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Goals and Cognitions

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Stage–Environment Fit: Developmentally Appropriate Classrooms for Young Adolescents

Jacquelynne S. Eccles
Carol Midgley

It has been clear for some time that the entry into junior high school probably represents the most abrupt and demanding transition of an individual's entire educational career. This is a crisis period that has important educational as well as personal consequences.

Hamburg, 1974

The junior high school, by almost unanimous agreement, is the wasteland—one is tempted to say cesspool—of American education.

Silberman, 1970

There is considerable lack of fit between what we know about young adolescents and what we do to them five days a week in school.

Lipsitz, 1977

INTRODUCTION

Recently, there has been considerable interest in the effect of the transition from elementary to middle or junior high school on early adolescent development. Some investigators have suggested that the transition may be causally related to changes in young adolescents'

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motives, beliefs, values, and behaviors (Blyth, Simmons, & Carlton-Ford, 1983; Eccles, Midgley, & Adler, 1984; Simmons & Blyth, 1987). Several important questions have been raised. Does the transition have a negative impact on early adolescent development? What are the mediators between the transition and changes in beliefs and behaviors? Which young adolescents are most vulnerable to transition effects? What are the long-term consequences of the transition effects? Is a school transition at this stage of life inevitably detrimental for some groups of children? Simmons and her colleagues have argued that the *timing* of the transition to junior high school results in more disruption to the individual than would a similar transition a few years later "after the individual has developed a more mature sense of who he or she is" (Blyth et al., 1983, p. 106). While this may be true, Eccles et al. (1984) have argued that the *nature* of the transition is also critical. Transition to a more facilitative environment, even at a vulnerable age, should have a positive impact on children's perceptions of themselves and their educational environment. Both of these perspectives are probably accurate and need to be considered as we try to determine the optimal environment for young adolescents. In fact, as both Simmons and Blyth (1987) and Eccles et al. (1984) argue, it may be the coincidence of the type of transition and the timing that makes the junior school transition especially problematic for some children.

In this chapter, we argue that changes in a cluster of classroom organizational, instructional, and climate variables, including task structure, task complexity, grouping practices, evaluation techniques, motivational strategies, locus of responsibility for learning, and quality of teacher–student and student–student relationships may contribute to the change in students' motivation and achievement-related beliefs assumed to coincide with the transition into junior high school.

Evidence suggests that many young adolescents experience increases in the following as they move from elementary school to junior high school: the size of the school and the student body, the extent of both departmentalization and ability grouping, use of competitive motivational strategies, rigor in grading and a focus on normative grading standards, teacher control, and whole class instruction. Many also experience decreases in teacher trust of students, opportunities for student autonomy, teachers' sense of efficacy, and continuous, close, personalized contact between teachers and students and between students and their peers. Finally, contrary to what one might expect, some evidence suggests that some junior high school teachers provide students with fewer opportunities for higher-level cognitive problem solving than they received in upper elementary school.

We believe that these changes are *particularly* harmful at early adolescence in that they emphasize competition, social comparison, and ability self-assessment at a time of heightened self-focus; they decrease decision making and choice at a time when the desire for control is growing; they emphasize lower-level cognitive strategies at a time when the ability to use higher-level strategies is increasing; and they disrupt social networks at a time when adolescents are especially concerned with peer relationships and may be in special need of close adult friendships. We also believe that these environmental changes, coupled with the normal course of individual development, result in a developmental mismatch in which the fit between the young adolescent and the classroom environment is particularly poor, increasing the risk of negative motivational outcomes (see Fraser & Fisher, 1983; Hunt, 1975; Lewin, 1935; Mitchell, 1969 for general discussion of person–environment fit theory).

To make these arguments, we have organized the chapter in the following way: First, we review the evidence regarding changes in early adolescent beliefs and behaviors, with an emphasis on changes associated with the transition to junior high school. Second, we review the studies assessing changes in the classroom environment associated with the transition to junior high school. Finally, we discuss the possible link between these two literatures.

CHANGES IN YOUNG ADOLESCENTS' BELIEFS AND BEHAVIORS

Both Higgins and Parsons (1983) and Eccles *et al.* (1984) argued that changes in children's motivation and their achievement-related beliefs and cognitions could be explained, in part, by systematic changes in the social environments to which they are exposed. In their chapter, Eccles et al. (1984) reviewed the nature of the changes in children's beliefs and motivation, concluding that (1) children's attitudes toward school and toward their own academic competence decline with age until the late high school years; (2) the decline is most marked when children first enter school and again when they move into junior high school; and (3) the decline varies across subject areas and activity domains.

Because many of the studies reviewed by Eccles et al. (1984) were not explicitly designed to look at transition effects, they typically con-

founded age, grade level, and school structure change, and often used a cross-sectional design, making it difficult to interpret the likely antecedents of developmental differences. Three major changes characterize the literature since 1983: (1) There are more direct comparisons of different types of school structure, allowing one to unconfound the effects of age, grade level, and school structure in looking at developmental change. (2) More attention has been paid to assessing individual differences in young adolescents' reaction to both school transitions and to various types of posttransition school environments. (3) Studies have included more refined assessments of the nature of the classroom and school environments the children are moving from and into. Each of these advances has increased our ability to evaluate various causal explanations for developmental change in early adolescents' self-perceptions and school-related motivation. In this section we expand on the Eccles et al. (1984) review, focusing particularly on studies that assess longitudinal change linked directly to the junior high or middle school transition. Studies focused on the nature of the school environment before and after the transition are discussed in a later section.

Studies of change in beliefs and behaviors have made two kinds of age and/or across-grade-level comparisons: (1) mean grade-level differences on various indicators of performance, motivation, interest, and self-perceptions, and (2) differences in the patterns of associations among these variables. Studies have also distinguished between attitudes toward school and school subjects and more self-focused perceptions and motivation. Our review is organized around these distinctions. Within each section, we begin with the simplest designs and then move to studies with more refined dependent measures, comparisons of various patterns of school organization, and analyses of individual differences.

ATTITUDES TOWARD SCHOOL AND SCHOOL SUBJECTS

In general, as concluded by Eccles et al. (1984), there is a gradual decline in students' general attitudes toward school and academic subjects with advancing age and grade level (Epstein & McPartland, 1976; Haladyna & Thomas, 1979; Lee, 1979; Neale & Proshek, 1967; O'Connor, 1978; Thompson, 1982; Trebilco, Atkinson, & Atkinson, 1977; Yamamoto, Thomas, & Karns, 1969). For example, Larson (1982, 1983) found a decline in students' satisfaction with their school and teachers across grades six to eight. Similarly, in our study of Transitions at Early Adolescence (being conducted by Eccles, Midgley, Feldlaufer, Reuman, Wigfield, Mac Iver, Flanagan, Jacobs, Miller, and Yee), students increased the relative importance they attached to the stem "because I have to" as a reason for attending school as they moved from elementary school into a traditional junior high school (Eccles, Wigfield, Reuman, & Mac Iver, 1987). The differences, however, vary in magnitude across and within these studies depending on the particular subject area being rated (Brush, 1980; Eccles et al., 1984; Gottfried, 1981) and the type of school and/or instructional format (Berndt, 1987; Berndt & Hawkins, 1987; Larson, 1982, 1983; Moore, 1983; Power, 1981), suggesting that the age–grade differences in attitudes toward one's school are influenced by the *nature* of the school environment one is in. In particular, when comparisons are made, the declines are more extreme for students moving into traditional junior high schools than for children moving into or through either a nontraditional junior high school or a middle school, or staying in a K–8 school (Berndt & Hawkins, 1987; Larson 1982, 1983; Moore, 1983).

While only a few studies have tried to unconfound age, grade, and transition effects on students attitudes toward school, the results are quite consistent: Transition appears to have a greater impact on change in attitudes toward school than do either age or grade changes by themselves (Jennings & Hargreaves, 1981; Simmons & Blyth, 1987; Simmons, Blyth, Van Cleave, & Bush, 1979; Thornburg & Glider, 1984). Furthermore, as one would expect, the nature of the transition has a substantial impact on the changes obtained in young adolescents' attitudes toward school, with transition into a more traditional junior high school environment, especially in large urban setting, leading to more negative change (Berndt, 1987; Berndt & Hawkins, 1987; Larson, 1982, 1983; Moore, 1983; Power, 1981; Simmons & Blyth, 1987; Trebilco et al., 1977; Warburton, Jenkins, & Coxhead, 1983). This pattern is true for some of the more subtle indicators of students' attitudes toward school, such as their feelings of anonymity (Blyth et al., 1983; Thornburg, 1985), their participation in extracurricular activities (Blyth et al., 1983), and truancy (Nielsen & Gerber, 1979), as well as for the more direct attitudinal measures mentioned earlier.

SELF-PERCEPTIONS: SELF-ESTEEM AND SELF-CONCEPT

Findings regarding self-perceptions are both more interesting and less consistent. In their classic study in Baltimore, Simmons, Rosenberg, and Rosenberg (1973) found that young adolescents, compared to children

in grades three to six, exhibited heightened self-consciousness, instability of self-image, lower confidence in their academic ability, slightly lower global self-esteem, and more frequent depressive affect. Furthermore, and most importantly for this chapter, the 12-year-olds in a seventh-grade junior high school evidenced greater disturbance in self-image and confidence than the 12-year-olds in a sixth-grade elementary school, suggesting that the developmental differences are influenced by the educational environments experienced by the young adolescents, independent of, or at least in addition to, age.

Subsequent studies assessing change in self-perceptions have yielded a mixed pattern of results (see Table 1). Some studies report definite transition effects on self-perceptions. For example, Eccles, Adler, Futterman, Goff, Kaczala, Meece, and Midgley (1983) found a decline in children's confidence in their math abilities across grades 6–12 that was especially marked at the junior high school transition. Similarly, in The Transitions at Early Adolescence Study, Eccles et al. (1987) found a decline in general self-esteem between grades 6 and 7 when the children moved from elementary school to junior high school. And finally, Simmons and Blyth (1987) reported that the relative advantages experienced by sixth-grade children in a K–6 and 7–9 system disappeared after they made the transition to junior high school. Initially, the sixth-grade children in a K–6 school had higher self-ratings of their looks, sports ability, schoolwork ability, intelligence, and popularity than did their peers in the K–8 system in Year 1 of their study. But the next year, after the K–6 students had moved to junior high, these advantages disappeared. In contrast, other studies report little evidence of transition effects. For example, Thornburg and Jones (1982) found a decline in general self-esteem across ages 9–14 that was associated more strongly with age than with either grade level or school transitions, and Harter, Whitesell, and Kowalski (1987) found a decline in perceived cognitive competence between sixth and seventh grade for all children whether or not they made a school transition. Finally, several investigators have failed to find either grade-level differences or transition effects either in children's general self-esteem/confidence or in children's confidence in their abilities in specific domains even when they used the same measures as in the aforementioned studies (Connell, 1980; Connell & Tero, 1982; Dusek & Flaherty, 1981; Eccles, Wigfield, & Kaczala, 1988; Fenzel & Blyth, 1986; Greene, 1985; Harter, 1982; Jones, 1984; Prawat, Grissom, & Parish, 1979; Wigfield, 1984). Consequently, it appears that both the grade-related decline found by Eccles et al. (1984) and the school-structure-related decline found by Simmons et al. (1979) are not universal.

TABLE 1

Summary of Studies Related to School Transitions during Early Adolescence

Authors	Measures	Subjects	Developmental pattern
	AGE–GRADE COMPARISONS		
Cross-sectional studies			
Buhrmester (1980)	School fears and anxieties	Grades 3–9; school transition at grade 7	Increase from grades 6 to 7.
Connell (1980)	Perceptions of control over outcomes	Grades 3–9; school transition at grade 7	Increase in known vs. unknown source of control until grade 6; dramatic decrease at grade 7; subsequent increase.
Eccles, Adler, Futterman, Goff, Kaczala, Meece, & Midgley (1983); Eccles, Midgley, & Adler (1984)	Ability self-concept for math and English, perception of task difficulty for math and English, and perceived value of math and English	Grades 5–12; school transition at grade 7	Decline in attitudes toward math; marked drop from grades 6 to 7. No drop for English.
Epstein & McPartland (1976)	Attitudes toward school in general, commitment to schoolwork, and attitudes toward teachers	Grades 5–12; school transition at grade 6	Decline in commitment to schoolwork over the grades.
Gottfried (1981)	Academic intrinsic motivation for reading, math, social studies, and science	Grades 4–7; no school transition	Decline in intrinsic motivation at 7th grade for all subjects, but especially for reading and science.

(continued)

TABLE 1 (*Continued*)

Authors	Measures	Subjects	Developmental pattern
Haladyna & Thomas (1979)	Attitudes toward school in general and toward seven primary subject areas	Grades 1–8; school transition at grade 7	Decline in attitudes toward school and toward math, physical education, art, music, and science. Drop most marked from grades 6 to 7 for subjects, and from grades 4 to 5 for school in gener
Harter (1980), (1981)	Classroom Motivation Orientation (intrinsic–extrinsic)	Grades 3–9; school transition at grade 7	General decline; three scales of the motivational component show a marke drop from grades 6 to 7
Harter (1982)	Perceived Competence Scale (four scales: cognitive, social, physical, and general), achievement test scores	Grades 3–9; school transition at grade 7	No shift in absolute levels. Decline in relation between perceived cognitive competence and achievement test score at grade 7.
O'Connor (1978)	Perceptions of self, ideal self, and teachers' feelings	Grades 4–6; school transition at grade 6	6th graders had largest self-ideal discrepancy and perceived teachers as being most negative about them.
Prawat, Grissom, & Parish (1979)	Locus of control, achievement motivation, and global self-esteem	Grades 3–12; grades 6–8 in middle school	Drop in achievement motivation only during middle school years.
Thornburg (1985)	Simmons & Rosenberg's Self-Esteem Scale, perceived anonymity, and victimization	Ages 11–13; grades 6–8 (in middle school)	Decline in feelings of anonymity and victimization. Decline in girls' self-esteem.
Wigfield (1984); Eccles, Wigfield, & Kaczala (1988)	Self-concept of ability and interest in English and math	Grades 5–12; school transition at grade 7	Decline in self-concept and interest in math but not English.
Wigfield & Meece (1987)	Math anxiety and math worries	Grades 6–12; school transition at grade 7	No consistent developmental trends; lowes in grade 6, highest in grade 9.
Longitudinal and cross-sequential studies			
Schulenberg, Asp, & Petersen (1984)	Self-Image Questionnaire for Young Adolescents, school grades	3 waves: 1 each school year; initial sample in grade 6; most but not all of the sample made a school transition at grade 7	Self-image increase from grades 6 to 8. School grades decline, especially betwee grades 6 and 7. Decline of popularity of math in grade 7.
SCHOOL TRANSITION COMPARISONS			
Cross-sectional studies			
Thompson (1982)	School climate with respect to home–school relations, child communication patterns, and alienated–deviant behaviors	Grades 5–8; school transition at grade 7	Sharp decline in home–school relations, student perceptions of power and control at school, and increase in alienated deviant behavior. Changes occur primarily between grades 6 and 7.
Longitudinal studies			
Berndt (1987); Berndt & Hawkins (1987)	Harter's Perceived Competence Scale; Classroom Environment Scale: involvement, affiliation, and teacher support	3 waves: spring grade 6, fall and spring grade 7; school transition at grade 7	Decline in perceived competence. Studen rating of teacher support declined for students moving into a traditional scho but remained stable for students movin into a school with small-teams approac

(*continue*

TABLE 1 (*Continued*)

Authors	Measures	Subjects	Developmental pattern
Connell & Tero (1982)	Harter's Perceived Competence Scale for Children, children's perception of control, and the Iowa Test of Basic Skills	Wave 1: April, grades 3, 4, 6, & 7; Wave 2: longitudinal follow-up Oct., grades 5, 6, & 8; school transition at grades 4 & 7	Increase in mean level of unknown perceptions of control after the transition to junior high school; no change with movement from grade 3 to 4. No change in competence evaluation or affect associated with either transition.
Eccles, Wigfield, Reuman, & Mac Iver (1987)	Self-concept of ability in math, English, sports, & social; general self-esteem; reasons for coming to school	4 waves; fall and spring of grade 6, fall and spring of grade 7; school transition at grade 7	Decline in self-concept, especially marked for social and general self-esteem. Increase in "because I have to" as reaso to attend school.
Greene (1985)	Self-reported moods and activities, Simmons & Rosenberg's Self-Esteen Scale, activity participation	3 waves over 9 months: spring year 1, fall and winter year 2; grades 5 & 6; school transition at grade 7	No differences in self-esteem. Transition students were more variable in mood than nontransition students and more variable after the transition than before Activity preferences differ for transitior and nontransition students.
Nottelmann (1982, 1987)	Harter's Perceived Competence Scale, teachers' rating scale of child's actual competence, and pubertal index	3 waves: May school year 1, November and May school year 2: initial sample in grades 5 & 6 in K–5/6–8 or K–6/7–9 systems	Children's perception of competence weakly affected by transition: Transitior students had slightly higher estimates of their general competence than nontransition students. Absolute differences between children's self-assessments and teachers' ratings greater before than after transition.
Petersen & Crockett (1985)	Pubertal development, body image, impulse control, psychopathology, course grades, and family relations	3 waves: 1 each school year for 3 years; initial sample in grade 6; school transition for most children at grade 7	Body image declined, school grades declined, perceptions of family relations declined, perception of peer relations improved from grades 6 to 7.
Power (1981)	Attitudes toward science (semantic differential scale), Learning Environment Inventory, and Classroom Activities Questionnaire	4 waves: March and November in 2 sequential years; initial sample in grade 7; school transition at grade 8	Students making a transition to traditional classrooms declined in attitudes toward science, while students moving into open-area classrooms improved in attitudes. Student perceptions of the environment not strongly associated with attitudes.
Reuman, Mac Iver, Eccles, & Wigfield (1987)	Self-concept of ability in math, anxieties in math, interest in math, teacher's ratings of child's natural math talent	4 waves, fall and spring of grade 6, fall and spring of grade 7; school transition at grade 7	Slight decline in self-concept depending on ability level of 7th grade class. Decrease in teachers' ratings of children's natural talent.

(*continued*)

TABLE 1 (*Continued*)

Authors	Measures	Subjects	Developmental pattern
Rubenfeld & Schumer (1986)	Self-image, puberty assessments, extracurricular activities, anonymity, locus of control, standardized tests, and grades	2 waves: May school year 1, November school year 2; initial sample grade 6; school transition at grade 7 (girls only)	Sharp decline in self-image, primarily due to drop in perceived appearance. Drop in participation in extracurricular activities. Increase in anonymity.
Schwarzer, Jerusalem, & Lange (1982) (Germany)	Self-esteem, self-concept of ability, self-efficacy, and latent self-concept	2 waves: September and January of first year in secondary school; ages 10–11 years	Academic self-concept of low-ability children positively affected by entrance into lower ability tracked institution.
Youngman (1978) (England)	Self-concept, attitudes toward school, and standardized tests	2 waves: May school year 1, spring school year 2; initial sample: last year of primary school	Pattern of change dependent on type of school, rural versus urban setting, and initial personality characteristics of the children. Some children more at risk (children with initially poor self-concept and disenchanted children) for the negative changes associated with transition into secondary school than others.
	SCHOOL ORGANIZATIONAL COMPARISONS		
Cross-sectional studies			
Moore (1983)	Attitude toward school, self-esteem, pupil control behavior, reading test scores, and attendance	Grades 7–8 in K–8 and in traditional junior high school	Students in K–8 school had more favorable responses on all scales than did students in junior high schools.
Simmons, Rosenberg, & Rosenberg (1973)	Specific and global self-esteem scales, perception of opinions of others, and self-consciousness	Ages 8–18 in K–6, 7–9, & 10–12 systems	Decline in self-esteem; marked drop between grades 6 and 7. 12-year-olds in 7th grade in junior high school had lower self-esteem than 12-year-olds in 6th grade in elementary school.
Thornburg & Glider (1984)	Simmons & Rosenberg's Self-Esteem Scale; anonymity and victimization	Grades 6–7 in two K–6 schools and one 6–8 school	Age produced more significant effects than either school configuration or grade. Minimal changes in social characteristics and perception due to school transition or grade changes, and these depended on grade level of transition.
Thornburg & Jones (1982)	Simmons & Rosenberg's Self-Esteem Scale; anonymity and victimization	Grades 4–9 in four different school configurations: K–8, 5–8, 6–8, & 7–9	General decline in self-esteem. Transition at 6th grade lowered self-esteem while transition at 7th grade did not. 14-year-olds in 8th grade did not differ from 14-year-olds in 9th grade on any subscale.
Warburton, Jenkins, & Coxhead (1983) (England)	Attitudes toward science, science achievement tests	Age 14, transferred into secondary schools at ages 11, 12, or 13	Pupils transferring at age 13 scored higher on science achievement tests than those transferring at ages 11 or 12. Students transferring at age 12 scored lower on attitudes toward science tests than those transferring at either 11 or 12.

(continued)

TABLE 1 (*Continued*)

Authors	Measures	Subjects	Developmental pattern
Longitudinal and cross-sequential studies			
Blyth, Simmons, & Bush (1978); Simmons & Blyth (1987); Simmons, Blyth, Van Cleave, & Bush (1979)	Self-image, Simmons & Rosenberg's Self-Esteem Scale, perception of other's expectations, personal characteristics, attitudes toward school, extracurricular activities	2 waves, 1 year apart; initial sample in grade 6 in K–8/9–12 or K–6/7–9/10–12 systems	Decline in self-esteem for 7th grade girls making the transition to a junior high school, especially if they had begun dating. No such decline for other groups. Perceptions of anonymity increase with transitions to junior high but not for students in K–8 system. Lower participation in extracurricular activities for 7th graders in junior high school than in K–8 school. Boys movin into junior high report increased victimization while boys in K–8 report decline.
Blyth, Simmons, & Carlton-Ford (1983); Simmons & Blyth (1987)	Simmons & Rosenberg's Self-Esteem Scale, grade-point average (GPA), tests, physical measurements	4 waves, one in each grade 6, 7, 9, & 10; initial sample in grade 6 in K–8/9–12 or K–6/7–9/10–12 systems	Greater decline in self-esteem of those transferring at 7th grade than those transferring from a K–8 school to the 9th-grade in high school, especially among females. Greater decline in girls self-esteem from grades 6 to 7 in those girls making junior high transition thar for girls staying in K–8 system. Girls making junior high transition show additional decline when they move into high school. Decline in boys' GPA wher moving into junior high school. Declin in girls' GPA when they move into high school.
Harter, Whitesell, & Kowalski (1987)	Affective reaction to schoolwork, perceived academic competence, intrinsic vs. extrinsic motivational orientation, schoolwork performance concerns	2 waves: May school year 1, December school year 2; initial sample: grades 5–7 in either K–5/6–8 or a K–6/7–9 system	No change in perceived academic competence for children moving to middle school at grade 6, decrease with movement to 7th grade—both within a middle school and in association with transition to junior high. Students showing increases in perceived competence increased in intrinsic motivation. Affective reaction declined with school transition independent of grade.
Jennings & Hargreaves (1981) (England)	Academic self-image and attitude toward various aspects of school life	2 waves: spring grade 6, fall grade 7; initial sample: ages 10–11 in traditional feeder comprehensive school system or in feeder–middle-school program in same building	Students moving from a feeder school to comprehensive school scored lower on of 10 subscales, whereas those whose school was reorganized as a middle school that remained in the same building scored higher on 9 of 10 scale
Jones (1984)	Nine self-image measures, self-consciousness, Simmons & Rosenberg's Self-Esteem Scale; victimization and anonymity.	5 waves: 1 in spring of school year 1; 4 in first quarter of school year 2; initial sample	Self-consciousness decreased after transition and perceived victimization and anonymity increased. Transition effects disappeared after 9 weeks.

(continue

TABLE 1 (*Continued*)

Authors	Measures	Subjects	Developmental pattern
		in grades 5 & 6 in K–5, K–6, and 6–8 systems	
Jones & Thornberg (1985)	Simmons & Rosenberg's Self-Esteem Scale; anonymity, victimization, and generational differences	2 waves: wave 1—late spring school year 1; Wave 2—early fall school year 2; Initial sample—grades 5 & 6 in K–5/6–8 or K–6/7–9 systems	Reports of previous change mediated transiton effects on anonymity and self-consciousness measures but had litt effect on victimization and self-esteem measures. School transitions lead to increase in anonymity but have no effec on self-esteem, feeling of victimization or self-consciousness.
Larson (1982, 1983)	Self-assessment of school experience, locus of control, self-image Quality of School Life Scale (QSL), and Piers & Harris's Self-Concept Scale	4 waves: November and May of 6th grade, May grade 7, May grade 8; initial sample in grade 6 of 6–8 middle school	General increase in self-esteem in 6th grade. Only minor differences among different school structures. Scores for 6th graders in elementary school increased more than 6th graders in middle school. By the end of the 8th grade, scores the same. 7th and 8th graders feel better about themselves when 9th graders are not present. 6th graders prefer middle schools more tha elementary schools. Scores on the QSL declined with grade; magnitude of decline greater in the junior high schoo than in middle school.

Mixed patterns of results also emerge for general measures of self-esteem and confidence in studies that assess specific domains. For example, we have found different patterns of change associated with children's estimates of their competence in various domains: The longitudinal declines at the transition to junior high school were the most extreme for children's ratings of their social and physical competence and their general self-esteem (Eccles et al., 1987). In contrast, Petersen and her colleagues found the largest declines associated with body image and general psychological adjustment rather than with social confidence (Petersen & Crockett, 1985; Schulenberg, Camarena, Sarigiani, & Ebata, 1986).

Longitudinal changes on more specific measures of perceived competence in particular academic domains are even less extreme and more variable; and they appear to depend on several additional variables such as the initial ability and motivational levels of the child, the ability grouping and general teaching practices experienced by the child in each grade, and the type of school structure and transition (Eccles et al., 1987; Reuman, Mac Iver, Eccles, & Wigfield, 1987; Schwarzer, Jerusalem, & Lange, 1982; Youngman, 1978). The general patterns of these changes make sense given these mediating and moderating variables. For example, as one would predict from social comparison theory, movement into between-class or between-school ability-tracked environments appears to induce an increase in the academic self-concepts of low-ability children and a decrease (or no change) in the academic self-concepts of high-ability children (Reuman et al., 1987; Schwarzer et al., 1982).

Both sex and pubertal status have also emerged as significant influences on the nature of change in early adolescents' self-perceptions, suggesting that some children are more vulnerable to the negative effects of the junior high school environment than others. For example, Simmons and her colleagues, in their longitudinal study of children in grades 6 to 10 in Milwaukee, report that girls who move into a junior high school at seventh grade evidence a decline in their self-esteem that is not matched by either girls moving from sixth to seventh grade in a K–8 school or by boys making either transition (Blyth, Simmons, & Bush, 1978; Blyth et al., 1983; Simmons & Blyth, 1987; Simmons et al., 1979). Although not consistent across all studies, a similar pattern of gender differences in the response to the junior high school transition has been reported in several studies (e.g., Larson, 1982, 1983; Simmons et al., 1973). When reported, these gender differences appear to reflect the greater vulnerability of relatively more mature girls, particularly on measures assessing physical or social self-concept and/or general self-

esteem (at this age, more mature means showing signs of pubertal development and initial interest in dating) (Blyth, Simmons, Zakin, & Murry, 1982; Nottelmann, 1982; Simmons et al., 1973). It should be noted, however, that several longitudinal studies report neither consistent gender effects nor consistent pubertal status effects (e.g., Berndt & Hawkins, 1987; Harter et al., 1987; Petersen & Crockett, 1985) or report even more complex patterns of interactions involving both gender and academic ability level as well as the type of transition being made and the age of the children (Eccles et al., 1987).

Other child characteristics that have been suggested as moderators of the impact of school transition include the stability of one's friendship network, one's pretransition levels of self-esteem and domain-specific confidence, physical appearance, ethnic group, and family relationships and structure (Barber, 1987; Berndt, 1987; Flanagan, 1987; Nisbet & Entwistle, 1969; Simmons & Blyth, 1987; Simmons, Carlton-Ford, & Blyth, 1987). Although these suggestions are just beginning to be studied, some support has emerged for the importance of each of these variables.

The comparisons of most relevance to this chapter are those that assess developmental change longitudinally over the transition to either middle or junior high school, and those that compare children of the same age and grade level making different types of school-level changes. Stimulated by the seminal work of Simmons and her colleagues, there are now several such studies focusing on self-perception, self-concept, and self-esteem. The results, however, are not consistent across studies. The subsequent longitudinal studies by Simmons, Blyth, and their colleagues comparing children moving from sixth to seventh grade in a K–8 school, with children moving from a K–6 elementary school into a traditional 7–9 junior high school yield the pattern already discussed: Girls, especially early maturers who have also started dating, evidence a decline in their self-esteem when they move into a junior high school at seventh grade. Similar patterns of school-related change were reported by Larson (1982, 1983) for girls and by Moore (1983) for both sexes; in both cases, students making the transition into a junior high school evidenced a greater decline in their self-perceptions than students making other types of sixth- to seventh-grade transitions. The other major studies that either compare fifth to ninth graders undergoing different types of school–grade transitions (both within a school and between schools), or follow children of this age range longitudinally as they make the transition into a middle or junior high school, have yielded quite mixed results with no clear pattern even when similar or identical measures of self-perceptions are used (Clark & Clark, 1982; Eccles et al., 1988; Harter, et al., 1987; Jones & Thornburg, 1985; Nottelmann, 1982, 1987; Thornburg & Glider, 1984; Thornburg & Jones, 1982; see Table 1).

Although less common, studies assessing the relationship of self-perception to other variables have yielded a more consistent pattern. For example, even though there were no significant grade-level differences in the level of perceived competence, Harter (1982) found the lowest correlation between school performance and perceived academic competence among seventh graders (most of whom were in their first year of junior high school). Similarly, O'Connor (1978) found the greatest discrepancy between children's real and ideal self images among sixth graders who had just made the transition to a middle school. These results suggest that children's standards for self-evaluation may be disrupted when they move to a new school environment. Longitudinal studies offer some support for this hypothesis. For example, Harter et al. (1987) found the strongest negative relationship of anxiety to perceived intellectual competence and to intrinsic motivation among early adolescent children who had just undergone a school transition into either a middle school or a junior high school. Similarly, the across-time correlations between children's ratings of their math competence in our Transitions at Early Adolescence study are much lower across the 6-month period marking the transition from a K–6 elementary school to a 7–8 or 7–9 junior high school than across the 6-month period within each school year (Reuman et al., 1987). Whether these changes reflect changing grade level or changing school remains to be determined.

SELF-RELATED AFFECTIVE REACTIONS: ANXIETY, WORRY, AND AFFECTIVE RESPONSE TO PERFORMANCE

Several investigators have assessed developmental changes in early adolescents' affective reactions to school. Although there are fewer studies of these changes than of changes in self-perceptions, the findings are rather consistent for global measures. In cross-sectional studies of upper elementary and junior high school age children, older children report higher levels of test anxiety, more self-consciousness, and more extreme worries about their performance (Buhrmester, 1980; Harter et al., 1987; Hill, 1980). The one study that focused directly on school transition effects suggests that transitions, rather than grade level changes, may be responsible for these increases in worry and anxiety, as well as for a decline in young adolescents' positive response to their

academic performance (Harter et al., 1987). But given the mixed pattern that has emerged as more studies have been done on self-perceptions, we need to be cautious in generalizing these results until more work is done on these outcome measures.

Studies looking at math anxiety in particular have yielded a different picture. Although only a few studies have been done, they do not report a consistent developmental decline across the early adolescent years (Reuman et al., 1987; Wigfield & Meece, 1987). As was true for subject-matter-specific self-concepts, the developmental changes in math anxiety seem more sensitive to the specific instructional environment the children move into than to school transitions per se.

MOTIVATIONAL ORIENTATION

The final set of achievement-related beliefs are all associated with motivational orientation. Three different sets of constructs have been investigated: (1) general achievement motivation, (2) intrinsic versus extrinsic motivation, and (3) locus of control–knowledge of control. The results across all three constructs are fairly consistent and, for the most part, seem to be linked quite directly to the middle-school–junior-high school transition when these transitional effects are tested. In general, young adolescents, following a transition into either a middle school or a junior high school, (1) report lower achievement motivation (Prawat et al., 1979), (2) appear more extrinsically motivated and less intrinsically motivated (Harter, 1982; Harter et al., 1987), and (3) are more likely to report than they do not understand the causes of their outcomes (Connell, 1980; Connell & Tero, 1982). This last result is especially interesting given that it represents a reversal of the general developmental trend toward increasing understanding of the causes of one's academic outcomes with advancing age and grade level. However, although it is interesting, it is not surprising. Just as perceptions of anonymity increase when students move to a new school, the degree to which students are unsure of the reasons for outcomes in the academic domain might be expected to increase when they move to a new environment, at least temporarily, until they can reassess the criteria being used by teachers for performance evaluation in this new setting.

Most important for our argument, the downward shifts in motivational orientation appear to be linked to the decline in children's perceived competence associated with the transition to a new grade level. They are also related to children's perception of the changes in their

educational environments: Children who perceive that their new environment is more externally controlled in terms of increased external emphasis on getting good grades, increased scholastic competition, and increased teacher control also report higher levels of intrinsic motivation (Harter et al., 1987). As we discuss more fully later in this chapter, these are the types of changes that often characterize the differences between elementary school and junior high school environments.

It should be noted that two studies find declines in intrinsic motivation associated with grade changes independent of transition effects (deCharms, 1980; Gottfried, 1981). Therefore, as is true for self-perceptions, both grade-related changes and transition effects may depend on the educational environments the students move out of and into.

SUMMARY

There is some evidence in a number of studies that the transition from elementary school to middle or junior high school is associated with negative changes in young adolescents' motives, beliefs, values, and behaviors; yet other studies, sometimes using similar measures, fail to replicate these findings. Why are the findings inconsistent? One reason may be the failure to specify what the transition actually represents—a transition from what to what? In most cases, researchers assume that the transition to junior high school represents a shift from a smaller, more personal elementary school environment in which students experience one teacher and a stable peer group, to a larger, departmentalized school; changes at the school or classroom level are rarely measured. Although there may be systematic changes in the classroom environment across the transition in *most* cases, one cannot assume that is true for *all* cases. Indeed, classroom practices that have little to do with the departmentalized organization or size of the junior high school may change after the transition in many schools and may have a particularly powerful influence on student beliefs and behaviors. The fact that students' attitudes toward mathematics and English show different patterns of changes during the transition supports this suggestion (Eccles et al., 1983). Similarly, the fact that changes vary across schools with different organizational structures (Simmons & Blyth, 1987) suggests that variations at the school level are also important. As has been concluded from the voluminous and often inconsistent literature on ability grouping and open versus traditional classrooms, it is extremely

important to specify what is meant by terms and to document exactly what is going on at both the classroom and the school level (Marshall, 1981; Passow, 1966).

In fact, the studies just reviewed support the hypothesis that transition effects are mediated by changes in the school and classroom environment. For example, the transition differentially affected students in the following situations: (1) students who moved into a junior high school that was organized into small teams responded differently than students who moved into a traditional junior high school (Berndt & Hawkins, 1987); (2) students who moved into open-area science classrooms responded differently than those who moved into traditional science classrooms (Power, 1981); and (3) students who moved into a comprehensive secondary school responded differently than those who moved into a technical school (Trebilco et al., 1977). Even in these studies, it would be more enlightening to have information about specific organizational, instructional, and climate variables in order to assess directly whether the changes in students' beliefs and self-perceptions are related to changes in those characteristics of the school environment outlined earlier: namely, (1) practices linked to increased incidence of self-evaluation and social comparison such as competitive motivational structures, ability grouping, whole-class instruction, and normative grading coupled with tougher grading standards; (2) practices linked to decreased student autonomy and increased teacher control; and (3) practices linked to decreased personal contact and increased bureaucratization. Eccles et al. (1984) documented the association of these school and classroom characteristics to lower self-perceptions and motivation, less interest in the subject matter, and more negative attitudes toward the environment. Thus, it seems likely that such changes could contribute to the declines summarized here. The evidence that such changes often characterize the transition to junior high school is reviewed in the next section.

What do the studies reviewed in this section tell us about other influences on the relationship between the transition and student belief systems? Gender has emerged as important in several studies. While the results are not entirely consistent, typically, when gender differences are found, females seem to experience more negative change in their self-esteem than males. What can account for the discrepant studies? Jones (1981) suggests that the age of transition and the type of postelementary school environment might be critical. In particular, he suggests that the nature of the middle school, with its de-emphasis on events such as interscholastic sports and extracurricular activities, which have traditionally brought prestige to the male, coupled with the fact

that transition into middle school typically occurs at the sixth rather than the seventh grade when girls are more likely to be prepubertal, may result in less self-enhancement for males and less conflict for females.

The role of race, ethnic group, and social class as moderator variables has not been given adequate attention. Simmons' work, however, suggests that the transition may affect black and white girls differently (Simmons & Blyth, 1987) and there are certainly good reasons to predict that each of these population characteristics will be important.

Pubertal timing has also been suggested as important but there does not appear to be a strong direct association between pubertal timing or status and early adolescent adjustment, or a strong interactive effect of pubertal timing and school transition (Petersen & Crockett, 1985). When there is an effect, pubertal status appears most related to variables associated with the physical aspects of puberty such as feelings of attractiveness and body image, and to general self-esteem rather than to more academic achievement-related beliefs. There is also some evidence suggesting that girls who experience simultaneous pubertal, social (such as dating), and school changes are especially vulnerable to negative transition effects (Blyth et al., 1983; Nottelmann, 1982; Simmons & Blyth, 1987). In light of the conflicting results, Petersen concluded that "the belief in pubertal development as the primary influence on adjustment must be modified" (Petersen & Crockett, 1985, p. 203) and suggested that stereotypical "pubertal behavior" is likely to characterize particular populations of adolescents when the majority of its members become "mid-pubertal" regardless of the pubertal status of specific individuals within the population. Grouping populations of early adolescents together in an isolated setting like a junior high school may exacerbate this process, leading us to attribute, mistakenly, early adolescent behavioral changes primarily to pubertal status rather than to environmental influences in interaction with pubertal development.

Age at transition and grade at transition are confounded, and both, in turn, are confounded with transition to middle versus junior high school. Most junior high schools begin at the seventh grade, whereas most middle schools begin at fifth or sixth grade. The middle school philosophy is also different from the junior high school philosophy in ways that ought to yield less negative transition effects. In fact, several of the studies comparing transition to middle and junior high schools find somewhat more positive effects associated with middle school attendance (Larson, 1982, 1983; Warburton, Jenkins, & Coxhead, 1983). However, the differences in practices between middle and junior high schools can not be inferred; there is evidence that many middle schools in actual practice do not differ markedly from junior high schools (Erb,

1981; Lipsitz, 1977; Ward, Mergendoller, & Mitman, 1982). For example, in Larson's study (1982, 1983) the incidence of interdisciplinary teams and heterogeneous ability grouping was much greater at the middle than the junior high schools, but other instructional practices did not differ.

Grade configuration has been studied extensively, particularly by Thornburg and his colleagues. The findings regarding the superiority of the K–8 system for young adolescents appear to be consistent, though the reasons for this superiority have still not been carefully researched. In comparisons of different schools that house only young adolescents, there is not yet strong evidence that one grade organization is superior to another. As Lipsitz (1977) and others have pointed out, the effects of grade organization are best assessed in systems that differ only on that variable. "Given a school environment that matches young adolescents in their vitality, creativity, and sensitivity to changes . . . any organization will look beautiful. But given two schools equally open to the variability and energies of this age group, school organization based on differing choices about age-integration and the implications of adolescent development should produce some differing outcomes. We don't know what these will be" (p. 97).

Simmons has proposed that size and location (urban or suburban) of the junior high school may be important variables to consider (Simmons & Blyth, 1987; Simmons et al., 1987). Using data from a 5-year longitudinal study, the effects of school size, ethnic heterogeneity, and group or individual movement from class to class were examined. The nine junior high schools in this sample were departmentalized, but in some of them, the children moved as a group from class to class, while in others, the children moved independently among classes. In general, larger school size and greater ethnic heterogeneity were associated with some negative effects including loss of self-esteem, decreased involvement with school activities, and increased feelings of victimization and anonymity. These results are consistent with some of the findings from the small-school–big-school literature (Barker & Gump, 1964), suggesting that large schools may provide less positive environments, especially for vulnerable or marginal children. Although Simmons' studies were conducted in large, urban areas, a number of studies have been conducted with suburban middle- and upper-middle-class samples (Nottelmann, 1982, 1987; Schulenberg, Asp, & Petersen, 1984), and these studies yield less clear-cut results. Thus, until more studies are conducted with contrasting and carefully specified samples, it will not be possible to determine the extent to which size and location of school are important mediators of transition effects.

The evidence of negative changes in the belief systems of young adolescents as they move from elementary school to junior high school must be taken seriously. The studies that show positive effects for students moving into certain programs are encouraging. Although some people believe that the physiological changes associated with puberty make it difficult for most children to maintain a healthy self-image and an academic orientation at this stage of life, a more detailed understanding of the effect of specific changes in the school and classroom environments on these developing children is needed. Furthermore, studies are needed that assess the impact of different environmental characteristics on different components of young adolescents' beliefs, self-perceptions, motivations, and interest patterns. General school characteristics, such as size and formality, are probably more likely to influence general self-esteem, feelings of anonymity and victimization, self-concepts in domains other than the academic, and other indices of general mental health. In contrast, classroom and teacher characteristics are more likely to influence subject-matter-specific beliefs and both general and specific academic motivational orientations. But until studies provide us with more specific information, it is helpful to know what the literature now suggests regarding systematic changes in the school or classroom environment as children move into middle and junior high schools. The next section of this chapter undertakes such a review.

CHANGES IN THE ACADEMIC ENVIRONMENT

What do we know about systematic changes in the school or classroom environment in association with the transition from elementary school to middle or junior high school? We know that, in most cases, students move to a larger school, and they shift from being in the oldest to the youngest class; in addition, these students are more likely to be assigned to classrooms on the basis of their ability and to receive letter grades on classwork and report cards than was the case in elementary school. The self-contained classroom with one teacher and a stable peer group is typical of many elementary schools, whereas departmentalization of subject matter characterizes most junior high schools, so that students have a different teacher for each subject matter area, and their classroom composition changes across the school day.

In this section, we describe several empirical studies that compare the elementary school environment to the junior high school environment.

(In some cases, the comparison is actually made with middle schools or secondary schools.) Given the concern with junior high schools, remarkably few studies have focused on differences in the classroom or school environment across grades or levels. Therefore, we have drawn together information from a variety of sources, looking for converging evidence on which to base our description of classrooms before and after the transition to junior high school. A few of the transition studies described in the first section included environmental variables; researchers in the United Kingdom and Australia, in particular, have stressed the importance of including environmental measures in studies looking at transition effects. In The Transitions at Early Adolescence Study, we have measured the math classroom environment before and after the transition to junior high school, using student, teacher, and observer perceptions. Other studies have compared classrooms across grades or school levels without focusing on the transition. Recently, a few studies have directly compared different school structures for young adolescents (middle versus junior high school, team approach versus departmentalized approach, K–8 grade organization versus 7–9). These studies use a number of different high- and low-inference observation systems and self-report measures and a variety of informants, including teachers, students, and trained observers. Nonetheless, we have done our best to integrate the findings into a coherent composite picture. It should be noted, however, as we argued earlier, that there is variation across schools on all these indicators and that it is crucial to find studies that measure both the environmental characteristics of pre- and posttransition schools and students beliefs and attitudes.

Looking at the relatively few studies that have been conducted, four patterns emerge. First, junior high school classrooms, as compared to elementary school classrooms, are characterized by a greater emphasis on teacher control and discipline, a less personal and positive teacher–student relationship, and fewer opportunities for student decision-making and self-management. Second, the shift to junior high school is associated with an increase in practices such as whole class task organization, between classroom ability grouping, and public evaluation of the correctness of work; each of which may encourage the use of social comparison and ability self-assessment. Third, there is evidence that classwork, especially in mathematics, during the first year of junior high school requires lower-level cognitive skills than classwork at the elementary level. Finally, junior high school teachers appear to use a higher standard in judging students' competence and in grading their performance than do elementary school teachers.

TEACHER TRUST, DISCIPLINE, AND CONTROL: TEACHER–STUDENT RELATIONSHIPS

In Eccles et al. (1984), we argued that declining opportunities for autonomy and choice, in concert with increasing levels of teacher control, could undermine students' academic interest and motivation. If young adolescents experience these types of changes as they move into junior high schools, then we would expect their interest and intrinsic motivation to decline.

Brophy, Evertson, and their colleagues have found consistent evidence that junior high school teachers spend more time maintaining order and less time teaching than elementary school teachers (Brophy & Evertson, 1978). Other researchers have also found that junior high school classrooms are characterized by high levels of teacher control and discipline (e.g., Moos, 1979). Willower, Hoy, Helsel, and their colleagues have conducted a large number of studies assessing educators' orientation to controlling, disciplining, and trusting students. Based on both student and teacher perceptions, elementary school educators consistently emerge as less oriented to control and discipline than secondary school educators (Hoy, 1968; Pritchett & Willower, 1975; Sweeting, Willower, & Helsel, 1978; Willower, Eidell, & Hoy, 1967; Willower & Jones, 1967; Willower & Lawrence, 1979; Yuskiewicz & Willower, 1973). Brooks (1977) found that junior high school teachers had a more custodial orientation than senior high school teachers. In addition, teachers in junior high schools were found to be more custodial than their middle school counterparts (Hedberg, 1973; Highberger, 1976), and seventh- and eighth-grade students in K–8 schools rated their teachers as less controlling and more humanistic than seventh-grade students in traditional high schools (Moore, 1983). In The Transitions at Early Adolescence Study, sixth-grade elementary-school math teachers trusted students more and believed that students needed to be controlled and disciplined less than did junior high school math teachers (Midgley, Feldlaufer, & Eccles, in press).

Several studies also point to a change in the teacher–student relationship after the transition to junior high school. In the Trebilco et al. study (1977), for example, students reported less-favorable interpersonal relationships with their teachers after their transition to secondary school. In The Transitions at Early Adolescence Study, both students and observers rated junior high school mathematics teachers as less friendly, less supportive, and less caring than the teachers who taught the students mathematics the previous year, in elementary school (Feldlaufer, Midgley, & Eccles, in press). Finally, Hawkins and Berndt

(1985) reported a decline in students' ratings of both affiliation with other students and support from teachers following the transition. They also found that these declines were more marked for the group of students who moved into a traditional junior high school than for the group who moved into a junior high school with a small-teams approach. This latter group actually perceived an increase in teacher support in conjunction with the transition. The authors conclude that "school structures that encourage close, supportive contact between students, and among teachers and students, contribute to positive self-concept and attitudes toward school following the transition to junior high" (Hawkins & Berndt, 1985, p. 16).

Taken together, these various studies suggest that many young adolescents experience an increase in teacher control and a decrease in the quality of their affective relationships with their teacher as they move into traditional junior high schools—both of which could precipitate a decline in student interest and motivation.

STUDENT SELF-MANAGEMENT AND CHOICE

It seems unlikely that teachers who distrust students and feel the need to control students' behavior will offer their students opportunities for self-management and choice. Consequently, as predicted by Eccles et al. (1984), it is quite possible that students will, in fact, have fewer such opportunities in junior high school than they had in elementary school despite their increasing age. Several studies provide support for this hypothesis. A study of particular importance is the Junior High School Transition Study (Ward, Mergendoller, Tikunoff, Rounds, Dadey, & Mitman, 1982). The study followed students from 13 sixth-grade classrooms in four feeder elementary schools to 11 seventh-grade classrooms in one 7–8 junior high school. Using classroom observations and teacher interviews, they found that sixth graders were given more opportunities to take responsibility for various aspects of their school-work and were given more choices than were seventh graders.

In an elementary-school study that has implications for the junior high school, Lee (1979) interviewed second-, fourth-, and sixth-grade students and teachers regarding perceived constraints and prerogatives in schools and those they thought students ought to have. Children saw much less congruence between the actual school environment and their assessment of what should be than did the teachers. Children's perceptions of their status changed significantly over grade level but teacher perceptions showed little variation with grade. Although students felt significantly less constrained over the grades, particularly between the second and fourth grade, there was a grade-related decrease in student's congruence due to a greater increase in their perceptions of what they should be able to do than of what they actually perceived they could do. Lee suggests that this pattern of decreasing congruency may be a precursor to student alienation in the secondary school. Using some of Lee's measures, The Transitions at Early Adolescence Study has assessed student and teacher perceptions of actual and preferred decision-making opportunities in mathematics classrooms before and after the transition to junior high school. Both students and teachers perceived fewer actual decision-making opportunities after the transition. In addition, while students expressed a desire for more input after the transition, their junior high school teachers actually believed they should have fewer decision-making opportunities than did their elementary teachers (Midgley & Feldlaufer, 1986).

TASK ORGANIZATION

Although there has been an increase in interest in the effects of task differentiation, competition, and evaluation practices in the classroom on student motivation and ability perceptions (e.g., Ames & Ames, in press; Covington, 1984; Eccles et al., 1984; Maehr, 1984; Marshall & Weinstein, 1984; Rosenholtz & Simpson, 1984), few empirical studies have traced changes in these variables across grade levels or school levels. In the Junior High School Transition Study, whole-group instruction was the norm in the seventh grade, small-group instruction was rare, and individualized instruction was not observed at all. In contrast, sixth-grade teachers mixed whole- and small-group instruction within and across subject areas (Rounds & Osaki, 1982). Changes in task organization after the transition to junior high school were also found in The Transitions at Early Adolescence Study: Both teachers and observers reported an increase in whole-class task organization after the transition with most students working on the same assignment at the same time, using the same textbooks, and receiving the same homework assignment (Feldlaufer et al., in press).

Changes such as these are likely to increase social comparison, concerns about evaluation, and competitiveness. They may also increase the likelihood that teachers will use normative grading criteria and more public forms of evaluation, both of which may impact negatively on some children's self-perceptions and motivation. These changes may also make aptitude differences more salient to both teachers and students, leading to increased teacher expectancy effects and decreased feelings of efficacy among teachers.

ABILITY GROUPING

We originally proposed that assigning students to classrooms on the basis of their ability would be another practice that could account for the decline in young adolescents' self-perceptions and academic motivation, particularly in mathematics and particularly for low-skill-level children (Eccles et al., 1984). We suggested that between-classroom grouping by ability might increase the likelihood of whole-class instruction, might make ability assessments seem more stable and unmodifiable to both teachers and students, and might create a stigma for low-skill students (see Eccles & Wigfield, 1985, for further discussion). There is evidence that assigning students to classes on the basis of their ability becomes more frequent after the transition to junior high school (Coldiron & McDill, 1987; Oakes, 1981). In addition, in junior high schools that do not use this practice, there is some evidence that within-classroom grouping by ability rather than by student interests increases after the transition (Rounds & Osaki, 1982).

The consequences of these changes appear more complex than we had originally speculated. Evidence from The Transitions at Early Adolescence Study suggests that changes in ability grouping practices at the transition to junior high school are related to changes in students' beliefs, values, and motivation (Reuman et al., 1987). But as reviewed earlier, the effects on these motivational constructs seem to be more a consequence of shifts in one's social comparison group than to the preceding factors: Students moving into high-math-ability classrooms suffer a decline in their self-perceptions and an increase in their anxiety while students moving into low-math-ability classrooms experience an increase in their self-perceptions and a decline in their anxiety. Thus, in terms of short-term motivational outcomes, the increase in the practice of assigning students to classrooms on the basis of their ability, common at junior high school, appears to have its most negative impact on students in high-ability classrooms. Whether the effects on long-term motivation, on teacher beliefs, and on school achievement coincide with our original predictions remains to be seen.

EVALUATION PRACTICES

Just as whole-group instruction and ability-grouping practices influence students' confidence and interest by inducing increased self-focus and competition, a greater emphasis on public evaluation can also undermine confidence and motivation by arousing anxiety, self-focus,

and competitiveness (see Eccles et al., 1984, for discussion). The data on changes in the nature of evaluation are less consistent, however, than the findings on whole-class instruction. In the Junior High School Transition Study, the evaluation practices of the sixth- and seventh-grade teachers did not differ (Rounds & Osaki, 1982). Likewise, in The Transitions at Early Adolescence Study, there was no evidence of a change in the frequency of giving grades on math classwork or homework assignments after the move to junior high school (Feldlaufer et al., in press).

These findings contrast with reports from other researchers who have found that as children progress through school, evaluation becomes more formal and more frequent (Gullickson, 1985; Hill & Wigfield, 1984). Surveying elementary, junior high school, and senior high school teachers regarding their evaluation practices, Gullickson (1985) found substantial differences across grades. Elementary teachers relied on a diversity of techniques; evaluations based on class discussions, papers, and behavior were emphasized more than objective tests. In junior high school, the use of objective tests as a basis for evaluation became much more common, and there was less variety in evaluation techniques. Harter et al. (1987) also found changes across grade levels. Sixth, seventh, and eighth graders in a middle school were asked questions about the emphasis on, and the frequency of, external evaluation of their academic performance, and about the saliency of social comparison for the current year and the previous year. At all three grade levels, students reported that in the current year, the environment was more evaluative and the social comparison was more salient than in the previous year. Eighth graders perceived the most difference between the former and current year.

ASSESSMENT OF COMPETENCE AND STANDARDS FOR EVALUATION

No predictors are as highly correlated with students' self-confidence and expectations as the grades they receive and their teachers' perceptions of their competence. If these change, or if the criterion on which they are based changes when students move into junior high school, then we would expect to see a shift in both the absolute levels of students' confidence in their academic abilities and the initial relationship of grades and teacher ratings of competence to students' self-perceptions.

There is evidence that junior high school teachers may use a stricter standard than elementary school teachers to assess student competency

and to evaluate student performance. In Nottelmann's transition study (1982, 1987), the elementary school teachers gave higher ratings of competency to students than the middle or junior high school teachers gave these same students. Similar results are emerging in The Transitions at Early Adolescence Study for sixth-grade elementary school teachers' and seventh-grade junior high school teachers' ratings of the same children's natural mathematical talent (Reuman et al., 1987).

There is even stronger evidence that children receive lower grades after the transition to junior high school than before. Armstrong (1964, as cited in Finger & Silverman, 1966) reviewed the school records of a large number of students in New York State schools. Approximately 45% of students with good elementary grades received fair or poor grades in junior high school. Finger and Silverman (1966) examined student reports of the grades they received the first marking period in junior high school and those received the previous year, in elementary school. Dividing students into groups based on whether their seventh grade marks were higher, the same, lower, or much lower than their sixth grade marks, higher grades in junior high school were received by 16% of the students, 30% stayed the same, and 54% received lower or much lower grades than they had received in elementary school. Similarly, in the Simmons and Blyth study (1987), students entering the junior high school at the seventh grade experienced a significant drop in mean grade point average when compared to students who moved to seventh grade in the K–8 setting.

Several authors interpret this decline as reflecting changes in performance, suggesting that the drop in performance might be accounted for by the increased cognitive and social demands on students in the junior high school. There is evidence, however, that challenges this suggestion. For example, in the Early Adolescence Study conducted by Petersen and her colleagues, final course grades in five subject matter areas declined significantly for both boys and girls between sixth and seventh grade despite the fact that there was no evidence of a parallel decrement in IQ, achievement test, or cognitive test scores (Kavrell & Petersen, 1984; Schulenberg et al., 1984). "Since cognition and achievement generally improve over early adolescence, the most probable explanation for the decline seen in academic performance is that teachers are grading harder over time" (Kavrell & Petersen, 1984, p.27). In support of this suggestion, Felner, Primavera, and Cauce (1981) found that moving to a new elementary school in grades one through eight did not have a significant impact on school performance; in contrast, the transition from elementary school to high school was associated with a drop in grades in English, mathematics, science, and social studies. Overall, students' GPA decreased by more than one-half letter grade after the transition.

The findings regarding differences in teachers' perceptions of students' competency and evaluation of performance before and after the transition are consistent and compelling. Further work needs to be undertaken to determine whether these differences reflect true changes in performance, differences in teacher standards, or both.

COMPLEXITY OF CLASSWORK

One rationale often given for the large, departmentalized junior high school system is its efficiency in providing children with higher level academic work and more varied academic courses taught by specialists in the field. It is argued that the children 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 higher-order cognitive processes. Second, it is assumed that children in junior high school are undertaking higher-order learning tasks in their departmentalized courses. Both of these assumptions are being questioned. There is growing evidence that although students may anticipate that junior high school will be more difficult and require higher level skills and understanding than elementary school, this may not reflect the actual situation. In an observational study of 11 junior high science classes, only a very small proportion of tasks required higher-level creative or expressive skills (Mitman, Mergendoller, Packer, & Marchman, 1984). Of the 31 laboratory activities that were observed, 30 were low level. Worksheets that generally required only copying of answers were the most frequent task type. Although this study did not contrast elementary and junior high school classrooms, it does provide evidence of the level of cognitive complexity required in junior high school science classrooms. Similarly, Sanford (1985), selecting well-organized teachers who were known to use a variety of tasks in their classrooms, observed six seventh- through tenth-grade science, social studies, and English classes. Two mathematics classrooms that were originally chosen for the study were not included because of the great predominance of routine tasks and use of algorithms in these classes! Even in this highly selective sample, teachers were not equally or consistently successful in engaging their students in work requiring high-level thinking.

In a study that provides information about the complexity of tasks before and after a school transition, Walberg, House, and Steele (1973)

asked a cross-sectional sample of students in grades 6 through 12 about the general kinds of activities that characterized their classrooms. Activities were classified according to Bloom's taxonomy of educational objectives. Lower-level cognitive processes such as memorizing and knowing the best answer were emphasized more in the higher grades, while higher level processes such as application, comprehension, finding consequences, and discovering solutions were more prominent in the lower grades. The transition from elementary school to high school occurred after the eighth grade; lower-level processes reached a peak in the ninth and tenth grades, after the transition.

Using classroom observations, a similar pattern was identified in the Junior High School Transition Study. Sixth graders were expected to respond to diverse instructional and interactional demands. In contrast, recitation, memorization, recall, recognition, and teacher-assigned seatwork was the norm for the seventh-grade classes (Rounds & Osaki, 1982). The authors noted in particular that the sixth-grade math curriculum better provided for the students' needs and abilities than did the seventh-grade program, which was mainly a review of the sixth-grade syllabus.

These studies suggest that actual cognitive demands may not be increasing as children move into junior high school. Thus we may, in fact, have a situation where the cognitive level actually decreases after the transition and yet many children find themselves with lower grades.

LESS-TRADITIONAL PROGRAMS

Many of the characteristics we have been discussing relate to the general distinction between open or alternative or less traditional programs and the traditional junior high school classroom. Less traditional programs often aim to provide students with more control over the learning environment, to increase cooperative learning and decrease competition and social comparison, and to replace rote memory tasks and worksheets with a more problem-centered orientation to curriculum. That there are fewer open classrooms and alternative programs at the junior high school level than at any other level provides further documentation of the environmental changes suggested so far (Lipsitz, 1977; Mergendoller, 1982).

Some educators suggest that these less traditional programs, or some aspects of these programs, are more appropriate as children approach early adolescence than for younger children (Brophy & Evertson, 1976) and that the increase in traditional styles of instruction at junior high

school may be one of the factors that undermines young adolescents' motivation and self-perceptions (Eccles et al., 1984; Lee, 1979; Mergendoller, 1982). Across the first through eighth grades, Arlin (1976) found a significant interaction effect of open or traditional educational philosophy and grade level on student academic attitudes. In general, the younger students preferred a traditional learning environment and the older children preferred a more open style. For attitudes toward teachers, learning processes, and language, the students in the lower grades had more positive attitudes in traditional than in open classrooms. By the upper grades, the attitudes of students in the open classrooms caught up to or surpassed the attitudes of students in traditional classrooms. Girls, in particular, seemed to enjoy less traditional practices as they became older. The suggestion that the impact of classroom environments on student attitudes may vary across grade levels and that self-management may be even more critical at the upper elementary grades and in junior high school is supported by a study of the effects of openness of school structure and teacher management skills on students' academic attitudes in grades one and five (Blumenfeld, Hamilton, Bossert, Wessels, & Meece, 1982). First graders' attitudes were unaffected by the type of structure. In contrast, the students with the most positive attitudes were the fifth graders in well-managed, open classrooms.

SUMMARY

The findings from these diverse studies are both surprising and disturbing. The changes in the academic environment that children experience when they move to junior high school would predict lower motivation to achieve and more negative self-perceptions at any age (Eccles et al., 1984), but we believe that these changes are particularly detrimental for this age group. As children move through early adolescence, they are becoming more knowledgeable and skillful and are developing cognitively. They are able to use critical thinking to explore open-ended questions or moral dilemmas rather than dealing primarily with rote, right answer, memorization. They develop a more differentiated ability concept, moving from equating ability and effort to perceiving ability or intellectual capacity as relatively stable (Nicholls, 1986). They typically express a desire for more control over their lives (Lee, 1979). At the same time many children are experiencing the changes associated with puberty. They become increasingly self-focused, self-conscious, and concerned about themselves in comparison to others

(Elkind & Bowen, 1979; Simmons et al., 1973). Relationships with friends and extraparental adults become especially important (Miller, 1974). Does it make sense to put these developing children in a classroom environment that is less demanding cognitively, that promotes ability evaluation and social comparison, that decreases opportunities for student self-management and choice, and that is more formal and impersonal? We suggest that there is a developmental mismatch resulting from changes in the classroom environment that are at odds with physiological, psychological, and cognitive changes in the young adolescent.

The next section of this chapter focuses on the relation between the changes in young adolescents' beliefs and behaviors and the lack of fit between children at this stage of life and the classroom environments they experience.

STAGE–ENVIRONMENT FIT

This chapter began with a discussion of the impact of the transition from elementary to middle or junior high school on early adolescent development. It has been proposed that simultaneous physiological and environmental changes at this stage of life are disruptive (Blyth et al., 1983; Nottelmann, 1982, 1987). Does that mean that a transition should be avoided or postponed? A transition to a less facilitative environment is certainly to be avoided. We have suggested that the nature of the environmental change, as well as the timing, must be considered. Our review of changes in the classroom environment in association with the transition is an attempt to understand the nature of environmental change during this period. This research leads us to believe that there may be a developmental mismatch between young adolescents and the environments they experience at this stage of life. We suggest that this mismatch may be causally related to the decline in self- and achievement-related beliefs reviewed in the first section. We also propose that a transition to a developmentally appropriate learning environment, even at this vulnerable age, could have a facilitative effect on young adolescents' beliefs and behaviors.

This hypothesis is akin to person–environment fit theory, which states that an individual's behavior is jointly determined by characteristics of the person and properties of the immediate environment. When the needs or goals of the individual are congruent with opportunities

afforded by the environment, then favorable affective, cognitive, and behavioral outcomes should result for that individual. Conversely, when a discrepancy exists between the needs of the individual and the opportunities available in that individual's environment, unfavorable outcomes should result (Hunt, 1975; Lewin, 1935; Murray, 1938). Hunt distinguishes between a contemporaneous and a developmental view of person–environment fit. He suggests that developmental change in the person is an interactive function of the person's stage of life and the environment s/he experiences. He points out the implications of this approach for educators. "Maintaining a developmental perspective becomes very important in implementing person–environment matching because a teacher should not only take account of a student's contemporaneous needs by providing whatever structure he presently requires, but also view his present need for structure on a developmental continuum along which growth toward independence and less need for structure is the long-term objective" (p.221).

Epstein (1983) stresses that research that focuses only on the match or fit of students in learning environments misses the potential importance of disequilibrium and mismatched conditions to spur development. She points out the importance of opportunities for self-direction at school during preadolescence and adolescence to compensate for the lack of opportunities in families where the child's abilities in self-direction may be changing faster than families recognize. She believes that, on the average, students gain from having decision-making opportunities at this stage of life, and although some students benefit more than others, classrooms that recognize this need help certain students without hurting others. Similarly, Parsons and Bryan (1987) have pointed out the importance of ideologically challenging environments at early adolescence for continued growth toward gender-role androgyny.

Others have taken a similar perspective, sometimes using different terms and a different framework. Petersen (1980) articulates a biopsychosocial model. Lerner (1982) endorses a life-span view of human development, stating that successful adaptation always involves appropriate coordination between our changing selves and our changing contexts, and that in early adolescence "such adaptational stresses may be most critical, due to their simultaneity and multidimensionality (Lerner, 1982, p.361). Power (1981) takes a "developmental interactionist" view, stating that changes in students' attitudes are not only a function of the characteristics of the person, but also of changes in learning environments across time and of interactions of matches and mismatches between persons and environments. Sprinthall (1985) calls

for a "cognitive developmental" approach to education and warns that the lack of growth-enhancing activities for young adolescents who, because of their stage of life, are particularly vulnerable is a very serious problem. "By providing almost no good examples of formal or informal growth enhancing activities, we apparently think that young teenagers will somehow unfold magically. What the adult forgets or refuses to accept is that if we abdicate our responsibilities for effective education, other groups . . . will fill the vacuum" (p.543). Miller (1978) discusses the developmental implications of the work of Piaget, Kohlberg, and Erikson for secondary education and the importance of stimulating higher stages of cognitive, ego, and moral development. "In my view the secondary school curriculum can often be incongruent with the developmental needs of adolescence and thus should be reexamined to take developmental considerations into account" (p.237). Mergendoller (1982) also talks about the deleterious effect the typical comprehensive secondary school can have on adolescent development, but stresses that schools also have the potential to facilitate adolescent growth.

In the rest of this chapter, we consider several questions: From the studies reviewed, what do we know about the links between these environmental changes and children's beliefs at this stage of life? What kinds of studies still need to be done to broaden our knowledge of this relationship? Is there a causal relationship? Can anything be done to improve the situation?

As we have discussed, in several studies that have looked at changes in student beliefs in conjunction with the transition, differences between the elementary and junior high school environment are inferred; they are not measured directly. Thus, age and grade are confounded; changes in belief systems might be the result of age maturation alone. It has been the magnitude of change in concert with the transition that has led these researchers to suggest the relationship. Comparing the effects of the transition at two different ages (fifth to sixth grade versus sixth to seventh grade) is an attempt to separate the age and grade effects, but these studies have not measured the environment directly and do not provide a clear-cut answer (Harter et al., 1987; Jones, 1981; Nottelmann, 1982, 1987; Petersen & Ebata, 1987; Thornburg & Jones, 1982). Comparing seventh-grade students in K–8 schools to similar-age students in junior high school, without assessing environmental differences, can lead to the conclusion that the timing of the transition may be the critical factor, particularly when the transition to high school does not produce a similar effect (Blyth et al., 1983). But since K–8 schools are smaller and typically more personal than junior high schools, these variables may be responsible for the differences rather than the timing

per se. And, as Simmons and Blyth (1987) argue, pubertal girls may be particularly sensitive to these conditions.

We also gain information from studies that follow children into different educational environments at the same age (Berndt & Hawkins, 1987), especially when there is some attempt to specify the nature of the differences. Studies that compare children moving into middle school programs versus junior high school programs are usually confounded with age; middle school programs typically begin at grade five or six; junior high schools at grade seven. One cannot assume that a middle school philosophy is necessarily being implemented or that the junior high school is a typical junior high school if the environment is not measured. Studies also suffer from the lack of variation in existing school programs for young adolescents, limiting our knowledge of the effects of environmental change on belief systems to what is common and giving us little insight into what could be (McPartland & Karweit, 1979). Innovative programs are often self-selected, which makes studies of them suspect in terms of generalizability.

Although virtually no researchers have assessed the causal link between shifts in the academic environment and children's belief systems, Eccles et al. (1984) outlined reasons to believe they are related. The changes in task structure, task complexity, grouping practices, evaluation techniques, locus of responsibility for learning, and quality of teacher–student relationships should result in an increased focus on ability assessments, increased salience of a stable conceptualization of ability, increased anxiety over one's relative ability and performance levels, and a decreased sense of control and intellectual challenge. Similarly, changes in school size, stability of friendship networks, the personalized versus bureaucratic tone of the environment, and in the students' opportunity for choice and autonomy should result in increased feelings of anonymity and victimization, increased concern or worry over one's social and academic standing, and decreased interest in, and valuing of, the academic components of school. Each of these consequences, in turn, should have a negative effect on some children's beliefs about themselves and attitudes toward school and learning, especially in students who are not highly able, or who do not perceive themselves as highly able, and students who are marginal or at risk for other reasons.

Longitudinal studies are needed that follow large groups of representative children from elementary school to junior high school in carefully measured contrasting environments. Ideally, these studies would extend at least from the last year of elementary school to the first year of high school. We are currently conducting a large-scale study assessing the

effects of systematic changes in the classroom environment across the transition from elementary school to junior high school on students' achievement-related motives, beliefs, values, and behaviors. The Transitions at Early Adolescence Study has a 2-year, four-wave, longitudinal, quasi-experimental design. The sample was drawn from 12 school districts in southeastern Michigan. School districts were selected to maximize variation on classroom environment variables such as between- and within-class ability grouping, grading practices, and task organization. Questionnaire data were gathered from over 3000 students, their math teachers, and their parents in the fall and spring of the last year of elementary school (1983–1984) and again in the fall and spring of the first year of junior high school (1984–1985). In addition, 135 pretransition classrooms and 81 posttransition classrooms were observed for 1 week during mathematics instruction in the fall of each year. Student school records, including final grades in mathematics and English, scores on two achievement tests, and information about absenteeism were collected each year.

We have described some of the preliminary findings on changes in students' attitudes and values and differences between the pre- and posttransition classroom environments in the first two sections of this chapter. In general, we have found evidence of both the declines in students' self-perceptions and the changes in the classroom environment discussed thus far in this chapter. We also have strong evidence of a decline in perceived person–environment fit across the junior high school transition. The discrepancy between students' perceptions of actual decision-making opportunities in the classroom and those they would prefer to have increases after the transition (Midgley & Feldlaufer, 1986). Most importantly, initial studies provide evidence of a causal relationship between changes in children's belief systems and changes in instructional practices during the transition from elementary school to junior high school (Reuman et al., 1987). Many more studies are underway.

If there is a causal relationship, can anything be done to change the junior high school classroom environment? Educators and psychologists have long recognized the need for a more personal, student-managed, task-focused learning environment for young adolescents. That recognition led to the establishment of the junior high school and more recently, the middle school. Unfortunately, many of these intermediate schools reflect a change in grade organization and little more; it has been difficult to translate theory into practice. As we continue to analyze the data from our study, we will be in a position to identify specific classroom practices that facilitate or retard early adolescent development. With growing interest in this age group and increasing empirical evidence to support the theory, the time may be ripe to design and implement developmentally appropriate classrooms for this age group.

We believe that movement into a more facilitative environment at early adolescence can have a positive effect. Clinical and developmental psychologists have suggested that early adolescence is a time of increased plasticity and openness to positive influences (Lerner, 1982; Lipsitz, 1981; Miller, 1974). "The foundation stones of personality development are laid in childhood, but adolescence is a second change for mature development. In the psychological and social turmoil of puberty and adolescence the plasticity of the human personality makes new perceptions of the world possible" (Miller, 1974, p.436). Likewise Felner and his colleagues point to transition points as periods of psychological disequilibrium with the potential for either psychological disturbance or growth (Felner, Farber, & Primavera, 1980).

At the same time, in order to maximize the possibility of effective change, it is important to put more research effort into understanding why the junior high school is the way it is in spite of the theory that suggests it should be otherwise. Are junior high school educators inherently different from elementary school educators? Are there differences in training and experience that influence elementary and junior high school teachers' beliefs and practices? Does the departmentalized organization automatically preclude a developmentally appropriate environment? We doubt it, but that does not mean that this organization should not be open to scrutiny to see whether the detrimental effects of departmentalization outweigh the benefits. Does the larger size of the junior high school contribute to its deficiencies? Does isolating young adolescents and their teachers create an environment in which stereotypes flourish? Is there a "zookeeper" ethic (Leet, 1974; Midgley, Feldlaufer, & Eccles, in press) in schools for young adolescents that socializes teachers to believe that young adolescents are difficult to control and to teach?

Until recently, early adolescence as a stage of life was largely ignored and understudied (Hamburg, 1974; Lipsitz, 1977). This is no longer true. Since the mid-1970s, a large number of important research studies have been undertaken focusing on this age group, and interest appears to be growing. As Sprinthall (1985) points out, however, "the major socializing agencies of our culture have basically ignored this information" (p.546). Let us hope that the future will see the marriage of theory and practice and that our young adolescents will have the benefit of developmentally appropriate classrooms.

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6

Perceptions of Classroom Processes and Student Motivation: Children's Views of Self-fulfilling Prophecies

Rhona S. Weinstein

INTRODUCTION

What makes some children love school, become excited about learning, try hard, and persist despite a difficult task? As one fourth grader described this motivational pattern: "an' um you get excited and start doin' your work . . . then you start doin' it better an' better until you get a good report card." What makes other children tune out, turn off, avoid schoolwork, and exhibit lack of interest, is illustrated by this fourth grader's description: "They just sit around. They don't do nothing. And that's why they—they say 'I can't do this' and that means that they just don't want to do it and you tell yourself that you can't. So you just give up on it and you can't do it."

According to another fourth grader, a key to understanding the roots of student motivation lies with the teacher. This student shares that "sometimes my teacher can make you feel very happy because um the teacher really wants you to learn an' stuff."

How can we account for different motivational patterns in children's approaches to school learning? What contributes to feelings of "can do" and "want to do" in children's minds? What roles can and do teachers play?