become more prevalent, so that adolescents can develop relationships with adults other than their parents. To create smaller learning communities in often-large middle schools, "schools within schools" have been created, in part through the teaming approach just discussed. This is particularly likely to occur for the youngest group in a middle school, be they fifth graders, sixth graders, or seventh graders. Cooperative learning practices are used more frequently, in part to reduce the use of ability grouping or tracking. Such practices, when implemented appropriately, enhance relations between teachers and students and have been shown to be effective in enhancing student engagement and learning (Arhar, 1997; Lee, Bryk, & Smith, 1993).

We also find very important the recommendations focusing on the need to engage more fully families and communities in middle schools. A great deal of research indicates that when parents are involved in their children's education children's achievement and motivation in school are enhanced (see Brough, 1997; Epstein, 1987). Yet many parents are not involved in their children's education or at the schools, and the involvement that does occur often declines once children reach middle school. Reasons parents are not involved include responsibilities at work, lack of time, poor communication from the school, and (at times) a sense of not being wanted in the school. Brough (1997) described a variety of ways in which middle schools can increase parental involvement, including better communication about school activities, regular communication from teachers about what is occurring in their classrooms, active solicitation of parental involvement, and encouragement of home-school partnerships. The increased parental involvement resulting from such efforts can facilitate students' engagement and learning.

How many middle schools have adopted such changes? Mac Iver and Epstein (1993) reported results of a study of teaching practices in middle schools across the country. They found that many school districts have not

adopted the "school within a school" approach for making middle schools seem smaller. Forty percent of middle schools use tracking for math and English, and 20% use it for all subjects. Seventy five percent of schools have advising periods for students, although Mac Iver and Epstein noted that many of these are used primarily for school business, such as attendance taking and announcements, rather than for "true" advising and counseling. Close to 40% of middle schools reported using some kind of interdisciplinary teaming, but few of these schools allowed for team planning periods. Only 10% of the schools have teaming programs that allow teachers regular times for planning their academic programs. It should be clear from these data that implementation of the recommendations is occurring slowly. Mac Iver and Epstein asked principals to forecast how their schools would change over the next few years. Principals were most likely to mention teaming with planning periods, students assigned to the same advisory teacher for the entire time they are in middle school, flexible scheduling, and greater use of cooperative learning.

Lipsitz and her colleagues (1997) discussed middle school reform efforts across the country. They focused in particular on three sets of middle schools in Illinois, Michigan, and Indiana in which reform efforts in line with the recommendations included in Table 1 have been undertaken in meaningful ways. Felner, Jackson, Kasak, Mulhall, Brand, and Flowers (1997) reported systematic evaluations of the schools in the Illinois network. They conducted longitudinal studies in schools implementing fully the recommendations from the Carnegie Council, comparing them with schools implementing the recommendations to a degree and not at all. The comparison schools were matched carefully on demographic and other characteristics. Felner et al. obtained measures of students' achievement, school attitudes, and behavior problems. Preliminary analyses indicate that schools in which the implementation has been fullest have higher achieving students. Students in these schools report higher self-esteem and fewer worries about bad things happening to them in schools, and teachers report fewer behavior problems. These results provide encouraging support for the efficacy of the reform efforts. One crucial point made by Felner et al. is that comprehensive reform is what needed. Schools in which one or two of the recommendations have been implemented and schools in which the implementation of several recommendations has proceeded slowly have not been as successful. Unfortunately, as noted above many schools are just beginning to implement change or are doing so selectively.

In summarizing middle school reform efforts Midgley and Edelin (1998) argued that many middle schools have improved the climate of their school, particularly relations between teachers and students, but fewer have changed their instructional practices. They argued for the need for both kinds of changes to occur for reform to occur more completely and, therefore, for adolescents' achievement and motivation to improve. Their position thus is similar to that of Felner et al. (1997): full implementation of reforms is needed

to affect student outcomes. They further discussed how some have suggested that the focus on improving teacher – student relations has come at the expense of improving academics, and stated strongly that it is not necessary to view these two aspects of change as competing with one another. Both are necessary to do, and can be done together.

What about students' motivation in reformed middle schools? Unfortunately there is not yet a great deal of information about how reform efforts have affected students' motivation. Felner and his colleagues measured self-esteem, but not the different aspects of motivation we have discussed in this chapter. Some researchers have assessed motivation in their work in reformed middle schools, and we close this section by discussing their work. Mac Iver and his colleagues began a middle school reform effort that they call Talent Development middle schools (see Mac Iver, Mac Iver, Balfanz, Plank, & Ruby, 2000; Mac Iver & Plank, 1997, for a summary). This project is focused on reforming middle schools that serve early adolescents who are at risk because of the backgrounds from which they come. The program involves the implementation of many of the recommendations discussed in this section: detracking the schools, using cooperative learning extensively, team teaching, offering a challenging core curriculum (including algebra) to all students, and providing advising services. The program began in a few schools in Philadelphia, and is spreading to other areas of the country. Results to date for both achievement and motivational outcomes are encouraging. Students in the Talent Development schools gained more in mathematics and reading achievement than did students in matched control schools. Mac Iver and colleagues measured several motivation outcomes, including students' perceptions of their effort, sense of ability, and valuing of school learning, and students in the Talent Development schools were more positive in these aspects of motivation. They also perceived their teachers as more caring.

Maehr and Midgley (1996) presented an account of their collaborative effort to change the culture organization of a middle school using principles from achievement goal theory. Through collaborations with teachers and school administrators different practices in the school were changed to facilitate mastery rather than ability-focused goal orientations. The specific basis for the change was Ames' TARGET program. Ames (1992) discussed how classroom grouping and other practices influence students' achievement goal orientations and other aspects of motivation. Ames, following Epstein (1988), focused on the following aspects: classroom tasks, authority structure, recognition, grouping, evaluation, and time, using the acronym TARGET to describe them. Each of these aspects can influence whether students develop a task mastery or performance goal orientation. In describing these influences we focus on practices that facilitate a mastery goal orientation. *Tasks* that are diverse, interesting, and challenging foster students' mastery goals, as do tasks students think they have a reasonable chance to complete. When the *authority* in classrooms is structured such that students have opportunities to



participate in decision making and take responsibility for their own learning, they are more mastery oriented. *Recognition* of student effort instead of only ability and giving all students a chance to achieve recognition (rather than just the "best" students) foster task-involved goals. Mastery goals are fostered when cooperative *grouping* is used and students have opportunities to work with a heterogeneous mix of students. When teachers *evaluate* students' progress and mastery rather than just their outcomes, and provide students opportunities to improve, then mastery goal orientations are more likely. Finally, *time* refers to how instruction is paced. Crucial things for fostering mastery goals are varying the amounts of time available for different students to complete their work and helping students learn to plan their own work schedule and organize how they progress through the work. Ames (1992) argued cogently that such practices will allow more students to remain positively motivated in the classroom, in that they will have more positive competence beliefs and task-involved goals (see also Stipek, 1996).

The school – university team worked extensively in one elementary school and one middle school to restructure the schools toward a focus on mastery goal; they spent 3 years in each school. The schools were in a working class community in the Middle West. The researchers met extensively with teachers and administrators at the school to develop collaborative working relationships. Together with the teachers and administrators they developed plans for reorganization and implementation of the plans. At the middle school they focused on creating teams of teachers, "schools within the school," and changing the student recognition patterns.

Maehr and Midgley's account of the process of attempting to reorganize the school is fascinating. They were able to work with teachers at the elementary school and implement agreed-on changes much more easily than they were at the middle school. At the middle school there were many difficult issues that the researchers encountered throughout the process. These included some teachers' (especially the math teachers) resistance to change, particularly with respect to doing away with grouping, difficulties in adjusting the rigid middle school bell schedule to accommodate teaming and flexible class scheduling, and parents' objections that their high-achieving students did not receive enough recognition. These difficulties illustrate the continuing challenges inherent in school reform efforts.

What kinds of effects did the changes have? Despite the difficulties in implementing some of the proposed changes at the middle school level, the changes appear to have had positive effects on students' motivation. Anderman, Maehr, and Midgley (1999) reported results of analyses obtained from students in elementary and middle schools, in both the collaborating middle school, and a comparison middle school in which the changes did not occur. Indeed, in the comparison school competition and ability grouping were emphasized. There were few differences in students' motivation during elementary school. Following the transition to middle school students in the

comparison school had stronger performance goals and extrinsic goals for learning. These students also perceived a stronger emphasis in their school on performance goals. These shifts in students' motivation did not occur for the students in the collaborating school.

In summary, reform efforts organized by a guiding set of principles are underway in middle schools across the country. However, despite the call for these changes and agreement on the principles to guide change, many middle schools have been slow to adopt them or have not changed at all. There is an urgent need for these reform efforts to move ahead. Evidence from schools adopting the recommended changes suggests students' motivation is enhanced in these middle schools; thus the decline in student motivation that we have been discussing is not inevitable. This evidence is still sketchy, however; much more work is needed on how middle school reform efforts are influencing students' motivation along with their achievement.

### GENDER DIFFERENCES IN MOTIVATION AND SELF-CONCEPT AT EARLY ADOLESCENCE

In our discussion of change in motivation and self-concept we have discussed overall change. An important question is whether the changes occur in similar ways for all children. In our own work we have been interested particularly in sex differences in children's motivation. Though sex-typing itself occurs in the preschool years (see Ruble & Martin, 1998), several researchers have suggested that engaging in gender-role appropriate activities may become quite important to early adolescents, as they try to conform more to gender-role stereotypes once they enter puberty (Eccles, 1987; Hill & Lynch, 1983). Hill and Lynch labeled this phenomenon "gender-role intensification." This phenomenon may lead early adolescents to have less positive beliefs and be less involved in activities that they see as less appropriate to their own gender. For instance, girls who believe that math is not appropriate for females, and who wish to conform to perceived feminine roles, may decide to discontinue taking math when that possibility becomes available, even if they are doing very well in math.

Regarding the motivation constructs we have discussed in this chapter, there are many gender differences in children's competence beliefs for activities in different domains (see Wigfield, Battle, Solomon, & Eccles, 2002, for more detailed discussion). These differences are intriguing in light of evidence that actual achievement and test score differences between boys and girls are decreasing. In an important article Linn and Hyde (1989) presented a meta-analysis of work on sex differences in verbal, mathematics, and science aptitude test performance. They concluded that sex differences in verbal ability now are negligible; differences in quantitative skills show that girls'

computation skills are better at all ages and boys do better on mathematics conceptual "word" problems in high school, though again these differences have decreased in the past 15 years; and differences in science knowledge and process still favor boys, though they also are decreasing and appear to reflect experiential differences between boys and girls in science.

Despite these findings, gender differences in self-perceptions and values remain. In our work adolescent boys have higher competence beliefs for sports and math than do adolescent girls, and the girls have higher competence beliefs for English (see Eccles et al., 1983, 1989; Wigfield, et al., 1991). Marsh (1989) also reported many gender differences in response to his self-concept scales, though he noted that the gender differences explain only about 1% of the variance in responses. As in our work, boys' math self-concept of ability scores are higher than those of girls, whereas girls' scores are higher for verbal/reading and general school subscales. Interestingly, there are few age  $\times$  sex interactions in children's and adolescents' responses to our measures or those of Marsh, suggesting that the gender differences neither increase nor decrease in magnitude across age. A recent longitudinal study has found similar declines in boys' and girls' competence beliefs across grades 1 through 12 (Jacobs, Hyatt, Eccles, Osgood, & Wigfield, in press).

We also have found differences in boys' and girls' valuing of different tasks (assessing the different components of achievement values described earlier). Girls value English and reading more than boys do. Interestingly, during middle school there are no differences in the valuing of math (Eccles et al., 1989; Wigfield et al., 1991). Though it is encouraging that boys and girls like math similarly and think it equally important, the fact that girls have less positive views of their ability in math could be problematic. The doubts girls have about their math ability likely leads them to be less likely to continue taking math courses as math becomes more difficult. Although there currently are few course enrollment differences between boys and girls in high school, substantial differences remain at the college level. Boys' devaluing of reading also is problematic, because of the importance reading plays in so many academic endeavors.

Researchers also have examined sex differences in self-esteem, and discussed whether girls' self-esteem becomes less positive than boys' self-esteem during early adolescence. Rosenberg (1986) suggested that girls are more affected by the physical changes occurring at puberty and thus their self-concepts are more volatile than those of boys during this period. Simmons and Blyth (1987) found that the junior high transition had a negative effect only on girls' self-esteem; our own work did not replicate this finding (Eccles et al., 1989; Wigfield et al., 1991). However, in our studies (e.g., Eccles et al., 1989; Wigfield et al., 1991) and those of others, boys report higher self-esteem than do girls during the early adolescence period (e.g., Blyth et al., 1983; Marsh, 1989; Simmons et al., 1979). We are unsure whether this finding reflects "true" gender differences in self-esteem or response bias, as boys tend

to be more self-congratulatory than girls in their responses to self-report measures, while girls may be more modest in their self-reports.

Various authors have argued that early adolescence is a particularly challenging time for girls' self-development as they come to terms with their roles in society. Gilligan and her colleagues have written extensively about this topic (e.g., Gilligan, 1982, 1993; Gilligan, Lyons, & Hammer, 1989), discussing how many girls lose their "voice" at early adolescence. They postulated that this occurs because as they mature, girls learn that females' roles in our society are limited and that the stereotype is for women to be pleasing to others, unassertive, and quiet. Further, Gilligan and others have argued that relations with others are primary to adolescent females and women, leading them to be strongly motivated to preserve positive relations with others. Still others have posited that schools are biased in ways that favor boys' expression of their voices and the suppression of girls' voices (American Association for University Women, 1992). As a result of these changes adolescent girls may suppress their true views of things to maintain relations with others and conform to the cultural stereotype; hence they lose their voice. Gilligan based her conjectures on interviews with adolescent girls in different settings.

Gilligan's work has been influential, influencing views expressed in the popular press describing the difficulties many adolescent girls face (e.g., Pipher, 1994). Although Gilligan's interviews provide some support for her views, Harter, Waters, and Whitesell (1997) argued recently that there is not a lot of documentation for the claim that many females lose their voices at early adolescence. They also suggested that there is a great deal of overlap between boys and girls on a variety of self-related constructs relevant to this issue. In an intriguing series of studies they examined both boys' and girls' voice at early adolescence, as measured by a questionnaire they developed. The questionnaires asked the adolescents their extent to which they felt they could express their opinions and beliefs in different situations. One issue they examined was which relational context the adolescents felt they were able to express their voice. Both boys and girls felt they were freer to express themselves with their peers than with teachers or parents, a finding that perhaps is not surprising.

Harter and her colleagues also have looked at how expression of voice varies by age and gender and gender-role orientation. In cross-sectional studies they have found no evidence for a decline in girls' expression of voice across 6th through 12th grades; this result conflicts with the idea that girls' voices are silenced at early adolescence. Further, in both middle and high school there were no gender differences in voice. However, there were gender-role differences in certain relational contexts. Feminine girls were less expressive in school than were androgynous girls, especially with male classmates. With parents and close friends, however, there were no differences between these groups.

This work suggests that Gilligan's claims about loss of voice at adolescence for girls are too broad; if voice is lost at adolescence it appears to be for a

subset of girls, those who endorse a traditionally feminine sex-role orientation. The different methodologies used in Gilligan's and Harter's work perhaps make direct comparisons difficult. However, we concur with Harter and colleagues that Gilligan's conclusions about voice likely are too general. In future research perhaps new methodologies can be developed to reconcile these conflicting findings.

Hoff Sommers (2000) recently published an even stronger critique of Gilligan's work in the *Atlantic Monthly*, criticizing the methodologies used by Gilligan and arguing that little of her work has received strong peer review. She argued further that boys really are the ones at greater risk, reviewing evidence that boys have lower grades in school, are more likely to drop out, are less likely to attend college, and are much more likely to be diagnosed as learning disabled or having attention deficit disorder, among other things. She concluded that the concern about girls is misplaced and that schools really should worry more about boys. Although some of her critiques of Gilligan's work are justified and her points about the difficulties many boys face are well-taken, it is perhaps unfortunate that this debate is being cast in this way. Rather than arguing either that boys have problems and girls do not, or girls have problems and boys do not, it seems that some members of each gender experience challenges that need attention in school. These challenges are quite different, and so as a result the same solutions will not work for each. For instance, many boys' performance in reading needs to be enhanced for them to achieve better in school. The need for greater participation by girls in mathematics and science-related careers also seems essential, particularly as more and more of the high-paying positions generated by the "new economy" require these skills. It therefore does not seem appropriate to focus primarily on either gender, but rather to deal with the separate issues that each gender group faces.

In sum, despite evidence that males' and females' performance in math and English is becoming more similar, gender differences in competence beliefs and values regarding these subjects remain. At early adolescence girls appear to have lower self-esteem than boys do. The question of whether the transition to middle school has stronger negative effects on girls than on boys has received some support in the literature, but the evidence is not always consistent with this view. And although some girls may lose voice at adolescence, the claim that most girls do so appears to be too sweeping. Many boys also experience difficulties in adjusting to school and performing well in certain subjects. To connect this work to that reviewed in the previous section, researchers should examine how middle school reform efforts impact motivation and self-esteem of both boys and girls, to see what kinds of impact these reforms are having on both groups.

To conclude, we have reviewed work on how motivation and self-concept change at early adolescence, discussing how aspects of school and classroom environment can produce the observed changes. We also discussed the still-nascent work on how middle school reform efforts are influencing early adoles-

cents' motivation and self-esteem. These reforms appear very promising, and results of some of the early evaluations of their effects have been quite positive. Continuing such work is a priority for the new millennium.

### Teachers' Questions and Answers

**Q:** I teach in a large middle school where we try to arrange things to accommodate the large numbers of students. For example, to deal with the problem of moving so many kids through their day without overcrowding the cafeteria we use things like different bell schedules for different subject departments. But I wonder if such practices only create more distractions for students.

**A:** A number of the recommendations for change would seem to be especially important in large middle schools. Research increasingly has shown that when a sense of community and belonging is present in schools, students are more engaged and achieve better. This sense of community is more likely to be lacking in very large schools, as students likely often feel lost in the crowd in these schools. Creating smaller learning communities, organizing instruction by teams rather than departments, and providing other ways to connect students to these schools seems crucial in these kinds of institutions. With smaller learning communities and teams of teachers, bell schedules could be adjusted within the teams. Doing so may be more challenging than in smaller schools, but it might be even more important and provide stronger benefits.

**Q:** I am worried that my students are being damaged by our current practice of giving them so many high-stakes tests throughout the year. I'm particularly worried that the lower scoring and anxious students are losing motivation as a result. Does any research document this and provide ideas on how to combat these effects?

**A:** Many motivation theorists and researchers are quite concerned about the impact of high-stakes testing on students' motivation, and think that such testing can undermine many students' motivation. Two particular concerns are what will happen to anxious students and to those performing poorly. Anxious students often are quite stressed by tests, and their level of stress increases as the stakes of testing are raised. Low achievers likely fail many items on the tests, making it more likely that they will doubt their abilities. I don't think systematic work has been done yet to determine exactly what the effects of high-stakes testing on motivation are, but certainly for both these kinds of students they are not likely to be positive. To support students, a number of things can be done. One is to help anxious students deal with the pressures of testing by giving them ideas about how to approach the test (e.g., doing the ones you can first, not dwelling too much on items that pose serious challenges for students, giving students ways to relax while they are taking tests). Lower-achieving students who feel like giving up may be less likely to do so if they

experience success in other tasks and activities in school. Emphasizing to them the importance of effort and use of good strategies while working on the tests may help them avoid the sense that they simply lack ability.

**Q:** If students lose self-esteem when they go through middle school, should we be taking steps to bolster it? If so, might this detract from our efforts to boost their achievement?

**A:** Fostering a positive sense of self-esteem in students is a worthy goal at all levels of education, because high self-esteem relates to a number of important mental health and other outcomes. However, the development of a positive sense of self in school needs to be done in the context of legitimate accomplishments; students' sense of themselves needs to be grounded in this way. Students' self-esteem (and other aspects of their beliefs about themselves) need to have a stronger foundation than simply being told they are great. A sense of self that is not based in accomplishments can be hollow, and may crumble when challenges are faced.

Efforts to enhance self-esteem and efforts to increase academic rigor and performance need not be in opposition. As Midgley and Edelin (1998) noted, efforts to improve the climate of school, students' sense of belonging there, and their self-esteem are crucial parts of middle school reform efforts. Efforts to increase academic rigor and student achievement also are central to reform. The two can be complementary rather than in opposition to each other, and indeed should be complementary.

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# Improving Academic Achievement

*Impact of Psychological  
Factors on Education*

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**I**

**Introductory Chapter**

**I. SELF AND SELF-BELIEF IN PSYCHOLOGY AND EDUCATION: A HISTORICAL PERSPECTIVE**

*Frank Pajares and Dale H. Schunk*

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