

# Children's Competence Beliefs, Achievement Values, and General Self-Esteem Change Across Elementary and Middle School

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*Two studies of how elementary school and middle school-aged children's general self-esteem, competence beliefs, and subjective task values for different activities change over time are presented. In Study 1, elementary school children completed questionnaires once a year for 3 years. Study 2 assessed how the transition to junior high school influenced children's self-beliefs. Children completed questionnaires in the fall and spring of their sixth-grade year in elementary school and the fall and spring of their seventh-grade year in junior high school. Results showed that children's self-esteem did not change during elementary school but decreased following the junior high transition. Children's competence beliefs and beliefs about the usefulness and importance of different activities generally decreased. Children's interest in the activities showed a more mixed pattern of change. Boys' and girls' beliefs and values differed in fairly gender-stereotypic ways.*

Many psychological and educational researchers have been interested in the development of the self system. These researchers have examined both general beliefs such as self-esteem and more specific beliefs that children and adolescents have about themselves. Researchers define self-esteem as the

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Portions of this article were presented by the first author as an invited address to Division E, Counseling and Human Development, at the 1993 meeting of the American Educational Research Association, Atlanta. Study 1 described in this article was supported by Grant HD17553 from the National Institutes of Child Health and Human Development. Study 2 was supported by Grant HD17229 from the National Institutes of Child Health and Human Development, Grant MH31724 from the National Institute for Mental Health, and Grant BNS85-10504 from the National Science Foundation. Thanks to Amy Arbreton, Phyllis Blumenfeld, Rena D. Harold, Carol Freedman-Doan, and Kwang Suk Yoon for their work on Study 1. Thanks to Harriet Feldlaufer, Janis Jacobs, David Klingel, Douglas Mac Iver, Carol Midgley, and David Reuman for their work on Study 2.

*Journal of Early Adolescence*, Vol. 14 No. 2, May 1994 107-138  
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individual's overall evaluation of himself or herself or how one feels about oneself (Harter, 1983, 1990; Rosenberg, 1979; Wigfield & Karpathian, 1991). Self-esteem is thought to develop during the elementary and middle school years, although researchers have debated how early children can make the kinds of general self-evaluations that are the basis of self-esteem. Harter (1983) suggested that children cannot make these kinds of self-evaluations until they are 8 or older. By contrast, Marsh, Craven, and Debus (1991) have argued that even 5-year-old children can make such judgments. Many authors (e.g., Erikson, 1963; Harter, 1990; Rosenberg, 1986; Simmons, Rosenberg, & Rosenberg, 1973) have discussed how the early adolescent years are a time of adjustment and perhaps disturbance in children's general self-esteem.

In examining more specific beliefs about the self, many researchers have focused on competence or ability beliefs and efficacy and expectancy beliefs. These beliefs refer to children's sense of how good they are at a given activity and beliefs about how well they can organize and execute different behaviors. Children's and adults' competence and efficacy beliefs relate to their achievement performance, choice of achievement tasks, amount of effort exerted, cognitive strategy use, achievement goals, and overall self-worth (see Bandura, 1986; Covington, 1984; Dweck & Elliott, 1983; Eccles et al., 1983; Eccles, Adler, & Meece, 1984; Harter, 1982; Nicholls, 1984, 1990; Pintrich & De Groot, 1990; Schunk, 1991; Stipek & Mac Iver, 1989 for detailed discussion of this work).

Some of these researchers have looked at individuals' subjective valuing of various activities along with their beliefs about competence and expectancies for success (e.g., Eccles et al., 1983; Feather, 1982, 1988; Pintrich & De Groot, 1990). Researchers interested in subjective task value argue that both competence beliefs and values are needed to understand achievement behavior and task choice. For instance, even though children may believe they are competent at a given activity and can efficaciously perform it, they may not engage in it if they do not value the activity. In their expectancy-value model of achievement choice, Eccles et al. (1983) proposed four major components of achievement values: attainment value or importance, intrinsic value, utility value or usefulness of the task, and cost (see Eccles et al., 1983; Wigfield & Eccles, 1992, for more detailed discussion of these components). Building on the Battle (1965, 1966) work, Eccles et al. (1983) defined attainment value as the importance of doing well on a given task. Intrinsic value is the enjoyment one gains from doing the task; this component is similar to notions of intrinsic motivation (see Deci & Ryan, 1985; Harter, 1981). Utility value or usefulness refers to how a task fits into an individual's future plans, for instance, taking a math class to fulfill a requirement for a science degree. Also, cost has to do with the negative aspects of doing a task,

such as how doing one task (e.g., homework) influences time available to do other tasks (e.g., calling friends).

Developmental and educational researchers have been quite interested in how children's competence beliefs change across the school years. Generally, most studies show that these beliefs become more negative over the school years (see Eccles, Midgley, & Adler, 1984; Stipek & Mac Iver, 1989, for reviews), although this conclusion is based primarily on cross-sectional data. Fewer studies of change in children's achievement values have been done, but the extant work also shows that older children tend to value academic tasks less than do younger children (e.g., Eccles et al., 1989; Eccles, Wigfield, Harold, & Blumenfeld, 1993; Wigfield, Eccles, Mac Iver, Reuman, & Midgley, 1991). In this article two major longitudinal studies in which actual *change* in children's competence beliefs, achievement values, and general self-esteem across elementary and junior high school are presented. The major focus of the article is on change in early adolescents' beliefs and values during the middle grades years; change during elementary school is described to put those findings in context. Possible explanations of the (generally) negative changes in these beliefs found in this work are explored. These explanations focus on two main things, changes in children's processing of the evaluative feedback they receive in school and contextual changes in the kinds of school and classroom environments children experience as they move through school.

### **STUDY 1: CHANGE IN CHILDREN'S GENERAL SELF-ESTEEM, COMPETENCE BELIEFS, AND ACHIEVEMENT VALUES DURING ELEMENTARY SCHOOL**

In her review of studies of self-esteem and self-concept done before 1980, Wylie (1979) concluded that there was no clear pattern of age-related change in self-esteem. More recently, Harter (1982) found no age-related difference in children's self-esteem in different samples of third- through ninth-grade children. From this fairly limited set of studies, it appears that overall children's self-esteem does not change greatly during elementary school.

As just mentioned, researchers have extensively examined age differences in children's competence beliefs, and most find that younger children have more positive competence beliefs than do older children, at least during the elementary school years (see Eccles, Midgley, & Adler, 1984; Stipek & Mac Iver, 1989 for reviews). Nicholls (1979) found that 6- and 8-year-old children ranked their reading ability relative to others in their class as very high, but 10- and 12-year-olds' rankings were both lower and more varied. Parsons and

Ruble (1977) found that 5- to 7-year-old children reported quite high expectations for their future achievements, whereas older children reported more modest expectations, particularly after experiencing some failure at the task. In cross-sectional studies of children at all the elementary grades including kindergarten, Marsh (1989) and Marsh et al. (1991) reported that older elementary school-aged children had less positive self-concepts of ability in several academic and nonacademic domains than did younger elementary school-aged children. Recently, Eccles, Wigfield, Harold, and Blumenfeld (1993) found that younger children (first and second graders) had more positive competence beliefs in the domains of math, reading, and instrumental music than did fourth-grade children. Although other recent work shows that some young children are quite vulnerable to failure (Heyman, Dweck, & Cain, 1992), the general pattern appears to be that younger children's self-reported competence beliefs are more positive than those of older children.

Fewer studies of age differences in subjective task values have been done, and most of these have involved older children and adolescents (e.g., Eccles et al., 1983; Eccles et al., 1989; Wigfield et al., 1991). Studies with younger children show that age differences in younger children's subjective task values vary across activity domains. Eccles, Wigfield, Harold, and Blumenfeld (1993) found that first and second graders valued reading and instrumental music more than did fourth graders. There were no age differences in children's valuing of math, and the fourth graders valued sports activities more than did the younger children.

Because most studies in this area have been cross-sectional, researchers have not really assessed developmental change in these constructs, particularly in work with young children. In Study 1, longitudinal change across the elementary school years in children's competence beliefs and subjective task values for math, reading, instrumental music, and sports activities, four activities that are common to childhood, was examined. Change in general self-esteem also was assessed (see Wigfield et al., 1993, for full details).

Another important purpose of this study was to examine how the gender differences in children's competence beliefs, subjective task values, and general self-esteem observed in previous work change during the elementary school years. Researchers have found that boys hold higher competence beliefs in math and sports than do girls, whereas girls often have higher competence beliefs in the English and social domains (Eccles et al., 1989; Eccles, Wigfield, Harold, & Blumenfeld, 1993; Harter, 1982; Huston, 1983; Marsh, 1989; Marsh et al., 1991; Wigfield et al., 1991). Thus the observed differences tend to mirror gender-role stereotypes. The extent of this pattern varies by age, and seems to become more pronounced as children get older. However, Eccles, Wigfield, Harold, and Blumenfeld (1993) found gender-

stereotypic sex differences in children's self-beliefs in first-grade children, and Marsh et al. (1991) did so in a study that included kindergarten children. However, longitudinal change in these sex differences has not been examined.

From previous work, it was predicted that children's self-esteem should be relatively stable across the elementary school years. Children's competence beliefs and values should decrease over time, particularly their beliefs and values regarding academic activities. Gender differences in competence beliefs and values should increase over time. In the math and sports domains, boys should have increasingly more positive competence beliefs and subjective task values as compared to girls. Girls should hold increasingly more positive competence beliefs and values than boys do in reading and instrumental music.

### **Participants and Measures**

The participants in this study are from lower-middle-class to middle-class backgrounds, and over 95% are White. The participants during Year 1 included 865 first- second- and fourth-grade children living near a major midwestern city. During Year 2, the sample consisted of approximately 1,000 children in second, third, and fifth grades; the sample was larger in Year 2 because the original sample was augmented with children from another school in one of the districts. During Year 3, the sample consisted of 920 children in Grades 3, 4, and 6. Thus the combined cross-sequential sample included children from Grade 1 through Grade 6 and includes three overlapping cohorts of children. The longitudinal sample used in the analyses presented here includes approximately 615 children (the *N* varies slightly across measures because of small variations in missing data), representing 71% of the original sample. There are approximately 200 children in each cohort.

In three consecutive springs children completed questionnaires tapping their competence beliefs and subjective task values about mathematics, reading, instrumental music, and sports (see Eccles, Wigfield, Harold, & Blumenfeld, 1993 for more detailed description). The questions about subjective task values included items assessing the interest, importance, and usefulness aspects of values defined by Eccles et al. (1983). These items were modified from earlier questionnaire items developed by Eccles and her colleagues to assess children's and adolescents' beliefs about mathematics and English. The items have excellent psychometric properties (see Eccles, 1984; Eccles et al., 1983; Eccles, Adler, & Meece, 1984; Eccles & Wigfield, in press; Parsons, Adler, & Kaczala, 1982). The specific items used can be found in Eccles, Wigfield, Harold, and Blumenfeld (1993) and Wigfield et al.

(1993). Based on extensive factor analytic work with these items, scales assessing children's competence beliefs, interest, and usefulness/importance in each of the domains were created (see Eccles, Wigfield, Harold, & Blumenfeld, 1993; Wigfield et al., 1993).

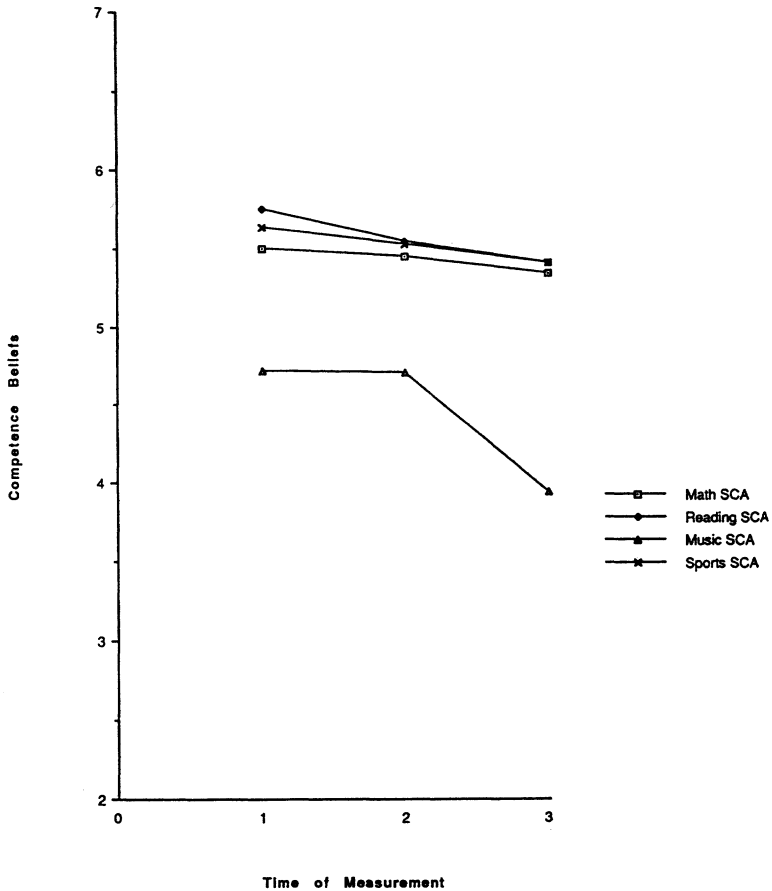
Children's general self-esteem was assessed using the Harter (1982) 7-item General Self-Worth scale from her Perceived Competence Scale for Children. The complete 7-item scale was only given during the last 2 years of the study, and so the analyses of self-esteem include only two waves of data.

Each scale (general self-esteem, perceived competence beliefs, perceived usefulness/importance, and perceived interest) was analyzed in a separate repeated measures multivariate analysis of variance (MANOVA). The MANOVA on the self-esteem scales included one within-subjects factor, time of measurement (two levels) and two between-subjects factors, cohort (three levels) and gender (two levels). Cohort was determined by the child's initial grade level. The MANOVAs assessing competence beliefs and subjective task values had two within-subjects factors, time of measurement (three levels) and activity domain (four levels), and two between-subjects factors as previously stated. The major results presented in this article concern general change in children's beliefs, to provide overall context for how children's beliefs change through the middle school years. Only effects significant at the .01 level of probability or above are presented, and to simplify the presentation, the various *F* statistics are not presented (see Wigfield et al., 1993 for these statistics).

## Results and Implications

*Self-esteem.* Children's self-esteem did not differ across cohort or gender groups and did not change over time. In her cross-sectional study of children's general self-esteem and competence beliefs, Harter (1982) also reported no gender or grade-level differences in children's general self-esteem across third through ninth grades. Thus children's self-esteem appears to be relatively stable and relatively high during the elementary school years; the average self-esteem score for children was 3.16 (4 is the highest score).

*Competence beliefs.* Children's competence beliefs in each activity domain decreased over time (see Figure 1 for the means). The largest decreases in competence beliefs occurred in instrumental music, and, in fact, children have much lower competence beliefs in instrumental music than in any other domain. The smallest decreases occurred in math. These results are quite



**Figure 1: Change in Children's Competence Beliefs During Elementary School**

similar to those from earlier cross-sectional research with the exception of the Harter (1982) study of children's perceived competence in the academic, social, and physical skill domains. Harter reported no age-related differences in third- through ninth-grade children's competence perceptions in these domains. The Harter scales are more general than either the scales used in the present study or those of Marsh (1989), which could be one reason why she did not obtain age differences. More general scales may obscure differences in particular subscales, such as math and reading in the academic area.

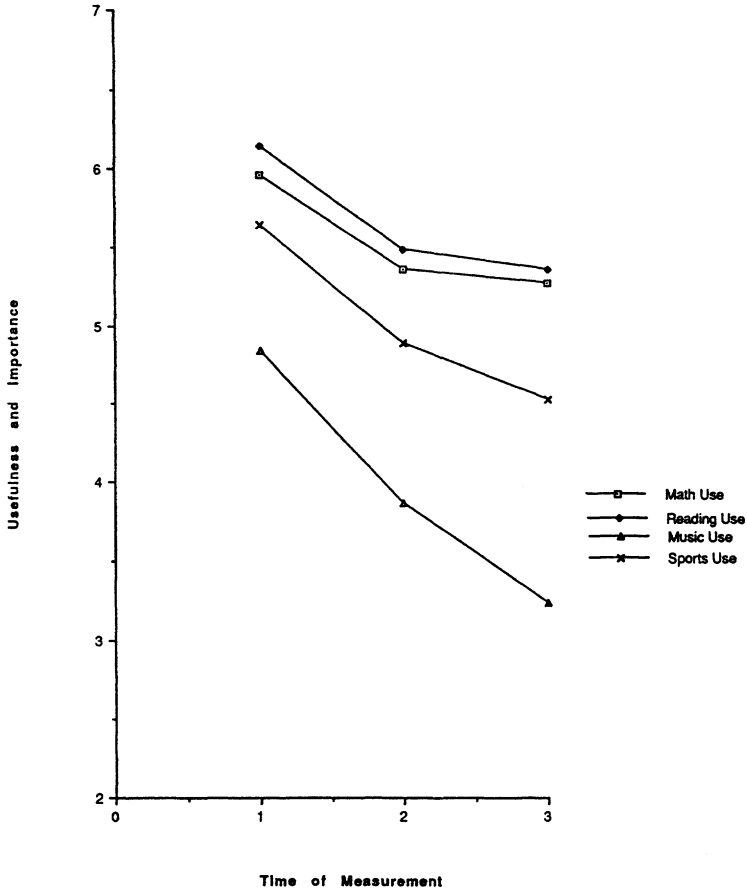
It is interesting that the decreases in children's competence beliefs in the different domains do not appear to have an impact on children's overall self-esteem; there was no decrease in children's self-esteem scores. This finding suggests that children's self-esteem is determined by many different factors (see Marsh & Shavelson, 1985) with competence beliefs (even in central activity domains) only one determining factor. Harter (1985, 1990), renewing the James (1890/1963) hypothesis about the relationship of competence beliefs (successes) and values (pretensions) to self-esteem, has discussed how discrepancies between one's competence beliefs for an activity and the importance attached to that activity can negatively influence self-esteem, especially when the importance beliefs are higher and competence beliefs lower. She has shown that when children think an activity is important but do not believe they are competent at the activity, they tend to have lower self-esteem.

An important broader implication of these results is that the nature of children's understanding of what competence is may differ across activity domain. Most studies of children's notions of ability and intelligence (e.g., see Nicholls, 1990; Dweck & Elliott, 1983) have examined only children's sense of ability and intelligence as general constructs. Given that children's competence beliefs in different domains show different patterns of change, researchers should look at how children view competence or ability in specific activity areas.

*Usefulness and importance.* Like children's competence beliefs, children's ratings of the usefulness and importance of the different activities also decreased over time in each of the activity domains (see Figure 2 for the means). Although children's beliefs about the usefulness and importance of the activities decreased, their relative ordering of the activities' usefulness and importance was very consistent at each time of measurement. Children rated reading and math as most useful and important, followed by sports, and they rated instrumental music much less useful and important. The differences between instrumental music and the other activities became more pronounced over time. As mentioned earlier, instrumental music is a relatively specialized activity, and so many children likely regard it as not very useful and important.

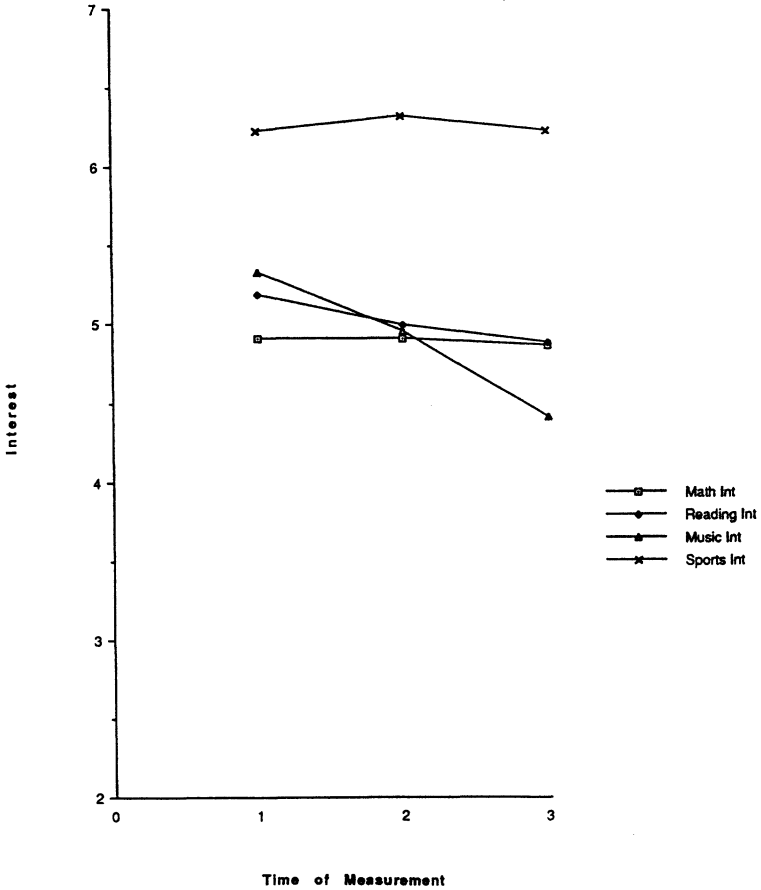
*Perceived interest.* In contrast to their competence beliefs and ratings of the usefulness and importance of the activities, children's perceived interest did not decrease in all domains. Children's interest in instrumental music and reading decreased over time, but their interest in math and sports did not (see





**Figure 2: Change in Children's Beliefs About the Usefulness and Importance of Different Activities During Elementary School**

Figure 3 for the means). Another way children's interest in the activities differed from their ratings of the activities' usefulness and importance is in their rank orderings. At all times of measurement, children's interest in sports was much higher than their interest in any of the other activities. It appears that academic activities do not hold elementary school-aged children's interest the way that sports does, a finding that is not particularly surprising! In contrast, children rated the academic subject areas of reading and math as



**Figure 3: Change in Children's Interest in Different Activities During Elementary School**

most useful and important. These results demonstrate the importance of assessing specific aspects of children's subjective task values about different activities (see also Eccles & Wigfield, in press).

Children's continuing interest in sports despite the drop in their competence beliefs and ratings of its usefulness and importance may mean that during elementary school the fun of sports activities overrides the decline in their sense of how good they are, at least until the end of elementary school.

Interest in math also does not decrease across elementary school, although overall children do not rate math as very interesting in comparison to the other activities they were asked about, and math interest does decrease in sixth grade.

In comparing these results for interest to those from the Harter (1981) study of intrinsic versus extrinsic motivation for school, Harter found that several of her dimensions of intrinsic motivation, including curiosity (which is most similar to the interest construct discussed here), preference for challenge, and independent mastery, showed strong age-related differences across third through ninth grade with the younger children being more intrinsically motivated. In this study, children's interest in some activities decreased, but their interest in other activities did not; thus although the Harter scale shows general declines in children's intrinsic motivation, these results suggest those declines may occur only in some activity areas but not others.

*Gender differences.* Boys and girls did not differ in their general self-esteem. This result is similar to the results of the Harter (1982) cross-sectional study of self-esteem in elementary school and is another indication that many children have reasonably high self-esteem during elementary school. As will be seen later, by junior high school gender differences in self-esteem favoring boys appear (Eccles et al., 1989; Wigfield et al., 1991).

Boys' and girls' competence beliefs and valuing of the activities differed in primarily gender stereotypic ways (see Table 1 for the means). Compared to girls' beliefs, boys' competence beliefs were higher for math and sports, whereas girls' competence beliefs were higher than the boys' beliefs for reading and instrumental music. This pattern of gender differences in elementary school-aged children's competence beliefs is very similar to the pattern found by Eccles, Wigfield, Harold, and Blumenfeld (1993) and Marsh (1989) in their cross-sectional studies. The gender differences in children's ratings of the usefulness and importance of the activities and their interest in the activities were like those in their competence beliefs with one notable exception. Boys and girls did not differ in their ratings of the usefulness and importance of math or interest in math. Overall, these results indicate that gender-role stereotypic patterns of competence beliefs and subjective task values emerge quite early and are present across the elementary and junior high school years.

It is encouraging that males and females value math similarly through elementary school, given the importance math has in many careers. However, stereotypical gender differences in the subjective valuing of math appear in

**TABLE 1: Elementary School-Aged Boys' and Girls' Competence Beliefs and Subjective Task Values Averaged Over Time**

	<i>Girls</i>			<i>Boys</i>		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD
<b>Competence beliefs</b>						
Mathematics	315	5.23	.76	290	5.64	.82
Reading	315	5.66	.85	290	5.43	.90
Music	315	4.74	1.02	290	4.15	1.31
Sports	315	5.04	.94	290	6.04	.93
<b>Usefulness and importance</b>						
Mathematics	324	5.53	.68	287	5.53	.87
Reading	324	5.75	.71	287	5.57	.87
Music	324	4.28	1.27	287	3.66	1.47
Sports	324	4.66	1.15	287	5.43	1.12
<b>Interest</b>						
Mathematics	310	4.84	1.44	276	4.94	1.45
Reading	310	5.42	1.29	276	4.57	1.51
Music	310	5.41	1.32	276	4.33	1.62
Sports	310	5.94	1.22	276	6.59	.82

some adolescent samples (Eccles et al., 1983; Wigfield, 1984). In addition, the gender differences in math competence beliefs are discouraging, particularly because they emerge so early during the elementary school years—first grade (see also Eccles, Wigfield, Harold, & Blumenfeld, 1993). These gender differences in competence beliefs emerge despite the fact that in this sample teachers rate girls and boys as equally able in math (see Harold et al., 1989). Girls seem to doubt their ability in math during elementary school even though they outperform boys in math during elementary school and junior high school (Linn & Hyde, 1989). Cultural stereotypes about females and math continue to have a strong influence on girls' math competence beliefs.

Although boys reported greater interest in sports than did girls relative to the other activities *both* boys and girls reported being most interested in sports; sports activities have great appeal for children of these ages. In contrast, girls were much more interested in instrumental music than were boys and had higher instrumental music competence beliefs. However, males are much more likely than females to have careers as musicians in rock bands, jazz groups, and orchestras, despite these early gender differences in instrumental music competence beliefs and values favoring girls (see Eccles, Wigfield, Harold, & Blumenfeld, 1993 for further discussion).

Girls also had higher competence beliefs in reading than did boys and valued reading more. Much has been written about the gender differences in math competence beliefs favoring boys. Perhaps of equal concern is boys' more negative ability beliefs and values about reading. Reading difficulty during the early elementary grades is one of the strongest predictors of eventual school failure (Lloyd, 1978; Madden, Slavin, Karweit, Dolan, & Wasik, 1993). Boys who do poorly in reading in the early grades, believe they are not very good at reading, and devalue it as an activity could be more at risk for later school failure.

Finally, the lack of change in gender differences across cohort or over time is noteworthy. It was expected that early in elementary school boys and girls would have similarly positive competence beliefs and valuing for most activities and that gender differences would emerge as they had more experience with different activities in elementary school. Instead, the gender differences were present in the youngest children in this sample (first graders) and changed little over time. Marsh (1989) also reported few gender-by-age interactions through elementary and middle grades school in children's self-concepts in different domains. These findings are another indication of the continuing strong role of sex-role stereotypes on observed gender differences. Even before they have much experience with different activities in the more formal evaluative setting of school, boys and girls already have different competence beliefs for and valuing of many of those activities.

To conclude, results of this study showed how children's general self-esteem, competence beliefs, and subjective task values actually change across the elementary school years. These findings illustrate the importance of doing longitudinal work in this area, and assessing children's beliefs about the specific activities that they do. What happens after elementary school to the kinds of self-beliefs assessed in Study 1? That topic is considered next.

## **STUDY 2: CHANGE IN CHILDREN'S ACHIEVEMENT-RELATED BELIEFS AND GENERAL SELF-ESTEEM ACROSS THE TRANSITION TO MIDDLE GRADES SCHOOL**

Research on the developmental characteristics of early adolescents is providing important new information about the changes and challenges of that developmental period (see Feldman & Elliott, 1990, for a review of much of this work). During this time period, early adolescents face many important changes, including the social and biological changes associated with puberty. Traditionally these changes were thought to make early adolescence a very

difficult time period (e.g., Blos, 1979). Many researchers now believe that the characterization of this time period as one of storm and stress is a great overstatement (i.e., Brooks-Gunn & Reiter, 1990; Buchanan, Eccles, & Becker, 1992). This is not to deny the importance of the biological changes that do occur and their potential impact on psychological processes, however. Most early adolescents also make an important school transition at this time, moving from elementary to middle school or junior high school. Different theorists (e.g., Eccles, Midgley, & Adler, 1984; Hill & Lynch, 1983; Rosenberg, 1986; Simmons & Blyth, 1987) have proposed that these school environmental changes can have a significant impact on students' self-beliefs.

Eccles, Midgley, and Adler (1984) reviewed evidence showing that many early adolescents become more negative about school and themselves following the transition to junior high. They become more anxious about school (Harter, Whitesell, & Kowalski, 1992) and have lower academic intrinsic motivation (Harter, 1981; Harter et al., 1992). Many studies also show that early adolescents have lower competence beliefs than do their younger peers (Eccles et al., 1983; Eccles, Adler, & Meece, 1984; Marsh, 1989), although this pattern is not always found (Harter, 1982). Some studies suggest that early adolescents' beliefs about mathematics become particularly negative (Brush, 1980; Eccles, Adler, & Meece, 1984). In addition to these changes in specific self-beliefs, Simmons et al. (1973) have shown that following the transition to junior high school, early adolescents' general self-esteem is lower and less stable and their self-consciousness is higher.

Eccles and her colleagues (Eccles, Midgley, & Adler, 1984; Eccles & Midgley, 1989; Eccles, Wigfield, Midgley, et al., 1993) and Simmons and her colleagues (Blyth, Simmons, & Carlton-Ford, 1983; Simmons & Blyth, 1987; Simmons, Blyth, Van Cleave, & Bush, 1979; Simmons et al., 1973) have postulated that these changes in early adolescents' attitudes and beliefs are due in part to changes in the school environment that occur following the transition to junior high. These changes are discussed in more detail later. The biological and social changes associated with puberty also may be responsible for some of these changes in early adolescents' self-beliefs.

One outcome of the biological and social changes is that gender-role-appropriate activities may become more important to early adolescents at this time as they try to conform more to gender-role stereotypes for their behavior (Eccles, 1987; Hill & Lynch, 1983). Hill and Lynch (1983) labeled this phenomenon gender-role intensification. The intensification of pressure to conform to gender role appropriate activities may lead early adolescents to have less positive beliefs and be less involved in activities that they see as less appropriate to their own gender.

Although children's self-beliefs do seem to become more negative at early adolescence, there has been some debate about the magnitude of these negative changes, especially in the case of students' general self-esteem. Longitudinal studies of children's self-esteem during adolescence show that it actually increases across adolescence (Dusek & Flaherty, 1981; O'Malley & Bachman, 1983), even across the transition to junior high school (Nottelmann, 1987). Although the Simmons et al. (1973) cross-sectional work indicates that children's self-esteem decreases at early adolescence, their longitudinal work (e.g., Blyth et al., 1983; Simmons et al., 1979) shows that for most children, self-esteem scores increase across adolescence. In their work, the only group to show consistent evidence of decline in self-esteem is White girls who make the transition to junior high school.

Study 2 examined change across the junior high school transition in early adolescents' general self-esteem as well as changes in their competence beliefs and subjective valuing for mathematics, English, social activities, and sports activities. These variables were assessed at two time points (fall, spring) before students made the transition to junior high and two time points (fall, spring) after the transition. This design allows for clarification of some of the conflicting findings in previous work concerning change in self-esteem and competence beliefs. These conflicting findings could be due to different designs (cross-sectional vs. longitudinal), different times of measurement, or different levels of specificity of measurement. By examining change in both general self-esteem and beliefs about specific activities, Study 2 provides a more complete picture of the development of early adolescents' self-beliefs (see Eccles et al., 1989; Wigfield et al., 1991, for full details).

It was predicted that early adolescents' self-esteem should decrease immediately following the transition to junior high as students adjust to the school change and develop new social networks and roles. As this adjustment proceeds, early adolescents' self-esteem should rebound so that the decrease should disappear by the spring of the seventh-grade year. In contrast, early adolescents' competence beliefs and valuing of different academic activities should show only moderate changes immediately following the transition to junior high school. These beliefs should become more negative across the seventh-grade year as early adolescents have more experience with the different kinds of teaching practices characteristic of seventh-grade instruction.

Because early adolescents' social networks are disrupted as they move to middle grades school (Berndt, 1987), the changes in early adolescents' social competence beliefs should be more similar to the predicted changes in self-esteem. These beliefs should decline immediately after the transition and increase across seventh grade. In contrast, early adolescents' liking of social

activities should increase during seventh grade due to the salience of peer acceptance in early adolescence (Berndt, 1987). Changes in early adolescents' competence beliefs and valuing of the sports domain are more difficult to predict. Early adolescents' ability beliefs in this area may decrease following the junior high transition because of the larger social comparison group they encounter in junior high. However, because sports activities often take place out of the school context, this transition may have little effect on students' sports competence beliefs.

Study 2 also examined how early adolescent boys' and girls' ability beliefs, subjective values, and self-esteem differed. Boys should have more positive math and sports competence beliefs than should girls; in contrast, girls should have more positive English and social competence beliefs than should boys (Eccles et al., 1983; Eccles, Adler, & Meece, 1984; Eccles et al., 1989; Harter, 1982; Marsh, 1989). Boys also should have higher general self-esteem than should girls. In addition, the gender differences should increase over the four times of measurement as a result of increasing pressure boys and girls face to conform to gender-role-appropriate activities.

### **Participants and Measures**

Students from 12 school districts located in low- to middle-income communities participated. Approximately 1,850 students who made the transition from sixth grade in elementary school to seventh grade in junior high school from these districts completed questionnaires at all four waves: twice in the sixth grade and twice in the seventh grade. The students were White (95%) and from lower-middle-class to middle-class backgrounds. The students were in 143 classrooms in Year 1 and were followed during Year 2 in 171 junior high school mathematics classrooms.

Students completed questionnaires measuring their beliefs, attitudes, and values regarding mathematics, English, sports, and social activities, as well as many other constructs such as self-esteem. In this discussion, the focus is on early adolescents' self-esteem, assessed using five items from the Harter (1982) General Self-Worth Scale; early adolescents' competence beliefs for mathematics, English, sports, and social interactions; and their subjective valuing of the different activities (their interest in the activities and ratings of the activities' importance). The items were identical to those used in Study 1. As in the previous study, repeated measures MANOVAs were used to analyze the results; again for convenience significant differences at the .01 level are summarized without presenting the *F* statistics (see Wigfield et al., 1991, for the statistics).



## Results and Implications

*Self-esteem.* Children's self-esteem decreased significantly across the transition. The means for the four waves were: Wave 1  $\bar{X} = 14.32$ ,  $SD = 3.23$ ; Wave 2  $\bar{X} = 14.44$ ,  $SD = 3.18$ ; Wave 3  $\bar{X} = 13.96$ ,  $SD = 3.09$ ; and Wave 4  $\bar{X} = 14.20$ ,  $SD = 3.15$ . As predicted, early adolescents' self-esteem was lowest immediately following the transition to junior high and increased during the seventh-grade year. Early adolescents' self-esteem was significantly lower at Wave 3 than at all other waves. Also, Wave 2 self-esteem was significantly higher than Wave 4 self-esteem, indicating that self-esteem remains lower in the spring of seventh grade than in the spring of the sixth-grade year.

The decline observed in self-esteem following the junior high transition probably reflects early adolescents' reactions to their new school environments. In sixth grade, the students are the oldest students in their schools and so are likely to have the most status. They know their school routines well and the school environment is familiar to them. Thus their self-esteem is quite high during the spring of their sixth-grade year. In seventh grade, the students are the youngest children in their school and are adjusting to their new school environment. This adjustment period may produce the temporary drop in their self-esteem in the fall of the seventh-grade year. These findings complement and extend those from previous studies. These longitudinal data confirm the cross-sectional findings (Simmons et al., 1979; Simmons et al., 1973) that children's self-esteem is lower immediately after the transition to junior high. However, as mentioned earlier and found by others (Nottelmann, 1987), the students' self-esteem increased during the seventh-grade year; thus the disruption in self-esteem was not long lasting. As students go through high school, their self-esteem should increase further, as found by O'Malley and Bachman (1983), and Dusek and Flaherty (1981).

*Competence beliefs.* As predicted, early adolescents' mathematics, English, social, and sports competence beliefs became more negative immediately following the junior high transition (see Figure 4 for the means). Their social (and to a lesser extent) sports competence beliefs rebounded over the seventh-grade year. The marked decline in the adolescents' social competence beliefs between Waves 2 and 3 illustrates the impact of the transition to junior high on these beliefs. This decline probably occurs because the transition disrupts early adolescents' social networks (Berndt, 1987), at a time when social activities are becoming increasingly important (see Hartup, 1983). As these networks are reestablished over the course of the school year, the adolescents' confidence appears to rise. However, their social competence

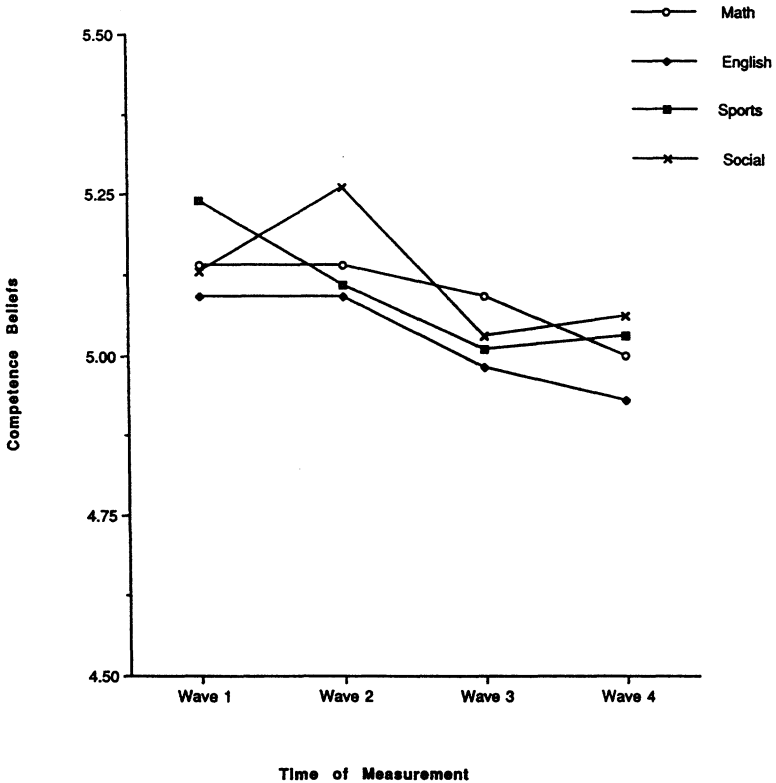


Figure 4: Change in Children's Competence Beliefs During Junior High School

beliefs did not return to the level of the spring of the sixth grade. This finding suggests that some early adolescents still lack confidence in their social abilities. Work by Simmons and her colleagues (e.g., Simmons & Blyth, 1987; Simmons et al., 1973) have found that some early adolescents never regain their pretransition levels of self-confidence.

Similar to cross-sectional results reported by Marsh (1989), early adolescents' beliefs about their physical competence are lower in seventh than in sixth grade. Because this decline in sports competence beliefs begins at Wave 2 prior to the transition to junior high, changes in instructional practices in physical education courses following the transition to junior high are not the most likely explanation for the observed changes. In the communities represented in this study, sports teams become more selective during this time

period. Perhaps early adolescents feel less competent at sports because of these increases in the competitiveness of sports occurring at this time (see Duda, Olson, & Templin, 1991).

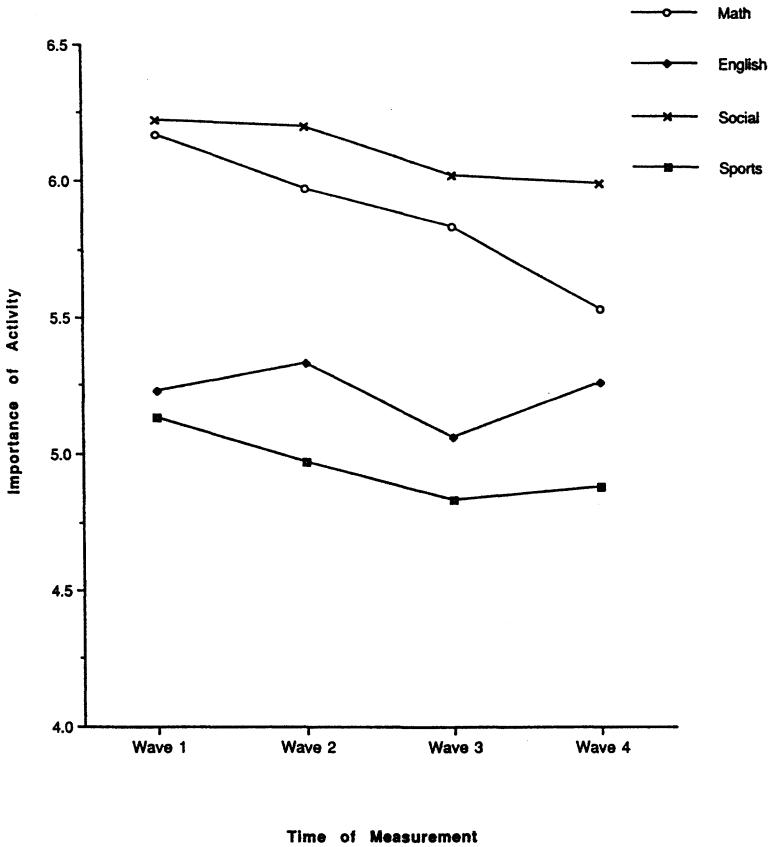
Early adolescents' math and English competence beliefs declined between Waves 2 and 3 and continue to decline throughout the seventh-grade year, thus showing the predicted transition effects. These results thus confirm the results of previous cross-sectional studies (e.g., Eccles et al., 1983; Marsh, 1989; Wigfield, 1984) showing a decrease in early adolescents' competence beliefs in these areas during the early adolescent period.

*Importance.* Children's ratings of the importance of the activities also changed over time (see Figure 5 for the means). Math importance decreased over time with the largest change coming between fall and spring of seventh grade, indicating a strong transition effect. The importance of English increased within each school year and decreased sharply between spring of sixth grade and fall of seventh grade. Early adolescents' rating of the importance of social and sports activities decreased over time. As also can be seen in Figure 5, early adolescents' sense of the relative importance of the different activities was identical at each wave. They rated social activities most important, followed by math, then English, and finally sports activities.

*Interest.* Early adolescents liked social activities and sports activities more than math and English and reported liking English the least (see Figure 6 for the means). They also reported liking social activities more than sports activities at each wave. Regarding change in children's interest in these activities, early adolescents' interest in mathematics and sports activities declined steadily. For the social domain, early adolescents reported liking social activities slightly more in the spring of each year than in the fall, particularly in sixth grade, although the differences are small. Their interest in social activities was highest during spring of the sixth-grade year. Early adolescents' liking of English also was more positive in the spring than the fall of each year. These results also show that they liked English significantly more at Wave 2 than at any other wave.

Thus, similar to the elementary school years study, junior high school students report much more interest in nonacademic activities than in academic activities. Indeed, the differences are more pronounced in this study than in Study 1. Clearly, keeping early adolescents interested in school activities is a challenge.

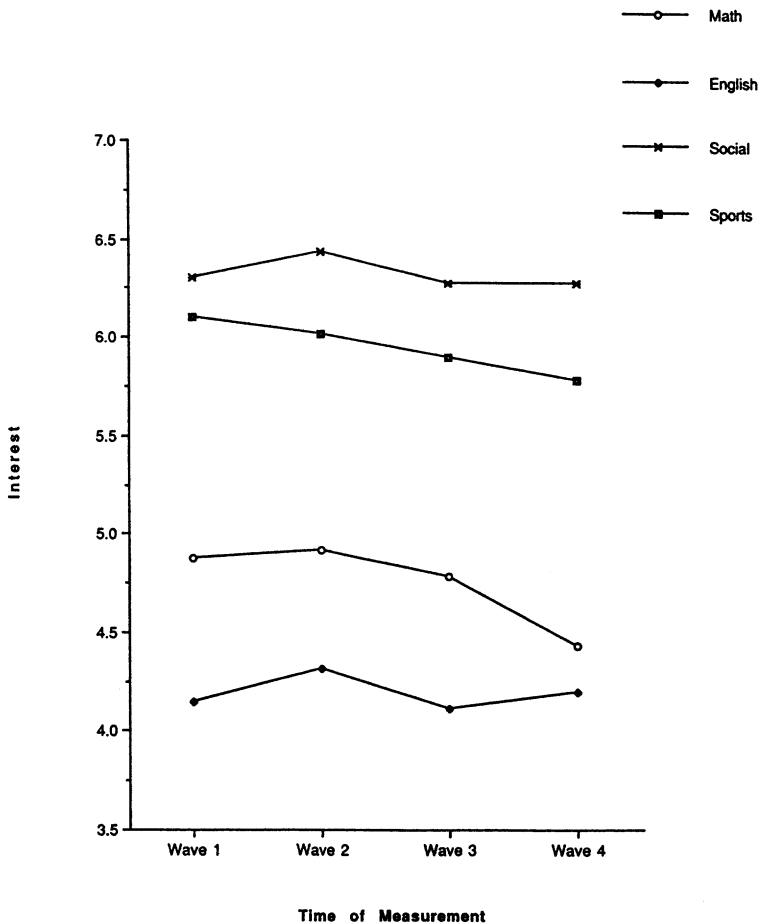
Contrasting the results for importance ratings and perceived interest, students rated social activities as both most important and most interesting to them. However, they rated sports activities as least important but second



**Figure 5: Change in Children's Beliefs About the Importance of Different Activities During Junior High School**

most interesting and math second most important and second least interesting. Early adolescents thus appear to value these activities differentially, further illustrating the necessity of measuring different aspects of children's valuing of various tasks (see Eccles & Wigfield, in press).

*Gender differences.* Boys reported higher self-esteem than did girls at all four waves. Similar findings have been reported by other researchers (e.g., Blyth et al., 1983; Nottelmann, 1987; Simmons et al., 1979). It is unclear whether this finding reflects actual gender differences in self-esteem or



**Figure 6: Change in Children's Interest in Different Activities During Junior High School**

response bias because boys tend to be more positive than girls in their responses to self-report measures, and girls may be more modest in their self-reports (Eccles, Adler, & Meece, 1984). These differences contrast with the findings for elementary school children, where there were no differences in boys' and girls' self-esteem.

Rosenberg (1986) suggested that girls are more affected by the physical changes occurring at puberty and thus their self-concepts are more volatile

**TABLE 2: Early Adolescent Girls' and Boys' Competence Beliefs and Subjective Task Values Averaged Over Time**

	<i>Girls</i>			<i>Boys</i>		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD
<b>Competence beliefs</b>						
Mathematics	957	4.99	.95	818	5.21	1.01
English	957	5.16	.89	818	4.86	1.03
Social	957	5.16	.96	818	5.07	1.02
Sports	957	4.71	1.21	818	5.53	1.16
<b>Interest</b>						
Mathematics	1,013	4.73	1.48	842	4.78	1.50
English	1,013	4.53	1.44	842	3.79	1.48
Social	1,013	6.48	.68	842	6.14	.87
Sports	1,013	5.65	1.45	842	6.31	1.24
<b>Importance</b>						
Mathematics	994	5.92	.95	857	5.83	1.02
English	994	5.41	1.24	857	5.01	1.23
Social	994	6.25	.83	857	5.94	.93
Sports	994	4.57	1.53	857	5.39	1.59

than those of boys during this time period. Although there were gender differences in self-esteem, they were consistent over time, and so these results do not support this suggestion. These findings did not replicate the pattern of gender differences reported by Simmons and Blyth (1987), who found that the junior high transition had a negative effect only on girls' self-esteem. Whether this difference reflects sample differences, measure differences, or some more substantive differences remains unclear.

Many gender differences in beliefs about the different activities were observed; Table 2 presents the means. Boys have higher competence beliefs for sports and math than do girls, and girls have higher competence beliefs for English. These gender differences in competence beliefs confirm and extend previous cross-sectional work (e.g., Eccles et al., 1983; Marsh, 1989; Wigfield, 1984). For importance, boys rated sports as a more important activity than did girls whereas girls did so for English and social activities. The gender differences in perceived interest in English, social activities, and sports activities followed prediction: As predicted, boys report liking sports more than girls do, whereas girls report liking social interactions and English more than boys. There were no gender differences in either liking of math or ratings of its importance.

As in the elementary school study, boys and girls liked math similarly and saw it as equally important. However, as discussed earlier, the fact that girls have less positive views of their ability in math could be problematic. If these trends continue into high school as previous studies suggest (e.g., Eccles et al., 1983; Wigfield, 1984), the girls should be less likely than the boys to take optional advanced-level math courses. This potential problem could be further exacerbated by the fact that girls report liking social activities so much more than math; social activities also could interfere with continued participation in mathematics. In addition, within each gender the ordering of the boys' and girls' perceived interest match the gender-role stereotyping of the domains; boys like sports more than social activities and math more than English, whereas girls like social activities more than sports. The one exception to this pattern is girls and math: Girls and boys report liking math equally well, and girls like math slightly more than they like English. Does this finding go against the prediction that early adolescents will like gender-role-appropriate activities better than gender-role-inappropriate activities? Not if girls in this sample view math as just as appropriate for females as for males. Jacobs (1987) found that girls in this sample do stereotype sports as a male domain, social as a female domain, and math as gender neutral. Earlier work (Stein & Smithells, 1969) also found that girls at this age do not view math as a male activity. Finally, as in Study 1, the gender differences in competence beliefs and subjective values did not increase over the four waves of the study. However, based on previous studies (Eccles et al., 1983; Stein & Smithells, 1969; Wigfield, 1984), it seems likely that the gender differences will increase later in adolescence.

### **EXPLAINING THE CHANGES IN CHILDREN'S SELF-BELIEFS: ORGANISMIC AND CONTEXTUAL FACTORS**

What explains the declines in children's and early adolescents' competence beliefs and valuing of these different activities? Two main explanations have been given, particularly for the changes in beliefs about the academic activities (see Eccles & Midgley, 1989; Stipek & Mac Iver, 1989; Wigfield & Eccles, 1992). One explanation involves organismic factors such as how children's processing of evaluative feedback changes over time. Younger children appear to be overly optimistic in their competence beliefs and older children more realistic. For instance, Nicholls (1979) reported that 6-year-olds' beliefs about their reading ability did not correlate with their actual reading achievement, whereas by 12 years of age, the correlations between

children's competence beliefs and reading performance were .70 (see also Stipek, 1984). It is likely that older children's competence beliefs are more realistic because they have had more experience with evaluative feedback from different achievement tasks, because they can integrate information better over time, and because they are better able to use social comparison information to obtain a more accurate sense of their relative standing (see Parsons & Ruble, 1977; Ruble, 1983). Moreover, as children get older, many of them begin to view ability as a rather stable entity that cannot be changed much (see Dweck & Elliott, 1983; Nicholls, 1984, 1990). However, it does not appear that all young children are overly optimistic; in Study 1 the standard deviations are quite similar for younger and older children in the different cohorts, suggesting that there is a similar dispersion of scores for these different age groups. This finding suggests that even some young children have less positive competence beliefs in the different domains. As mentioned earlier, Heyman et al. (1992) also have found that some very young children appear to already be developing negative achievement-related beliefs and behaviors.

Along with these organismic factors, contextual factors like the kinds of school environments children encounter can be a major influence on children's competence beliefs for and valuing of different academic tasks. Eccles and Midgley (1989) and Eccles, Wigfield, Midgley, et al. (1993) have discussed how aspects of traditional middle school classroom and school environments can deflate children's competence beliefs for different academic tasks. Traditional middle grades schools are typically larger, less personal, and more formal than elementary schools. Middle grades teachers are often subject matter specialists, and they usually instruct many more students than do elementary teachers in self-contained classrooms. Thus they are less likely to come to know students well, to feel that students are trustworthy, and to grant them autonomy (see Brophy & Evertson, 1978; Eccles & Midgley, 1989, for more detailed discussion of these changes). Indeed, middle grades teachers may feel that it is difficult to affect the achievement of many of their students, especially because they see them for a relatively small proportion of the school day (Midgley, Feldlaufer, & Eccles, 1989).

Concerning classroom-level differences between traditional middle grades schools and elementary schools, traditional middle grades schools' classrooms are characterized by a greater emphasis on teacher control and discipline (e.g., Brophy & Evertson, 1978; Moos, 1979), a less personal and positive teacher/student relationship (Midgley, Feldlaufer, & Eccles, 1988; Moore, 1983), and fewer opportunities for student decision making, choice, and self-management (Lee, 1979). The shift to traditional middle grades



school often involves an increase in practices such as whole class task organization (Rounds & Osaki, 1982) and public evaluation of the correctness of work (Harter et al., 1992), each of which may encourage the use of social comparison and ability self-assessment. Between-classroom ability grouping practices also increase (Oakes, 1981, 1985). Once students have been assigned to classrooms on the basis of their ability, mobility to another ability level is infrequent (Oakes, 1981, 1985). Also, teachers often believe they have to be more serious about instruction and performance evaluation (Blyth, Simmons, & Bush, 1978; Kavrell & Petersen, 1984; Schulenberg, Asp, & Petersen, 1984). Many of these changes may begin to occur at the end of elementary school as teachers begin to get children ready for middle grades school.

These school and classroom environmental changes can have a particularly strong impact on early adolescents' self-beliefs because of the developmental characteristics associated with this period of life. Early adolescents have an increasing desire for autonomy, particularly autonomy from adults such as parents and teachers (Steinberg, 1990). They become increasingly oriented to their peers and become very concerned about social acceptance and developing gender relationships (Brown, 1990; Katchadourian, 1990). Many early adolescents are resolving identity issues (Erikson, 1963), and as a result of this process, they often become increasingly self-focused and self-conscious (Simmons & Blyth, 1987). Certain of their abilities increase as well, in particular their capability to engage in more abstract cognitive activities (Keating, 1990).

How do these changes relate to the changes in school and classroom environments just discussed? Simmons and Blyth (1987) argued that adolescents need a safe as well as an intellectually challenging environment to meet these developmental tasks. Many of the practices in traditional middle grades schools provide neither of these things. These practices can result in a deterioration in academic motivation and performance for these early adolescents. More specifically, the environmental changes often associated with transition to traditional middle grades schools emphasize competition, social comparison, and ability self-assessment at a time of early adolescents' heightened self-focus. These changes decrease decision making and choice at a time when early adolescents desire more autonomy. They disrupt social networks and decrease the opportunity for close adult-child relationships to develop at a time when adolescents are especially concerned with peer relationships and may be in special need of close adult relationships outside of the home. Furthermore, the fact that most traditional middle grades schools are larger and less personal and that teachers must interact with so many more

students make it more likely that some early adolescents' emerging problems will go unnoticed.

Researchers have explored the specific impact of some of these classroom environment factors on students' achievement-related beliefs concerning mathematics. They have found that junior high math teachers feel less efficacious than do sixth-grade teachers (Midgley et al., 1989) and that student/teacher relationships are less positive following the transition (Feldlaufer, Midgley, & Eccles, 1988; see also Brophy & Evertson, 1978). Eccles and Midgley (1989) suggested that both of these changes could result in the observed negative change in students' achievement beliefs concerning mathematics. The stricter evaluative practices students encounter in junior high (see Blyth et al., 1978; Kavrell & Petersen, 1984; Schulenberg et al., 1984) also could produce the declines in academic competence beliefs that were found in Study 2.

Like the decreases in children's competence beliefs, the decreases in children's ratings of the usefulness and importance of the different activities and their interest in those activities across the junior high transition are likely explained by the changes in children's processing of evaluative feedback and changes in the school environment discussed earlier. As children understand their performance outcomes more clearly and as school environments change in ways that make school more competitive, evaluative, and controlling, many children's beliefs about the usefulness and importance of different academic activities will decrease, as will their interest (see Wigfield, *in press*; Wigfield & Eccles, 1992, for more detailed discussion). This change may be particularly likely if their competence beliefs decrease as well. For instance, as children's competence beliefs in math or reading decrease, they also may begin to view these activities as less useful and important. By doing so they can maintain a higher level of self-esteem (see Harter, 1985, 1990).

In sum, both organismic and contextual factors help explain the changes in children's competence beliefs and subjective task values observed in these and other studies. During the early elementary school years, the organismic factors may be more important as children come to understand better how they are doing relative to others and receive more and more evaluation of their performance. Later in elementary school and into middle grades school, the contextual factors may become more important. Once students can understand the evaluative feedback in relatively sophisticated ways, the methods by which that information is presented and the relative emphasis given to different aspects of performance probably become the most important factors determining change in children's achievement-related beliefs and values.

## DIRECTIONS FOR FUTURE RESEARCH

In this article, information on how children's competence beliefs, subjective task values, and general self-esteem change across the elementary and middle school years and differ between boys and girls was presented. Both organismic and contextual factors that can produce those changes were discussed. A major concern is the negative shift in many of the beliefs that were measured. These negative shifts may show the beginnings of the psychological processes that put some early adolescents at risk for later school failure. Schools need to provide ways for these early adolescents to develop more positive beliefs about the legitimate activities they can participate in at school.

There are several important tasks for future research in this area. One is to assess the relations of different-aged children's competence belief and subjective values to their self-esteem, activity choice, persistence, and performance. In previous work with older adolescents (e.g., Eccles, 1984; Eccles et al., 1983; Eccles, Adler, & Meece, 1984; Meece, Wigfield, & Eccles, 1990), adolescents' competence beliefs and expectancies for success are the strongest predictors of subsequent performance in math, stronger predictors in fact than previous math performance. Adolescents' valuing of math is the strongest predictor of their intentions to take more math and actual decisions about whether or not to continue enrolling in math class. Similar work should be done with the early adolescent and elementary school-aged children in Studies 1 and 2 to see how these relations unfold in different domains (see Wigfield, in press, for further discussion).

The patterns of change in competence beliefs, subjective task values, and self-esteem for different groups of children, such as high and low achievers, should be examined. Wigfield et al. (1991) reported that early adolescents rated by teachers as being more competent in math had higher self-esteem than did middle- and low-rated students and also had more positive beliefs about math. Similar differences in the Study 1 sample should be explored, along with other individual difference factors. Such analyses will provide a better understanding of different developmental trajectories in these important self-belief constructs.

Finally, many middle grades schools across the country are reorganizing and restructuring in response to reports like the Carnegie Council on Adolescent Development's (1989) *Turning Points* report that recommended a variety of changes in the structure of middle grades school. As schools change in ways that may better match early adolescents' developing characteristics, perhaps the declines in adolescents' achievement beliefs and values observed in Studies 1 and 2 will diminish. We certainly hope so.

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