In the minds of many, a person's interest is linked to his or her achievement with a particular subject content such as ballet, mathematics, etc. Such links are likely to be appropriate if the type of interest being discussed is a well-developed individual interest (Renninger, 2000; see also Krapp & Fink, 1992). The links are less likely to be accurate if "interest" refers to or is determined solely by measures of evaluation of positive or negative liking, preference, or attraction (Hidi, 2000).

Over the last 10 years, there have been an increasing number of studies which have included the study of interest as an independent variable. Findings from these investigations are sometimes contradictory, possibly because of the various ways in which interest has been conceptualized and measured (Hidi & Harackiewicz, 2000; Renninger, 1998b). Some researchers have equated interest with positive affect that stems from ongoing examination of subject matter, whereas others have equated the positive affect that stems from an initial contact with the same subject matter with interest. The present chapter suggests there are different types of interest and achievement relations, depending on the type of interest a student holds for a subject content. The chapter further suggests students can be supported to develop interest and work with subject content for which they initially have a less-developed interest.
Interest refers to a psychological state of having an affective reaction to and focused attention for particular content and/or the relatively enduring predisposition to re-engage particular classes of objects, events, or ideas (see discussions in Krapp et. al., 1992, 1998; Hidi, et. al., 1992). Various types of interest have been identified. These different types of interest can generally be categorized as assessing situational or individual interest (see discussions in Alexander 1997; Alexander, et. al., 1995; Krapp et. al., 1992, Krapp, 1999; Hidi, 1990; Schiefele, 1991; Renninger, 1990). Situational interest describes those interests that are triggered in the moment, such as by a sudden sound, the opportunity to work with friends on a project, a cartoon illustrating a text. Individual interest refers to a person's relatively enduring predisposition to re-engage and persevere in work with particular content over time.

Although individual interest and intrinsic motivation may appear to describe similar outcomes, including the enjoyment of focused and continued engagement with a task for the sake of the task itself, individual interest refers to a particular person and content relation, whereas intrinsic motivation more typically refers to a person's approach to a range of contents both in the moment and over time (see extended discussions in Hidi, 2000; Hidi & Harackiewicz, 2001, and Renninger, 2000). Both situational interest and individual interest refer to a psychological state of being interested, however they vary in the particular relation of stored knowledge and stored value they hold. A situational interest may involve little knowledge and is not necessarily associated with positive value. It may be triggered in a person who has little information about cloning seeing a video-clip on the subject, or a cartoon of Napoleon in a text about the French Revolution. An individual interest for history, on the other hand, would suggest that a student has both stored knowledge and positive value for history that leads to informed re-engagement and the ability and desire to work with difficulties that might arise (Corno, 1994; Paris & Winograd, 1990; Neumann, 1999; Prenzel, 1992; Renninger, 1989, 1990, 2000). Thus, a student for whom history is a well-developed interest maintains and deepens his or her interest in spite of frustrating or potentially difficult situations such as an ineffective history teacher, a research assignment that requires major revision, and the need to forego another activity in order to take advantage of an unassigned presentation related to topics currently being covered in the history class. Presumably, the student with a well-developed interest has a richer sense about possible questions, directions, etc., at least in part because working through difficulty leads to a stretching of what is known (see discussion in Renninger, 2000).

Although clearly influenced by genetics, the development of interest is supported through the student's interaction with his or her environment. The presence of others who think mathematically, a school in which students are encouraged to ask and pursue curiosity questions in addition to thinking about performance issues, teachers who work to understand what a student comprehends, all extend and constrain the sets of possibilities available to a stu-
dent (Sansone & Smith, 2000). This role of culture, or what Valsiner (1984) has labeled the zone of potential action, is a significant influence on how and why students connect to particular contents rather than others. Depending on opportunities available and support to pursue particular content, a situational interest may evolve into individual interest (Hidi, 1990; Hidi & Anderson, 1992; Krapp, 1999), or individual interest will become well-developed (Renninger, 2000; Renninger et al., 2001). It is also the case that some situational interests never become individual interests. Conditions that enable the development of interest include both what the student brings to and what he or she understands the environment to afford (see Renninger, 1989, 1990). If someone points out the humor in the cartoon of Napoleon, for example, there is more likelihood that the cartoon can provide a scaffold to a developing interest for any of a number of possible topics: Napoleon, pompous leaders, cartooning, and so forth. A student’s response is a function of prior experience, personal preference, and the lens provided by his or her individual interest.

Almost all students have situational and individual interest for some contents (Travers, 1978). Furthermore, these types of interest may co-occur and evolve, frequently supporting the emergence of other interests. For example, at one time, Sam (a pseudonym) has well-developed interests for soccer, reading, and his friends. In addition, he has a triggered situational interest for the animal behavior project that he has been assigned in his seventh grade science class (Hidi & Baird, 1986; Hidi and Berndorff, 2002; Mitchell, 1993).

The case study of Sam is detailed below in order to: (1) illustrate the relation between student interest and achievement, (2) provide a basis for revisiting research on both interest and achievement motivation; and (3) consider the possibilities and conditions of interest development. These topics are addressed concurrently rather than sequentially. A concluding discussion follows.

In depth analysis of one student focuses attention on the range of interest and achievement relations that characterize student’s lives. Sam's case is profiled because the school he attends allows for differences in student interest and the possibility of changed interest for school content.

**SAM, A SEVENTH GRADER**

**Well-Developed Individual Interest and Achievement**

Sam is a white, middle-class boy who spends most of his free time training for or playing soccer. Even though he is not supposed to play ball inside his home, he kicks and fools around with balls of all sizes as he moves around his house. Sam can also often be found reading before he goes to sleep, when he wakes up, and when he retrieves something from his room—despite the fact that he has his own reasons to get back downstairs. Sam also enjoys opportunities to hang-out with his friends, and he has many of them. He has friends on the different teams with which he plays; he has friends in the neigh-
borhood, at camp, and at school. Even when he sees friends at school or at practice, Sam communicates with most of them via instant messaging (IM) every day.

Not surprisingly, Sam plays on a premier club soccer team and gets his highest marks in courses that have reading as their basis. More surprising, possibly, is the fact that he is likely to tell everyone that his interest is soccer but would only mention that he did any reading or had friends as an interest, if asked directly.

The fact that Sam identifies himself as having an interest for soccer is age, gender, and culture-appropriate (Bergin, 1999; Föllings-Albers & Hartinger, 1998; Todt & Schreiber, 1998). Sam is a young adolescent male who lives in a culture where recognition of athletes is visible and a regulator of status among young people (Eckert, 1996). That Sam is not aware of his well-developed interest for reading and for his friends is consistent with points made by Renninger (i.e., 1992, 1998, 2000) who suggests that students are not always aware of individual interest—especially if the interest in question is well-developed. Sam knows that he plays soccer better than most, that he likes to read whereas some of his friends have to be bribed to do their summer reading, and that he is more comfortable with people than are others in his age group. However, he does not appear to use information about his interest(s) as a basis for setting goals for himself (Harackiewicz & Elliot, 1993; Pintrich, 2000). Rather, he appears to engage soccer, reading, and his friends—his well-developed interests—without conscious evaluation of expectancy and value (Eccles-Parsons et al., 1983; Wigfield, 1994; Wigfield and Eccles, 1992). Take, for example, Sam’s interest for reading.

Sam almost always does his reading assignments first. He is surprised that his friends have difficulty preparing for essay tests and sometimes do poorly in Language Arts (reading and writing) and social studies classes. For example, in the car pool one morning, Sam was asked about the meaning of the title of the novel he and the other students had been reading. The other students listened to him and wrote down what he said in their notebooks while Sam found a radio station that he wanted to listen to. Sam ended up doing very well on the test without either worrying about it or feeling like he needed to study for it. However, as part of the ongoing assignment, Sam had already read the novel very carefully and had written the assigned chapter summaries using far more detail than the other students. Neither his ability to read carefully, nor the quality of his chapter summaries were evaluated. Instead, the teacher checked periodically to see if the summaries had been written. Sam does not feel that he is exerting special effort to write thorough summaries. In fact, he does not seem to be aware that he is doing so.

Sam has characteristics of a mastery-oriented student (Ames, 1992; Dweck & Leggett, 1988). He puts a lot of work into his understanding of the novel and appears confident about his performance on the test. In contrast to students whose motivation might be identified as approach mastery because they have a strong belief in the role of effort (see summary, Linnenbrink & Pintrich, 2000), however, Sam is seemingly unaware that he is exerting effort on the reading assignment because for him reading is a well-developed interest.
Even though Sam was confident about the test on the book, he is not self-efficacious about all other aspects of his performance. For example, he assumes that his method of approaching the chapter summaries is the same as the other students. His method includes rereading sections of the book as he writes and is not aware that others may not do so. From talking with other students he knows that they regularly finish the chapter summary assignment in about 20 minutes. It sometimes takes him as long as 2 hours to write a summary. He has an inaccurate sense that he is less able than the others as a result.

Thus, while Sam has feelings of self-efficacy and confidence in his test performance (Bandura, 1986; Zimmerman, 2000), he also has doubts about his abilities to process text efficiently. He does not consciously connect the detailed chapter summaries to his successful test performance. It is possible that without feedback on this point, his interest for reading may eventually be negatively affected. Sam may need support and feedback from others in order to stabilize his feelings of self-efficacy and to maintain his interest for reading, even though his interest for reading is well-developed (Renninger, 2000).

There is general agreement in the research literature on interest that heightened attention, concentration, and positive affect characterize the psychological state of relatively enduring interest (e.g., Krapp et al., 1992; Pekrun, 2000; Prenzel, 1992; Schiefele, 1998). It might also be expected that with heightened attention, concentration, and positive affect or interest, students would have more developed metacognitive strategies and achievement (Zimmerman & Martinez-Pons, 1990). Sam is disciplined in his work with the text but his metacognitive awareness is not what might be expected. He reads, but he is not metacognitively aware that he uses particular strategies to do so, nor does he think that others' strategies are different from his. Moreover, as the information available about his approach to and engagement with soccer suggests, Sam has a variety of challenges with which he is working that are in an ongoing process of being revised. At best, Sam might be said to have an idiosyncratic perception of the utility, importance, and personal relevance of contexts like reading or soccer for which he has a well-developed individual interest (Wigfield & Eccles, 1992). From Sam's perspective, he just plays soccer or reads.

One might wonder about students with less-developed interest for reading who do not prepare detailed chapter summaries, who have not reviewed what they have read, and who then need to cram for the test. For them, the Language Arts teacher's instructional method may be lacking. For them, developing skills in summarization is essential (Hidi & Anderson, 1992), as is reflecting on their approach to and strategies for reading (Beck & McKeown, 2001; Skinner & Belmont, 1993; Zimmerman & Martinez-Pons, 1990).

The divergence between Sam's behaviors and what might have been hypothesized may be related to Sam's having a well-developed, rather than a less-developed interest for reading. He does not need to be motivated to get
to a task for which he has a well-developed interest because he is already engaged in and working on the types of challenges it represents.

**Less-Developed Interest and Achievement**

In all likelihood because Sam has effective-enough strategies and reading is a well-developed interest, there is little contradiction for him between what he wants to do when he is working on preparing chapter summaries and what he is supposed to do (Krapp, 1993). The lack of explicit direction and feedback means that Sam experiences the writing of chapter summaries as something that he generates on his own. In this way, the assignment may be quite effective for Sam. However, Sam's work with the assigned novel and required chapter summaries can be distinguished from other learning that he is required to do in school, such as the science project for which he has only a triggered situational interest.

In science class, Sam and two other boys chose to study the Indonesian Box Turtle because a teacher in the next room had one and it meant that they did not have to locate an animal to study.

The group's assignment was an open one, with the expectation that groups of three students would work together to care for an animal, write daily observations, and conduct an experiment. The goals of their work and the expectation for the final write-up were laid out in rubric. Sam ended up volunteering to keep the turtle over the two weekends of the project, because one boy's parents are separated and he shuttles between homes, and the other boy was preparing for his Bar Mitzvah. The first weekend, Sam had to be reminded to do the feeding and observations keeping the turtle entailed, but once he did he seemed amused that his cat sat up on the table and watched the turtle too. He also noticed that as the turtle got comfortable in its new location, it started moving around, looked back at him or the cat and turned its head when spoken to. The second morning after observing that the turtle had trouble negotiating the stick in the aquarium and needed to be lifted into the Tupperware pool that he and his group had fashioned, Sam got some soil from the garden and built the turtle a ramp to get into the water. Much to Sam's delight, the turtle not only used the ramp but did so repeatedly. The turtle swam and spent a good deal of time in the water for the rest of the weekend.

Sam took the turtle home because the other boys could not, and he had to be reminded to do the assigned observations (i.e., what and how much the turtle ate, how much the turtle weighed). Given support to do the required observations, however, his situational interest was triggered by the cat's attentiveness, the turtle's responsiveness, and the turtle's need for a ramp. His decision to get soil and build a ramp for the turtle was rewarded by the turtle's use of the ramp.

Even though they held situational interest, each of Sam's connections to the science project were tenuous. Together these connections may have made the project more palatable but they did not appear to push Sam to engage seriously
with the deeper purposes of the project. They had little to do with understanding the life cycle generally, or the Indonesian Box Turtle more specifically. At this point in the project, Sam was focused on getting aspects of the task done (e.g., feeding the turtle).

Support from the environment does appear to have initiated Sam’s re-engagement with the project, however, and facilitated his finding a connection to it (Bergin, 1999; Guthrie & Cox, 2001). Without this support, it is unlikely that Sam would have noticed the cat’s attentiveness or the turtle’s need for a ramp.

Sam clearly can attend to, or connect with school content and does. The type of connection he makes to this kind of assigned project for which he has a less-developed interest, however, is related to his sense of its purpose. Sam needed both teacher and parental input about the project’s goals and his immediate obligations (e.g. taking responsibility for the turtle observation over the weekend).

The next weekend, Sam’s parents suggested putting the turtle on the back porch so it did not smell up the house. However, the turtle never seemed to acclimatize. It remained hidden in a corner of the little house the boys had fashioned for it in the aquarium. Sam was very concerned that maybe the turtle was dying. He worried that the turtle’s death would mean that he and his group would fail the project. He was also concerned that the turtle belonged to another teacher (the one he would have next year) and that that teacher would “kill him” for not taking care of the turtle. Sam checked on the turtle almost continuously, offering it more food and more water but his notes indicated that none of these efforts made any difference.

When he went back to school Monday, he got his group together, explained the situation, and they all went to talk with the science teacher in whose room the turtle normally lived. The science teacher told them that the turtle looked like it was healthy. He suggested taking the turtle out of the aquarium for a bit and allowing it to crawl around on the grass outside. Outside on the grass, the turtle did start to move and moved very quickly.

Sam was fascinated by how much faster the turtle moved on the grass outside. He and his group decided to clock the distance and the time of the turtle’s movements and then devised a set of experiments to assess the turtle’s ability to climb. Sam particularly enjoyed creating conditions to test the turtle’s ability to climb. Based on information his dad located for him on the Internet, Sam later figured out that turtle probably did not move when it was put on the porch because the weather had been cool over the weekend. This type of turtle preferred to be warm.

It may have been predictable that the aspects of the project with the turtle that captured Sam’s attention centered on conditions of movement and activity. He may have identified in some way with the turtle’s speed and agility. He definitely found the increased activity of the turtle on the grass engrossing, and it was on this that he focused his subsequent observations and hypothesis testing. Sam also felt responsible for the turtle the weekend that it appeared to have stopped moving, however. The situational interest that the possible death of the turtle triggered probably caused him to spend more time focusing on the turtle and the conditions it needed for survival, in turn,
priming him for being so attentive to the turtle's movement once he and the group had a lead on what the turtle needed.

Importantly, Sam's situational interest was triggered by a negative feeling, his anxiety (Iran-Nejad, 1987; Pekrun, 2000; Hidi & Harackiewicz, 2000). His anxiety led him to begin assuming responsibility for the turtle without being reminded to do so. He was worried that the turtle might die. With a purpose and autonomous action (Deci & Ryan, 1985, 1987; Krapp, 2000; Skinner et al., 1990), however, Sam's feelings became more positive. The information his father found for him contributed to his understanding of the turtle's behavior but his interest for the turtle was now maintained and he no longer needed his parents' support in order to take responsibility for doing the assigned observations and turtle care. Once he began generating questions out of curiosity he was ready to extend his knowledge and this also resulted in the kind of valuing that also led him to return to the project on his own (see discussion in Renninger, 2000).

Sam and the other two boys had each requested to work with the Box Turtle, although there was little in Sam's past experiences that might have predicted this choice. Since all groups of students worked with different animals, this meant that no group had exactly the same sets of observations or experiments to conduct. Thus, Sam and his group were responsible for figuring out how to work with the turtle themselves.

Faced with students like Sam who have little interest for their subject matter, a key issue for teachers is how to establish open-ended enough tasks that students both want to do and through which they will do substantial learning. Tasks that fit this description are typically complex, may focus on real problems, and lead students to use and develop skills through work with multiple resources, including peers (Blumenfeld et al., 1991; Brown et al., 1989; Resnick, 1987; Bransford et al., 1999). The design of the science project Sam was assigned is an example of this type of project. Although it held little interest for him initially, it did involve working with friends, which for him was a well-developed interest. As the project evolved, others (parents, teachers, and peers) provided him with the kind of support or scaffolding that meant that Sam was able to pick up on the instances of situational interest the project afforded (Hidi, 1990; Mitchell, 1993), and that his situational interest was maintained.

Sam's group received high marks on their turtle project. Sam had even chosen to miss a soccer practice so he could work on the written report that was required. The group worked over a weekend and after school for two nights in order to write their report. They talked about the effort they were expending and that they were doing a good job. One of the boys supervised the proofreading, redrafting and development of each section of the paper, and its alignment when printed out. Sam did his part to type, develop the content, and ensure that their copy was polished. He also cleaned up the aquarium for their final presentation, which now included a broccoli plant he had brought in from home in order to make the aquarium look more like the rice paddies of the turtle's homeland.
Chapter 7. Student Interest and Achievement: Developmental Issues

The type of interest a student holds for a given subject content appears to be related to both his or her activity and achievement. Even though Sam started out with little interest for the science project, he became attentive to the turtle, and ended up voluntarily spending long hours perfecting the report. He had the support of the other boys to continue working on the project and the intensity of the effort they put into it was buoyed by their sense that what they were doing was good. Sam had also identified turtle movement as a meaningful aspect of turtle behavior and had attempted to study it systematically, which also meant that he had something to write about in the report.

Later, however, Sam commented that even though their group got high marks on the project, he was not sure that all of the time it required was worth it. For him, the science project represented a qualitatively different type of engagement from those for which he has a well-developed interest.

**Characteristics of Interest and Achievement**

Sam's case suggests that the interest-achievement relation differs depending upon the type of interest a student holds. Even though Sam's interest for the science project was maintained, and he prioritized it over soccer for 1 week, he was also conscious of the time that he spent on the project.

Sam is most successful with subject contents for which he has a well-developed interest, in the sense that he has a sustained ability to work at and be challenged by these activities. Sam does not appear to need explicit target or academic goals (Linnenbrink & Pintrich, 2000) if he has a well-developed interest. Instead, he engages in a fluid process of generating and revising answers to the challenges he sets for himself as the process or flow of his activity (Csikszentmihalyi, 1990). This behavior is like that of expert problem solvers who can, when asked, explain their actions but who would never break down their actions in terms of particular goals to be pursued in the process of doing them because it would hamper their activity (Chi *et. al.* , 1988). In fact, the effort that Sam does exert in the process of playing soccer, reading, or hanging out with friends feels effortless, even though he spends long hours honing his skills as a soccer player, reading, and talking and playing with friends. He enjoys the challenges that these contents represent and likes trouble shooting the complications they introduce. As a result, he does not count the hours that he puts into these activities.

The example of the science project demonstrates that Sam can develop a connection to content for which he has a less-developed interest and that he can experience success if (1) support for him is in place (Hidi *et. al.*, 1998; Goldman *et. al.*, 1998; Renninger, 2000; Sansone & Smith, 2000; Sansone *et. al.*, 2000).
1992) and (2) if he decides to commit some “effort” to developing this connection (Corno, 1994; Renninger, in press).

There were some aspects of the science project, like the conditions of the turtle’s movement and its climbing ability, that Sam probably would not have realized without input from more expert-others, such as the science teachers and his dad. Furthermore, the final push to finish the paper and clean-up the aquarium might not have been undertaken without both the rubric for a finished product supplied by his teacher and the support and expectations of others, including his peers. In fact, it seems likely that the presence of others working on the turtle project may have accounted for the kind of effort and hard work Sam invested in the project. The other students modeled possible work habits, strategies, and standards, and they, as friends, were also a well-developed interest for Sam.

The issue here is not simply that Sam needed support, but that he got the kind of support that enabled him to move a little closer to understanding life cycles and habitats, as well as what doing a good job on this kind of project involved (Grolnick & Ryan, 1989; Grolnick, Ryan, & Deci, 1991; Jacobs & Eccles, 2000; Skinner, 1995). The kind of support he received from more expert-others and peers built on his own strengths, needs, and interest. It was concrete and led to inquiry: the Box Turtle is not dying, try taking it outside. The anxiety Sam and the other boys felt was alleviated by the teacher’s comment and although this pointed them to a next action, they had no idea what to expect.

Without support to further develop his understanding, Sam probably would have enjoyed hanging out with the two other boys in his group. It is unlikely, however, that he would have: (1) generated and answered his own question about the conditions in which the Box Turtle needed to live, (2) embarked on a set of systematic experiments, or (3) had a benchmark for knowing what a fully-developed report of the project entailed. The presence of others on the project provided camaraderie, and guidance from the teachers meant that the students worked together, providing each other with feedback and models as they worked on the different parts of the project (Brown & Campione, 1994; Renninger, 1998a).

Even activities for which a person has a well-developed interest require feedback. For example:

Sam was mostly fooling around at the school soccer game his dad was able to attend. When questioned about his behavior, Sam readily said that the team really wasn’t any good, since they had no defenders. Sam needed his father’s help to recognize the challenge of covering both the goal and defense for his school soccer team by himself. His father’s comments about what Sam might do helped Sam shift his focus for the remaining school games, even though he continued to need to talk about how hard the situation was when he felt particularly frustrated.

Sam is cognitively challenged by soccer, especially when the level of other team members’ play is high. He can also be helped to figure out a way to challenge himself as a soccer player, when the level of other team members’ play
is low. While these challenges typically involve figuring out how to work with shots that are at different angles, etc., the effects are not only cognitive. Sam appears to experience more extreme feelings about soccer and other subject content for which he has a well-developed interest than he does about other contents without such interest. For Sam, soccer is a mixture of elation, hard work, and frustration. His frustration invariably appears to yield hard thinking about what did not work and why, and to fuel the potential for improved performance (Neumann, 1999; Renninger, 2000).

In contrast, on the science project, Sam did not appear to experience frustration, nor did he seem to have any questions he wanted to answer until the health of the turtle was in question. He was willing to do some work on the project but even with the teacher's rubric for the project, he did not seem to have a clear idea about what the project required him to learn. Once he had questions about the health of the turtle, he began talking with his group about possible experiments, the write-up they were going to do, and its accuracy, etc. He needed content, not just an assignment in order to do work on the project. He liked the project well enough. He just was not invested in it the same way that he would invest himself in activities for which he has well-developed interest (Renninger, 2000; Renninger, et. al., 2002).

Sam thinks and talks about plays in soccer games, or practices for his team after they have occurred. Even though Sam has soccer practices every day after school and two evenings a week with his team, he sometimes asks his dad or a friend to go out and practice with him some more, even in the evening under outdoor lights they set up for just this purpose.

Many of the boys on Sam's school soccer team have positive feelings for soccer, including the boy who led Sam's group to redraft and develop the written version of the science report. However, their positive feelings for soccer are not the same as Sam's. Neither is the level of their play (or achievement), and they are not setting the types of challenges for themselves in soccer that Sam sets. And, even though their parents may be providing them with some feedback, this support may not lead them to challenge themselves in soccer and/or they may not have the physical coordination necessary to respond to the kinds of challenges that Sam identifies when he plays soccer.

Students with a less-developed interest for soccer play the game until it is over. Typically, they are not rethinking and analyzing past plays. Similarly, Sam's work with the science project begins as a project that needs to be finished. In the process of working with the other members of his group to explain the experiments they did, Sam appears to get caught up in the fervor of the group's recognition that they were doing a good job with the project (Sansone & Smith, 2000). His triggered situational interest had at this point been maintained.

Sam needed support to focus on what the project required and to find a question to answer. The health of the turtle triggered a situational interest, and once Sam's question about the turtle's health was addressed, he found a new set of questions in the movement of the turtle. This kind of connection to content gave the project more meaning. It also meant that the specifica-
tion in the rubric to conduct a set of experiments could be met. Once the required set of experiments had meaning, Sam could then focus on achieving the goals laid out for him in the rubric for the project (Baron & Harackiewicz, 2000; Linnenbrink & Pintrich, 2000).

**Conditions and Possibilities for Interest Development**

Like other students of his age, in the school he attends, Sam likes receiving good grades and is only beginning to understand that his strengths and interests translate into good grades. Recently, Sam proudly told his parents that his Language Arts teacher told his class that he and another boy had written the best “boy papers” in the seventh grade.

Sam's pride following recognition of his writing may have counterbalanced his concern about being slow when he writes chapter summaries. The extremes of emotion that Sam feels for writing about what he reads have their parallels in the highs and lows that he experiences with soccer. Both reading and soccer are contents of well-developed interest for him. Even when he is worried about the turtle’s death or excited by the turtle's ability to move, Sam's does not appear to experience the same range of emotions in his work with the science project.

Recognition provides support for Sam to feel a sense of efficacy in his Language Arts class. It may also have encouraged Sam to continue writing detailed chapter summaries (Sansone & Smith, 2000). The technique of acknowledging strong “boy” papers as well as strong “girl” papers serves to recognize boys for work with a subject that often is considered to be a feminine strength and not necessarily one associated with male athletes. Since boys are often less-developed writers than are girls in middle school (Hidi & Berndorff, 1998, 2002), it may also be important to demonstrate to boys that they can also write well and get recognition for their particular strength as readers and writers (Gottfredson, 1981; Todt & Schreiber, 1998). Like the assignment to write chapter summaries that are then not evaluated, however, this technique may only be an effective approach for students who have a well-developed interests for reading and for writing about what they read. Students who have difficulty with writing and reading may not gain from this approach (Ainley, et. al., submitted).

Although the process of interest development is dependent on students’ cognitive development as suggested by Eccles, et. al. (1998), it is also the product of the students' culture, a culture that supports, empowers, and constrains the development of some interests as opposed to others (Anderson & Maehr, 1994; Eccles & Midgley, 1990). By middle school, students begin to have a sense of themselves as strong in particular ways and not in others and their interest for particular topics rather than others begins to emerge (Krapp, 2000; Todt & Schrieber, 1998). Based on Sam's case, it appears that the role of school culture in shaping the emergence and maintenance of interest needs to be acknowledged.
The school Sam attends self-describes as emphasizing excellence in academics, athletics, and the arts. Sam has not really identified himself as having specific subject matter preferences and at this point in his life, he does well in most subjects. In fact, asked to describe the school subjects that he liked best, Sam wrote:

"I have several favorite subjects: reading, math, history, science, sports, woodshop, art, and music. What I like about reading is the fact that I can get a picture in my mind of a story without it being visual. I like math because I am pretty good at it and I like the challenge of tough math problems. I also like history because I like learning about what life was like in past years and we probably can learn some lessons from it. I like science because I like seeing how things work. I like sports because I like getting my energy out and I am pretty good at them. I like woodshop because I like building things. I like art because I like working with my hands and creating objects out of clay. I like music because I like playing all kinds of instruments and I like learning about the different kinds of music in the world."

Sam's listing of his favorite subjects suggests that he could achieve in his work with each of them were he supported to do so. The list is relatively undifferentiated, although he provides reasonable support for the inclusion of each subject on his list. His inclusion of science may seem unwarranted based on his work with the science project—however, it could be that following its completion the project left him with positive feelings and that having maintained a situational interest for science during the project, he now is in the early stages of developing an individual interest for science.

Sam's list of favorite subjects may be relatively undifferentiated because the organization of his school experience does not lead him to compare his work with that of other students. At the school he attends, students talk about the assignments they do and even help each other to do them, but they do so focused on the content, as in the example of Sam's telling his friends about what the title of the novel meant before the Language Arts test. There is little effort to best the next person. When the Language Arts teacher announces that Sam's writing is of high quality, Sam is rightfully proud, although he is not given any details to help him understand for what he was being recognized.

In fact, most of the students in the school Sam attends do well. These are normal students, who distribute in terms of IQ, background, etc. Some have need for support to pursue careful work in some subjects, while others need that support in other subjects. The expectation in this school is that students will do well and there are multiple opportunities to see themselves as doing well. For example, when Sam receives a report card, his teachers assign him five grades for each subject. He is graded on completion of homework assignments, projects, tests, class participation, and concern for community (in-class behavior). As a result, Sam's report card includes a total of 35 grades and written comments. This means he not only has many opportunities to do well, but that it is likely he will do well in some aspect of each subject, and because of this he is positioned to feel efficacious even if he has skills to master.

When students falter, teachers work with them individually during study halls, after and/or before school. It may be that the combination of this
approach to providing students with opportunities to do well, the teachers' commitment to having their students learn the material being covered, and the project-oriented nature of the curriculum leads students to develop a broad array of interests and accounts for the number of favorite subjects that Sam lists.

Findings from Rudolph, et. al., (2000) do suggest that students' perceptions of experience are likely to serve as filters through which they process the behaviors and responses of others. Thus, experiencing academic difficulty does not necessarily lead to decreased self-esteem, increased negative affect, or depression unless students are given negative feedback or their academic difficulties set up negative perceptions of academic demands or the way school is perceived. If students' positive feelings and willingness to work with different subjects is facilitated, they may be supported to develop a broader array of interest for school contexts.

As Wigfield (1994) points out, however, competence and task value beliefs are often relatively independent of each other, leading younger students to pursue contents to which they are attracted regardless of how well they are able to do them. Over time, Sam might be expected to begin to attach more value to activities that he is able to do well, in turn enabling himself to maintain a positive sense of self-efficacy and self-esteem (Eccles-Parsons, et. al., 1983; Eccles Wigfield, & Schiefele, 1998; Harter, 1998). An important question that has not been answered is whether ability necessarily maps onto achievement, and/or interest. Most students have the ability necessary to work with grade-level materials. Many of them do not have or know how to seize the opportunity to make the necessary connections to the requirements of the tasks they are assigned (cf., Renninger, 1998a; Schoenfeld, 1992). Ideally, such connections would mean that they could use their own words to describe what a task or project requires and what the realization of it's goals includes. Sam's case suggests that such connections can be facilitated by one or more triggered situational interests.

Until very recently, it has been assumed that there is a decline in interest for school-based subject content among students of Sam's age. Many studies suggest that as children get older, their interest and attitude toward school in general and specific content areas in school begin to decline (Eccles & Wigfield, 1992; Eccles, et. al., 1998; Epstein & McPartland, 1976; Haladyna & Thomas, 1979; Hidi & Harackiewicz, 2000; Gardner, 1998). Decline in interest for school subject content during adolescence has been attributed to a more general developmental process in which adolescents discover new and different pursuits leading to a lessened interest for school content (Eder & Parker, 1987).

Hoffmann (2001) proposes that declines in students' interest for school content may be a commentary on the constraints of curricula that do not include choice during middle school and high school years. She suggests that both elementary school-age students and college students may evidence less
decline in their interest for school content then students in middle or high schools because they are given choice about the subjects they study. It may be that choice provides a basis for increasing a student’s feelings of autonomy about their learning (Deci & Ryan, 1987; Deci, 1992), although some types of choice are constrained by curricula (Hoffmann & Häussler, 1998; Hoffmann, 2002), parents and their beliefs about students’ needs (Jacobs & Eccles, 2000; Sigel, 1982; Sigel, et al., 1992), as well as by students’ perceptions about the utility of subject matter and its personal relevance for them (Wigfield, 1994; Eccles, et al., 1998).

Although Sam has a fixed set of courses he needs to take, within each of these he was also given opportunities to make choices too (Cordova & Lepper, 1996; Schraw et al., 1998; Schraw et al., 2001). For example, he figured out the focus for each of his chapter summaries and also how detailed they would be. He chose the animal on which to focus in science, designed the experiment, and wrote up the report with his group in the way they thought best approximated the directions given in the rubric, and so forth. It may be because of these types of choices, that Sam felt some autonomy about his learning and for this reason he came to identify science as one of his favorite subjects. What he said he liked about science is understanding how things work. In fact, once Sam was able to focus on how the “turtle worked,” so to speak, Sam began assuming responsibility for completing the assigned requirements more independently (Baron & Harackiewicz, 2000). Based on findings from Renninger and Shumar (2002), it is likely that it is the combination of autonomy, opportunities to build his knowledge, and interaction with his peers and expert-others that together provided support for his changed perception of science and may have paved the way for him to develop another individual interest (see related discussions in Deci, 1992; Deci & Ryan, 1987, 2002; Krapp, 1998, 1999, 2000).

**INTEREST AND ACHIEVEMENT**

Sam’s case demonstrates that the types of interest a student holds for particular subject content is related to his or her activity and achievement. A student with a well-developed interest for subject matter might be expected to have high achievement whereas a student with a less well-developed interest is less likely to experience high achievement. The student with a triggered situational interest, for example, might only connect to a portion of an assignment. A student with a maintained situational interest or even an emerging individual interest may have positive feelings about the content generally but may not set challenges for him or herself that lead them to stretch their understanding or persevere through frustration to new understanding.

The level of a person’s achievement, however, is not necessarily synonymous with the type of interest held. Students with well-developed interest for content
will do well, as Sam’s case suggests, when they are in schools that emphasize problem posing and problem solving in recognizing achievement. This type of achievement is different from the type of learning and standards for achievement in schools that emphasize more rote methods of instruction. It has been suggested that school cultures contribute to the types of goals students develop (Anderman & Maehr, 1994). It also appears that school culture may influence the development of student interest. In more traditional settings, it is likely there will be students with a well-developed interest for content who are not high achievers and do not connect to the content being taught, and students who are high achievers because they are good at applying algorithms, but who have less-developed interest for the content being covered (Renninger et al., 2002).

Sam’s case was selected as the focus of the present chapter because the school he attends emphasizes student learning. Sam is provided with many different ways to be acknowledged for the work he does and he and his peers share an expectation that school involves finding answers to questions. He is allowed to have and pursue contents of well-developed interest, he is involved with contents for which he has less-developed interest and given opportunities to connect to these.

That Sam cited reading first in describing his favorite subjects is consistent with the findings of Renninger and Wozniak (1985) who reported that young children were more likely to first shift attention, recognize, and recall contents of well-developed individual interest as opposed to contents of less-developed interest. Renninger (1990) interpreted these findings to suggest that well-developed individual interest gates students’ attention by mediating to what and how a student attends.

As Sam’s case illustrates, the attention and memory that characterizes a well-developed individual interest for subject matter also enables focused work and is characterized by flow-like engagement and strong feelings that are primarily positive. In fact, interest has been associated with the automatic (spontaneous) attention and this may account for why students working with content for which they have a well-developed interest efficiently process information (Hidi, 1990, 1995, 2001).

Sam’s work on content for which he has a well-developed individual interest does not feel effortful and he does not necessarily have a target goal, an awareness of utility and importance, unwavering self-efficacy, or developed metacognitive awareness of the strategies he employs. Sam has curiosity questions and pursues challenges that can be quite frustrating in his work with this type of content. Furthermore, Sam’s understanding of the conditions and possibilities for continued work with such content is reinforced by others, his school culture, and his own connections to the content(s) in question. Sam is acknowledged as having achieved, and the feedback he receives enables him to continue to stretch his abilities.

Just as important, even though Sam achieves in contents that are of well-developed interest, he does not appear to have a clear sense of what his
strengths and strategies are. He does not know why he does not need to study for the test on the novel, or why he was singled out as a good writer. He seems to garner a sense that he is good or smart from his performance and others' recognition of him, and it may be that this is sufficient to lead him to begin to identify with reading (Language Arts) as a subject he likes because he does well in it. On the other hand, despite feelings of efficacy, he also harbors doubts about his abilities and thinks that maybe he is unusually slow.

Sam may doubt his abilities in reading, for example, because he does not have a basis for knowing what an effective performance on the different assignments would look like. On the other hand, it also appears that it is important that he has the opportunity to define for himself how to write a chapter summary and that he may be more thorough in completing it than he would have been were he told exactly what needed to be done.

Sam clearly has some ideas about his abilities to achieve when working with contents of well-developed interest and it appears likely that these provide a foundation for pursuing the challenges he sets for himself with these contents. That he is not always as realistic as he might be in setting these challenges may be influenced by what he wants to be able to do. His ambition and lack of realism may also account for the highs and lows of emotion he appears to experience. In working with content for which he has well-developed individual interest, Sam needs to continue to receive support and feedback that enables him to continue to refine, develop, and sustain his interest.

Sam's case suggests further, however, that interest for subject areas for which a student has less-developed interest can be facilitated (Hidi, 1990, 1995, 2001). In particular, it appears that support for students' attention to and achievement in working with less well-developed interest might usefully include multiple instances of triggered situational interest and the inclusion of individual interest (e.g., opportunities to work with friends).

Sam's work with the animal behavior project for which he had a less-developed interest required a lot of effort, even though the task was broken into discrete chunks and was not onerous. With support as Sam's case suggests, individuals with triggered situational interest can identify meaning for established goals, as well as some utility, importance, and personal relevance. With support they may be positioned to begin shifting their understanding of what a subject area includes and being able to make meaningful connections to the tasks they are assigned. This meaning is not global in the same sense that it appears to be for contents of well-developed interest. Instead, meaning is at least initially attached to singular goals linked to particular questions (i.e., How can I keep the turtle alive? How fast will the turtle move?) generated by the student. Importantly, these questions appear to be elicited by situational interest(s), not through an assignment to develop questions or hypotheses.

In order for Sam to do the project, he needed support to engage the goals (e.g., noting how much food was consumed, what the turtle was fed, weigh-
ing the turtle twice a day) and a purpose (keeping the turtle alive) of the project. While there were moments that might have been flow-like such as when the turtle began moving fast and the boys began generating experiments, the project did not evoke strong feelings from him one way or another. It was a school assignment and it needed to be done. He harbored few doubts about his work on the project and felt efficacious enough, probably because he felt confident that he had some peers as collaborators.

Interestingly, even though his interest for the project was less-developed, Sam's type of achievement goals map onto those of the hypothesized approach mastery student as summarized by Linnenbrink and Pintrich (2000). He had strong beliefs in effort—although he did not really link effort to achievement in the sense of success on the project, but rather on project completion. He had adaptive efficacy judgments in the sense that he assumed he could do the project; he just was not particularly concerned about how well he did until there was some question about the turtle's health. He became more self-regulated in his approach to the project, as he had purpose. He clearly persisted to complete the project and expended effort to do so.

Unlike the description of the student with approach mastery goals, however, Sam neither experiences high elation nor low anxiety; and he does not experience high interest and task value for the science project. While Sam has positive feelings for the project and he receives a high mark on it, the quality of his valuing and the nature of the work he is able to do in science is quite different than that undertaken with either soccer or reading. It is likely that Sam's positive feelings about his work on the project would offset any negative associations he might have developed prior to the project for science and/or animal behavior. A critical and unanswered question is whether Sam's positive feelings and the learning that he did undertake in working with the science project made a lasting impact on his learning.

**DISCUSSION**

It is important to point out that Sam's is one case. Examination of Sam's case was not intended to address all differences between students such as race, ethnicity, gender, or SES. Instead, Sam's case provides a basis for exploring the relation between different types of interest and achievement in a school environment that recognizes differences in interest as part of student learning, and as such allows for its study.

Sam's case underscores the importance of considering the role and type of a student's interest for different subject matter in assessing individual interest, task value, and emotional response. It suggests that interest can develop and that even well-developed interest needs to be supported. It also highlights the importance of recognizing that earlier stages of interest development may map more accurately onto research conducted on achievement motivation because triggered and maintained situational interest, and even
emerging individual interest for content, addresses the processes involved in students making connections to content to be learned. Students with well-developed individual interest for subject content, in contrast, have established one or more connections to such content and are engaged in a qualitatively different process of further developing these connections. As such, they tend to be engaged in and get recognized for their achievement—provided that their environment does not constrain the development of their interest and such recognition.

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Chapter 7. Student Interest and Achievement: Developmental Issues


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Chapter 7. Student Interest and Achievement: Developmental Issues


The Development of Goal Orientation

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Students often mention different reasons for doing academic work. Whereas some of their reasons surely vary by subject matter, the “rationale” for doing one’s schoolwork certainly changes with age. The present chapter presents a review of research on developmental shifts in students’ achievement goal orientations. Specifically, we argue that changes in goal orientations are quite predictable. Nevertheless, these changes primarily can be linked to the changing contexts in which children, adolescents, and adults encounter learning situations.

WHAT IS A “GOAL ORIENTATION”? 

Goal orientations have to do with students’ reasons for engaging in academic tasks. Whereas some goals are related specifically to what a student is trying to achieve (e.g., the goal of getting an A in a chemistry course), goal orientations deal with students’ reasons for taking the chemistry course in the first place (Urdan, 1997). As noted in a special issue of Contemporary Educational Psychology, there is much confusion in the achievement motivation literature with regard to terminology (Murphy & Alexander, 2000). This confusion is particularly evident in the literature on achievement goal orientations (Pintrich, 2000).
Defining Goal Orientations

Researchers have identified several types of goal orientations. Although most definitions share a common underlying theme, there are subtle differences in these terms and in their interpretations. In addition, these different terms have evolved historically via different programs of research.

Goal Orientations Concerned with Learning, Effort, and Improvement

First, goal orientation researchers have identified an orientation in which the learner is focused on task mastery, improvement, and self-comparison. These goals have been operationalized and defined somewhat differently by various researchers. Dweck and her colleagues (e.g., Dweck & Leggett, 1988) discuss learning goals. They suggest that when students adopt learning goals, their goal when doing an academic task is “to increase their competence” (Dweck & Leggett, 1988, p. 256). Using this operationalization, Dweck and her colleagues have demonstrated that the adoption of learning goals is associated with the belief that one’s intelligence is malleable (Dweck & Leggett, 1988).

Ames and her colleagues have referred to mastery goals in their program of research (e.g., Ames, 1992). Ames and her colleagues identified the parameters of classrooms that are associated with holding mastery goals. Specifically, Ames has argued that a classroom climate conducive to mastery goals is a classroom in which the teacher and students define success in terms of progress and improvement, place a high value on effort and learning, feel a sense of satisfaction from taking on challenges, and view mistakes as a part of the learning process (Ames & Archer, 1988). In addition, teachers in mastery-oriented classrooms are focused on how students are learning, rather than on how they are performing relative to others.

Maehr, Midgley, and their colleagues also have studied students’ mastery goals. Their conception of goals relates to students’ reasons for engaging in academic tasks (similar to the work of Ames and Dweck). Their research has focused on the development of reliable and valid measures of various types of achievement goals. Their operationalization of mastery goals focuses on the mastery-related reasons that students give for doing their school work (e.g., doing school work because one likes to learn new things, doing school work because one enjoys it, doing school work because one wants to get better at it, etc.) (see Midgley et al., 1998, 2000). In 2000 Midgley and her colleagues updated their measure of mastery goals to eliminate items that assessed intrinsic value and that made references to students’ behavior (see Midgley et al., 2000).

Nicholls and his colleagues (e.g., Nicholls, Cobb, Wood, Yackel, & Patashnick, 1990) have operationalized their construct of task orientation somewhat differently from the previously mentioned researchers. Specifically, Nicholls
and his colleagues have focused on the extent to which students report feeling successful or pleased when they engage in various tasks (e.g., how pleased they report feeling when they solve a problem by working hard, or when they feel the problems they are working on makes them "think hard") (Nicholls, Cobb, Wood, Yackel, & Patashnick, 1990, p. 115).

**Goal Orientations Concerned with Performance, Extrinsic incentives, and Ability**

Researchers have identified several types of goal orientations that are related to performance, ability, and extrinsic incentives. Dweck and her colleagues defined *performance goals* as goals "in which individuals are concerned with gaining favorable judgments of their competence" (Dweck & Leggett, 1988, p. 256). Their program of research has demonstrated that individuals who hold performance goals are likely to believe that their intelligence is a fixed entity that is resistant to change.

Ames defines performance goals somewhat differently. As they did with mastery goals, Ames and her colleagues have defined performance goals in terms of the characteristics of classrooms that are conducive to performance goals. Specifically, a classroom that is performance-oriented is a classroom in which success is defined by high grades, value is placed on high ability, satisfaction is derived from doing better than others, mistakes invoke anxiety in students, and the attention of students and teachers alike is focused on students' performance relative to others.

Nicholls and his colleagues (e.g., Nicholls, Cobb, Wood, Yackel, & Patashnick, 1990) have identified both an *ego orientation* and a *work-avoidance* construct. Students report being ego oriented when they feel pleased that they know more than others, or when they are the only ones who can answer a question. Work avoidance is characterized by being pleased when one does not have to work hard or when academic tasks are perceived as being "easy" (Nicholls, Cobb, Wood, Yackel, & Patashnick, 1990, p. 117).

**Unconfounding Performance Goals**

Through much of the 1980s and early 1990s, many of the foregoing constructs were confounded; specifically, a number of different ideas often were measured under the general rubric of a “performance goal” (Elliott, 1997). Recent research has distinguished among these various constructs. First, it should be noted that Elliot and Harackiewicz (1996) pointed out that most achievement goal orientation researchers focus exclusively on mastery and performance goals. Specifically, they argue that most motivation researchers focus on the “approach” components of mastery and performance goals. However, as noted by early motivation researchers (e.g., Atkinson, 1957; McClelland, 1951), learners are motivated both to attain success and to avoid failure. Thus,
the “avoidance” component largely has been ignored in research on achievement goal orientations.

Elliot and Harackiewicz (1996) proposed and demonstrated that performance goals can be broken down into both performance-approach and performance-avoid goals. Approach-type performance goals involve the goal of demonstrating one’s competence relative to others; individuals with these goals are interested in demonstrating their ability relative to others. In contrast, avoidance-type performance goals involve the goal of avoiding looking incompetent at a task. Other researchers (e.g., Middleton and Midgley, 1997) have demonstrated that the approach–avoidance distinction for performance goals applies to adolescents as well.

For example, Midgley and her colleagues describe performance–approach goals in this way:

When oriented to performance–approach goals, students’ purpose or goal in an achievement setting is to demonstrate their competence. Attention is focused on the self. A performance–approach orientation has been associated with both adaptive and maladaptive patterns of learning. (Midgley et al., 2000, p. 11).

In contrast, performance–avoid goals are described in the following manner:

When oriented to performance–avoid goals, students’ purpose or goal in an achievement setting is to avoid the demonstration of incompetence. Attention is focused on the self. A performance–avoid orientation has been associated with maladaptive patterns of learning. (Midgley et al., 2000, p. 12).

In addition, Pintrich (2000) suggests that mastery goals might be broken down into mastery–approach and mastery–avoid states. In a mastery–approach state, students would be focused on task mastery, learning, and understanding, whereas in a mastery–avoid state, students would be focused on avoiding misunderstanding or not learning the specific task (Pintrich, 2000).

Some goal orientation theorists also have identified an extrinsic goal orientation (Anderman, 1994; Anderman, Maehr, & Midgley, 1999; Maehr & Midgley, 1991, 1996; Pintrich, Smith, Garcia, & McKeachie, 1993; Wolters, Yu, & Pintrich, 1996). Students who are extrinsically goal oriented are particularly focused on earning rewards and good grades.

Reconciling Differences between the Various Definitions

Although there is much similarity between and among the constructs that have been developed by various researchers, there are some subtle yet important differences. For example, Nicholls’ model of goal orientations includes aspects of timing—when students feel particularly successful at a given task, whereas other goal orientation models (e.g., Ames & Archer, 1988; Dweck &
Leggett, 1988; Maehr & Midgley, 1996) focus more on students’ specific reasons for engaging in a task (Nicholls, et al., 1990; Maehr & Midgley, 1996; Midgley et al., 1998).

Thorkildsen and Nicholls (1998) have argued that some of these differences emanate from the theoretical frameworks of some of the researchers. For example, Thorkildsen and Nicholls have suggested that Ames’ work emanates from a social psychology perspective, whereas Dweck’s work emanates from a personality psychology perspective. Consequently, differences in definitions and formulations of goal orientation theory may be related to differences in the training and worldviews of the various psychologists who study these orientations.

In the present chapter, we adopt the terms “mastery goals” and “performance goals.” We make the distinction between performance-approach and performance-avoid goals whenever that distinction is possible (whenever the researchers made that distinction in the research being reviewed). In addition, because some studies reviewed in this chapter focus on extrinsic goals, we use the term “extrinsic goals” when appropriate to describe goal orientations that focus on engaging in academic tasks to earn some type of reward or to avoid some type of punishment (e.g., Anderman, 1994; Maehr & Midgley, 1991, 1996; Pintrich, Smith, Garcia, & McKeachie, 1993; Wolters, Yu, & Pintrich, 1996).

The Importance of Goal Orientations

Why should we care about the development of goal orientations? Basically, we should be concerned about goal orientations because they predict important and valued educational outcomes. Indeed, students’ reasons for engaging in various academic tasks are directly related to the types of cognitive strategies they use, as well as to how well newly learned material is stored in long-term memory.

Many studies have used a goal orientation framework over the past 20 years. For mastery goals, the results have been fairly consistent: The endorsement of mastery goals generally is related to positive educational outcomes, such as long-term learning, the use of deep cognitive strategies, and relating material to prior knowledge (e.g., Ames & Archer, 1988; Anderman & Young, 1994; Meece, Blumenfeld, & Hoyle, 1988; Nolen, 1988; Nolen & Haladyna, 1990; Pintrich, 2000; Pintrich & De Groot, 1990; Pintrich & Garcia, 1991; Pintrich & Schunk, 1996; Urdan, 1997). For performance goals, the results have been less consistent. This is primarily because prior to the mid-1990s, many researchers confounded the various types of performance goals (e.g., approach, avoid, extrinsic, etc.) (Elliott, 1997; Elliot & Harackiewicz, 1996; Middleton & Midgley, 1997). Harackiewicz, Elliot, and their colleagues have conducted a series of laboratory-based experiments, which demonstrate that
the adoption of performance goals can lead to increased intrinsic motivation in college students. However, these effects depend on the effects of moderators. For example, in one study (Elliot & Harackiewicz, 1994), intrinsic motivation was related to performance goals for achievement-oriented participants, whereas intrinsic motivation was related to mastery goals for individuals low in achievement orientation.

In a study of college students, Harackiewicz, Barron, Carter, Lehto, and Elliot (1997) found that both mastery and performance goals may be beneficial to college students. Specifically, these researchers found that students who endorsed mastery goals in introductory psychology classes at the beginning of the semester were more likely to indicate high levels of interest in the course material at the end of the semester. The endorsement of performance goals predicted higher course grades. Mastery goals were unrelated to grades, and performance goals were unrelated to interest. Interactions between mastery and performance goals also were examined, but none were found. Other studies (e.g., Elliot & Harackiewicz, 1996) have found that performance-avoid goals may be related to decrements in intrinsic motivation in college-aged students, whereas performance-approach goals do not appear to have the same negative effects.

Pintrich (2000) examined mastery and performance-approach goals in a sample of eighth and ninth grade students. Results indicated that mastery goals were related to a host of positive outcomes. However, results also indicated that when students endorsed both performance-approach goals and mastery goals, the results proved to be equally adaptive for students.

In a recent review of the literature on performance-approach goals, Midgley, Kaplan, and Middleton (2001) conclude that the results of studies on the relations of performance-approach goals to a variety of outcomes are mixed. In some studies, these goals are related to adaptive outcomes, whereas in other studies, they are related negatively or inversely related to the same outcomes. Midgley and her colleagues conclude that additional research on performance-approach goals is needed. As an example, researchers need to more carefully examine the effects of performance-approach goals on students when they face a setback (Midgley, Kaplan, & Middleton, 2001).

Other studies also have suggested that the patterns of goal endorsement in students are related to academic outcomes for children and adolescents. For example, Meece and Holt (1993) examined the mastery, ego, and work-avoidant goal orientations of fifth and sixth graders. Using cluster analysis, they found that students who were high in mastery goals (compared to the other two goal orientations) displayed the most positive achievement profiles (e.g., strategy usage, grades, achievement test scores), whereas students who were high on mastery and ego goals did not do as well in school. Students who reported being low on both mastery goals and ego goals displayed the most discouraging achievement profiles.
Chapter 8. The Development of Goal Orientation

Goal Orientations and School Practices

Results of various studies of variables related to goal orientations have extremely important implications for the education of children and adolescents. Research clearly indicates that schools have a profound impact on students (e.g., Maehr, 1991; Roeser, Eccles, & Sameroff, 2000). In terms of goal orientation theory, goal orientations are related strongly to the practices of schools (Anderman & Maehr, 1994; Anderman, Maher, & Midgley, 1999; Maehr, 1991; Maehr & Anderman, 1993; Midgley, Anderman, & Hicks, 1995). When school personnel use practices that encourage social comparison and make ability differences salient, performance goals become significant; in contrast, when school personnel use practices that focus on improvement, effort, and self-comparisons, mastery goals become prominent (Maehr & Midgley, 1996). These issues will be addressed in greater detail later in this chapter.

THE DEVELOPMENT OF GOAL ORIENTATION

There are a number of important reasons for examining goal orientations from a developmental perspective. First and foremost, as evidenced by the chapters in this book, there is a tremendous amount of evidence indicating that academic motivation develops and changes over time. The intrinsic curiosity toward just about everything that is often noticed in very young children often gives way to interest in specific types of activities during later childhood and adolescence. In addition, a growing concern with grades and performance almost inevitably develops as students move through the educational system (Anderman & Maehr, 1994; Eccles, Lord, & Midgley, 1991; Eccles, Wigfield, Harold, & Blumenfeld, 1993; Harter, 1975).

Second, children, adolescents, and adults all move through different educational contexts at different times. These contexts have powerful effects on student motivation, and it is only in recent years that researchers have developed methods for carefully and appropriately measuring and understanding the effects of these contexts on educational outcomes (e.g., Lee, 2000; Turner & Meyer, 2000). Consequently, the inclusion of educational contexts into studies of goal orientation inherently must allow for developmental perspectives, since the nature of these contexts changes throughout development.

Third, developmental studies allow for the corroboration of various cross-sectional studies, as well as for an in-depth examination of the results of more sophisticated longitudinal studies.

GOAL ORIENTATIONS IN YOUNG CHILDREN

There has been very little research on achievement goal orientations with young children. Nevertheless, some related work suggests that motivational
variables are important even among very young children. For example, Stipek and her colleagues (e.g., Stipek, Recchia, & McClintic, 1992) have demonstrated that preschool-aged children experience feelings of shame in the face of failure at some tasks; thus, even children who have not yet attended school may have some concerns about their performance and abilities.

However, work by Carol Dweck and her colleagues has examined young children's motivational patterns. Dweck has distinguished between two patterns of learning: a mastery-oriented pattern and a helpless pattern (e.g., Diener & Dweck, 1978; Dweck & Reppucci, 1973). The helpless pattern "is characterized by an avoidance of challenge and a deterioration of performance in the face of obstacles" (Dweck & Leggett, 1988, p. 256), whereas the mastery-oriented pattern "involves the seeking of challenging tasks and the generation of effective strategies in the face of obstacles" (Dweck & Leggett, 1988, p. 257). Dweck's research on achievement goal orientations differs from that of others in that Dweck focuses on goal orientations as a function of individual characteristics, whereas others (e.g., Ames, 1992; Maehr & Midgley, 1996) focus on goal orientations partially as a function of school contexts.

Although early studies suggested that young children probably do not experience the helpless pattern (e.g., Miller, 1985), there now is evidence that young children may experience the helpless motivational pattern. Cain and Dweck (1991) asked children in first, third, and fifth grades to complete various puzzles. The children also were classified as either helpless or mastery oriented. Results indicated that children in all three grade levels (including the first graders) could be classified as helpless. Helpless children in the first and third grades also reported lower expectations for the future. Most importantly, first graders who were classified as helpless were more likely than those classified as mastery oriented to be concerned with the performance outcomes of tasks (e.g., the observable results), rather than on controllable processes.

Dweck also has argued that individuals' beliefs about intelligence are related to motivational patterns. Perceiving one's intelligence as a fixed, unchangeable entity has been associated with performance goals, whereas perceiving one's intelligence as malleable and changeable (incremental) has been associated with mastery (learning) goals (Dweck & Leggett, 1988). Such beliefs about intelligence have been identified in children as young as kindergartners (Bempechat, London, & Dweck, 1991). In Dweck et al.'s (1991) study of motivational development in first, third, and fifth graders, they found that by the fifth grade, the helpless children were more likely than the mastery-oriented children to hold an entity view of intelligence; however, this relation did not emerge in the younger children. Dweck and her colleagues suggest that developmentally, an early focus on academic outcomes (e.g., grades or high marks) may be related to the subsequent development of an entity view of intelligence.

Dweck and her colleagues have demonstrated that young children respond differently to learning- and performance-oriented tasks. Specifically, they argue that students with learning goals will display a mastery pattern of moti-
vation regardless of their confidence in their ability to perform a task (e.g., Smiley & Dweck, 1994). However, students with performance goals will demonstrate the helpless pattern when their confidence is low and an attenuated mastery-oriented pattern when their confidence is high. This model has been validated on children between the ages of 4 and 11 years (Buhrans & Dweck, 1995; E. Elliott & Dweck, 1988; Smiley & Dweck, 1994).

These findings are particularly important in that they indicate that the pursuit of learning goals may help young children to overcome fears about their abilities in certain domains. This finding has extremely important implications for educators who work with young children and develop curricula for elementary school aged children. As noted by Harter (1981), perceptions of academic self-competence in children should lead to intrinsic motivation. Specifically, a young child who lacks confidence in his or her ability in a particular domain (e.g., reading) might benefit greatly from learning to read in a classroom where learning goals are supported and encouraged. Indeed, for such students, a focus on learning goals might lead to long-term benefits, such as increased self-efficacy in reading and greater valuing of reading.

More recently, Mueller and Dweck (1998) studied the effects of praise on elementary students’ achievement goals. Specifically, they found that fifth graders who were praised for their intelligence after engaging in problem-solving tasks were more likely to endorse performance goals on future tasks; in contrast, fifth graders who were praised for effort when engaging in these tasks were more likely to endorse mastery goals on future tasks. In addition, children who had been praised for their intelligence were interested in learning about the performance of other students, whereas students who were praised for effort were interested in finding out about strategies that could be used in problem solving.

Other important research on goal orientations in children has been conducted by Carole Ames and her colleagues. In one study, Ames (1984) asked children to solve puzzles in performance-oriented (competitive) conditions and in mastery-oriented (noncompetitive) conditions. The children who were in the performance-oriented condition were more likely to make attributions to ability, whereas the children in the mastery-oriented condition were more likely to make attributions to personal effort.

Nicholls and his colleagues (e.g., Nicholls, Cobb, Wood, Yackel, & Patashnick, 1990) examined task and ego orientation in mathematics in second graders. They presented the questionnaires to these young students by reminding them that their opinions would be assessed on the basis of their responses and that it was natural for opinions to vary. Results indicated that endorsement of a task (mastery) orientation was related to believing that success in math was related to effort, and to cooperation with peers. Endorsement of an ego (performance) orientation was related to believing that success was related to ability and to beating others. Interestingly, perceived ability was unrelated to either goal orientation.
Results of a recent study indicated that children's valuing of mathematics and reading declined when students' teachers reported emphasizing performance goals (Anderman et al., 2001). In this study, children completed measures developed by Eccles and her colleagues regarding their valuing of mathematics and reading. In addition, teachers reported their use of mastery and performance-oriented instructional strategies. Using hierarchical linear modeling techniques (which separated between and within classroom variance), the results indicated that the valuing of both reading and mathematics declined over the course of one academic year when students' teachers reported that they emphasized performance-oriented instructional strategies (e.g., emphasizing high test scores and emphasizing that students should try to do as well as the students who were doing best in the class). Interestingly, changes in the valuing of mathematics and reading were unrelated to the reported use of mastery-oriented instructional strategies (e.g., emphasizing personal improvement).

Nevertheless, other research indicates that performance goals may not always be related to negative outcomes in children. Using a large sample of fifth and sixth grade students, Meece and her colleagues (Meece, Blumenfeld, & Hoyle, 1988) found that both mastery goals and ego-social goals (demonstrating one's ability) were related positively to active cognitive engagement in science. Using structural equation modeling, they found that intrinsic motivation positively predicted task mastery goals and negatively predicted ego-social goals. In turn, task mastery goals positively and strongly predicted active cognitive engagement, whereas ego-social goals positively predicted cognitive engagement, but not nearly as strongly as did task mastery goals.

**Self-Perceptions of Ability and Goal Orientations during Childhood**

Because achievement goals deal primarily with the reasons why students engage in academic tasks, one must always consider students' self-evaluations of ability. Indeed, if a student chooses to engage in an academic task to pursue mastery goals, then it is probable that the student perceives that he or she has the ability to work on the given task.

Nicholls and his colleagues have demonstrated that children's conceptions of ability change throughout childhood. Young children tend to equate effort with ability, whereas at about the age of 11 or 12 children are able to differentiate among concepts such as effort, ability, and performance (Nicholls, 1978; Nicholls & Miller, 1984).

Self-perceptions of ability may be related to goal orientations in children in important ways. Dweck (1986) has argued that when performance goals are salient, children's perceptions of their own ability must be high before children will be willing to engage in a complex, challenging task. When children...
are young and equate effort with ability, they may be more likely to be mastery oriented, because ability and effort are essentially the same thing. In contrast, as children approach early adolescence and develop distinct understandings of concepts such as ability, effort, and performance, they may be more likely to consider the adoption of performance goals (since “performance” now has more actual meaning for these older children).

**Summary**

Research on goal orientations in children is growing. What is becoming increasingly clear is that young children are aware of and responsive to environments that emphasize either mastery or performance goals, and that children respond in predictable ways to these environments. Because it is particularly difficult to administer survey measures to young children, researchers often have had to utilize different types of methodologies with children. Nevertheless, the research on goal orientations during adolescence delineates more predictable patterns of change.

**GOAL ORIENTATION IN ADOLESCENTS**

In recent years, there has been much research on goal orientations during adolescence. Much of this research is based on Eccles and Midgley’s discussion of stage—environment fit (Eccles & Midgley, 1989). Specifically, Eccles, Midgley, and their colleagues have argued and demonstrated that for many early adolescents, learning environments change dramatically as students make the transition from elementary to middle school. The typical middle school often provides the type of environment that is antithetical to the developmental needs of early adolescents; consequently, during early adolescence, there often is a decline in academic motivation (see also Anderman & Maehr, 1994).

**Influences of Goal Orientations during Adolescence**

Does endorsing a mastery or performance goal orientation lead to different outcomes for students? Do mastery and performance goals interact in the prediction of various outcomes? Research indicates that during the adolescent years, the endorsement of mastery and performance goals becomes particularly important because they lead to different types of outcomes for adolescents. These outcomes include the use of differing cognitive processing strategies, different effects on learning, and differing approaches to academic tasks.

Nolen (1988) examined the relations between adolescents’ goal orientations and the use of deep- and surface-level cognitive processing strategies.
A task (mastery) orientation was related strongly and positively to the use of deep processing strategies, and less strongly to the use of surface processing strategies. In contrast, an ego (performance) orientation was related positively only to the use of surface-level strategies.

In a similar study with high school students, Nolen and Haladyna (1990) found that the belief in the usefulness of deep-processing strategies was related more strongly to a task (mastery) orientation than to an ego (performance) orientation. Similar results have been found in other studies (e.g., Anderman & Young, 1994).

Some research indicates that performance goals are related to some seemingly negative outcomes for early adolescents. For example, Urdan, Midgley, and Anderman (1998) examined a large sample of fifth graders and found that the use of self-handicapping strategies (e.g., fooling around, procrastinating, etc.) was related to perceptions of an emphasis on performance goals in the classroom, as well as to teachers' reported use of performance-oriented instructional strategies. Other studies (e.g., Midgley, Arunkumar, & Urdan, 1996) also indicate that performance goals may be related to the use of self-handicapping strategies in older adolescents.

Anderman, Griesinger, and Westerfield (1998) found that during adolescence, academic cheating may be related to performance goals and to extrinsic goals. Using a sample of sixth, seventh, and eighth graders, Anderman et al. found that self-reported cheating behaviors in science were predicted by perceiving the science classroom as extrinsically oriented and by perceiving the school as a whole as performance oriented. In addition, they found that the beliefs in the acceptability of cheating were related to personal extrinsic goals and to perceiving science classrooms as being extrinsically oriented.

Pajares and his colleagues (Pajares, Britner, & Valiante, 2000) examined mastery, performance–approach, and performance–avoid goal orientations in middle school students, in both writing and science. One of the more intriguing results of this study was that performance–approach goals were unrelated to the writing beliefs (e.g., self-efficacy, self-concept, self-regulation) of sixth grade students, but were related to writing self-efficacy and science self-concept in seventh grade students, and to self-regulatory beliefs in eighth grade students. These results suggest that performance–approach goals may serve a more adaptive purpose for older adolescents than for younger adolescents (see also Middleton & Midgley, 1997).

### Classroom Influences on Goal Orientations during Adolescence

Much of the research on achievement goal orientations during adolescence has focused on students' perceptions of the goal stresses in the classroom.
As Eccles and Midgley (1989) noted, there is a shift in the focus of classrooms as students move from elementary schools into middle schools. Middle schools often are perceived as focusing more on ability and performance, whereas elementary schools are perceived as focusing more on mastery and intrinsic motivation.

Research indicates that students' endorsements of mastery and performance goals changes during the adolescent years. In general, research indicates that students tend to endorse performance goals more, and mastery goals less, as they progress through adolescence. This is particularly true of research on changes in students’ goal orientations across the transition from elementary to middle school (e.g., Anderman & Anderman, 1999). In general, results of a number of studies indicate that these shifts in goal orientations are due to changes in school goal stresses.

Midgley and her colleagues have done much of the research on classroom goal stresses during adolescence. In a cross-sectional study, Midgley et al. (1995) compared elementary and middle school teachers and students. They found that elementary school teachers reported using instructional practices that emphasized mastery goals more than did middle school teachers. In addition, elementary school teachers endorsed mastery-oriented achievement goals for their students more than did middle school teachers.

In a longitudinal study, Anderman and Midgley (1997) examined students’ perceptions of classroom goal structures (mastery and performance) before and after the transition to middle school. Students reported that their fifth grade elementary school classes were more focused on mastery than were their sixth grade middle school classes. In addition, they found that in sixth grade, students perceived their classrooms as more focused on performance and ability than during the fifth grade.

In a different longitudinal study, Anderman and Anderman (1999) found that changes in individual achievement goals across the middle school transition were related to perceptions of the classroom goal structures in middle school classrooms. An increase in a perceived classroom mastery-goal structure across the transition from elementary to middle school was associated with perceiving both a mastery and a performance goal structure in post-transition classrooms; in contrast, an increase in performance goals across the transition was related to perceptions of a performance goal structure in middle school classrooms.

Ames and Archer (1988) found that perceptions of an emphasis on mastery goals in the classroom were related to positive outcomes, such as the use of more effective strategies, and the belief that academic success is due to effort. In contrast, perceptions of an emphasis on performance goals in their classrooms were related to negative outcomes, such as attributing failure to a lack of ability.
Why Does the Goal Stress Change after the Middle School Transition?

The aforementioned studies converge on the finding that students tend to become more concerned with grades and relative ability, and somewhat less concerned with mastery, effort, and improvement, after the middle school transition. This leads to the obvious question of why these changes occur after this transition.

Various reviews of the literature on motivation during early adolescence (e.g., Anderman & Maehr, 1994; Eccles &Midgley, 1989; Eccles et al., 1993) indicate that the instructional practices of middle school teachers differ from those of elementary school teachers. Indeed, the methods used to instruct middle school students differ greatly from those used to teach elementary school students. Eccles, Midgley, and their colleagues (1993) have described the middle school environment as being characterized by rules and discipline, poor relationships between teachers and students, few opportunities for students to be involved in making decisions, and strict grading practices. In addition, the use of ability grouping increases after the middle school transition. This stands in sharp contrast to the environment of the elementary school, which is characterized by strong teacher–student relationships, opportunities to pursue creative projects, and less grouping of students by ability (Eccles & Midgley, 1989; Eccles et al., 1993). However, current research suggests that the quality of teacher–student relationships after the middle school transition may be improving. For example, a large-scale study by Midgley and her colleagues (Midgley et al., 1998) found that students did not report a decline in the quality of teacher–student relationships over the middle school transition.

For many students, this transition represents an abrupt change. Consequently, it is not terribly surprising that students often become more focused on performance and relative ability after the transition; indeed, they are entering an environment that stresses these factors as being extremely important. Thus, for many students, the purpose of learning changes from one of inquiry and learning for intrinsic reasons to learning in order to demonstrate ability and to prove that one is academically competent (Maehr & Midgley, 1996).

In addition, the differences in classroom goal stresses between elementary and middle schools may in part have historical explanations. Junior high schools were created early in the twentieth century to meet the unique developmental needs of early adolescents. Junior high schools eventually became “miniature high schools” (Clark & Clark, 1993, p. 450). The middle school movement of the 1960s through 1980s eventuated in many arguments regarding appropriate grade configurations for schools serving early adolescents, but in actuality there was little difference in the practices used by middle school and junior high school educators (Lounsbury, 1991). With the release of the Carnegie Council's report on the education of young adolescents in 1989 (Carnegie Council on Adolescent Development, 1989), the focus returned to
the developmental needs of early adolescents—specifically, the need to critically examine the practices used by schools serving early adolescents.

Consequently, different schools probably emphasize different goals for their students, due in part to historical changes within school systems. Some schools clearly still operate in the “mini high school” mode and probably are highly focused on grades and performance, whereas other schools have adopted recommendations of developmental researchers (e.g., Eccles & Midgley, 1989; Maehr & Midgley, 1996) and have instituted reforms that permit a focus on the true developmental needs of early adolescents. Nevertheless, there is still a need for systematic research that carefully describes relations between school reform efforts, school policies, and goal stresses.

School Influences on Goal Orientations during Adolescence

Maehr (1991) has written extensively about the “psychological environment” of the school. Specifically, Maehr and his colleagues (e.g., Anderman & Maehr, 1994; Maehr & Buck, 1993; Maehr & Midgley, 1991, 1996) have demonstrated that school environments can be perceived as promoting both a mastery-oriented culture and a performance-oriented culture. A mastery-oriented school environment is one in which students perceive that all students can learn, that understanding what is learned is of primary importance, and that errors are acceptable as long as learning is occurring. In contrast, a performance-oriented school culture is one in which students perceive that the students who get the highest grades are treated better than other students, that teachers care more about the “smart” students than about other students and that the school has given up on some of its students.

Research has demonstrated that students’ perceptions of the school culture are related to personal goal orientations during adolescence. Using a large sample of eighth graders, Roeser, Midgley, and Urdan (1996) demonstrated that students who perceived their school as stressing performance (ability) goals were likely to endorse personal performance (relative ability) goals; however, perceiving the environment as being mastery (task) focused was related to the endorsement of personal mastery (task) goals. Results of this study also indicated that the endorsement of personal performance goals was related to self-consciousness, whereas the endorsement of personal mastery goals was related to academic self-efficacy and to positive school affect.

Midgley et al. (1995) used samples of both elementary and middle school students to examine the relations between perceived school culture and personal achievement goal orientations. They found that perceptions of a school-wide performance goal stress positively predicted personal performance goals in elementary school students, and positively predicted personal performance goals and negatively predicted personal mastery goals in middle school stu-
Perceptions of a schoolwide mastery goal stress positively predicted personal mastery goals and self-efficacy in elementary students, whereas they positively predicted both performance and mastery goals (as well as self-efficacy) in middle school students.

Changing School Goal Stresses during Adolescence

Maehr, Midgley, and their colleagues have argued that the specific policies and practices of school can be changed in order to promote a mastery-focused school culture over a performance-focused school culture (Maehr & Midgley, 1996). Specifically, they demonstrated that when the policies and practices of schools are aligned with the tenets of goal orientation theory, students will adopt personal achievement goals in line with the theory. Maehr, Midgley, and their colleagues worked collaboratively with both elementary and middle schools in order to change policies and practices so that the schools would be perceived by students as emphasizing mastery goals, rather than performance goals.

Results of their work with one middle school are particularly relevant to the present chapter. In their research, they met weekly for 3 years with administrators, parents, and teachers from a middle school in a working-class community in the Midwest. The purpose of these meetings was to critically examine the practices of the school, and to examine strategies that school personnel could use to move the school culture more toward a mastery-oriented culture and away from being perceived as a performance-oriented culture. Some of the instructional practices that were changed over the course of the collaboration included the incorporation of team teaching into the sixth and seventh grades, some use of interdisciplinary units, increased opportunities for students to make important decisions, an emphasis on recognizing students for effort and improvement, the elimination of some ability grouping, and the creation of a "small house" or school within the school (Anderman, Maehr, & Midgley, 1999; Maehr & Midgley, 1991, 1996).

In order to evaluate the collaboration, students were followed longitudinally for 3 years. All students in the district were surveyed while in elementary school, in the fifth grade (prior to the middle school transition). Students then moved into one of two middle schools—the middle school collaborating with the university, and another middle school that had agreed to serve as a comparison school.

Students completed the Patterns of Adaptive Learning Survey (PALS) (Midgley et al., 1998; Midgley et al., 2000) at the end of the fifth grade (prior to the transition to middle school), and again at the end of the sixth and seventh grades (after the transition). Analyses indicated that students who attended the comparison school reported higher levels of personal performance goals and personal extrinsic goals after the transition from elementary to middle school than did the students in the collaborating school. In addition, students who
moved into the comparison school exhibited an increase in their perceptions of an emphasis on performance goals between the fifth and sixth grades (Anderman, Maehr, & Midgley, 1999).

**Goal Orientations in High School**

Surprisingly little research has examined longitudinal changes in achievement goals across the transition from middle school to high school. During the high school years, many students consider dropping out of school altogether, whereas others consider future employment opportunities or college. Consequently, because some students are focused on getting into college, one might hypothesize that high schools would be perceived as being even more performance oriented and less mastery oriented than middle schools.

However, recent research suggests otherwise. Midgley and her colleagues followed a large sample of students from middle school to high school and examined changes in their perceptions of the goals stressed in their schools. High school students reported no change in their perceptions of an emphasis on mastery goals, and they reported a decrease in their perception of an emphasis on performance goals after the high school transition (Gheen, Hruda, Middleton, & Midgley, 2000). They also found that changes in perceptions of the goal stress across the transition were related in predictable ways to other variables. For example, when students perceived an increased emphasis on mastery after the transition, they also reported using self-regulatory strategies more (Gheen, et al., 2000).

**DISCUSSION**

Individuals' achievement goal orientations change in a variety of ways throughout childhood, adolescence, and adulthood. However, research is delivering more and more evidence that these changes are a function of changing learning environments, rather than enduring personality traits of individual learners.

As students move through most educational systems, the systems tend to demand more and more of students. Whereas early childhood programs and elementary schools often do not focus on children's ability and on ability differences, as students progress through elementary school and move into secondary schools, there is an increasing emphasis on ability, performance, and grades (Eccles & Midgley, 1989). Not all students move on to college, but those who do often face highly competitive environments there (Harackiewicz, Barron, Carter, Lehto, & Elliot, 1997). Because students tend to adopt the types of achievement goal orientations fostered by their learning environments (Maehr, 1991), students often tend to endorse performance goals more as they progress through the educational system. Nevertheless, recent
research suggests that these changes may at least level off as students enter high school (Middleton, Midgley, Gheen, & Kumar, in press).

Unfortunately, we lose many students to this system. Dropout rates are exceedingly high (e.g., Supik & Johnson, 1999; U.S. Department of Education, 1990). Although research does indicate that performance goals can be adaptive and useful, particularly for college students (e.g., Elliot & Harackiewicz, 1996), one must question the utility of performance goals within a larger developmental perspective. Whereas performance goals may be adaptive for college students, one must remember that college students are in many ways the products of elementary, middle, and high schools; those students who make it to college have learned to adapt to the increasingly performance-oriented demands of schooling. Nevertheless, one cross-sectional study suggests that older adults may be more mastery oriented than are younger adults. Using a sample of college students of diverse ages (17 through 59), Burley, Turner, and Vitulli (1999) examined mastery (learning) and performance goal orientations. Results suggested that the older students were more mastery oriented than were the younger students. These researchers suggest that the grouping of older learners with younger learners may lead to increased mastery goals in the younger learners.

What about those students who do not enroll in college? What about those who do not graduate from high school? In our view, this is an important future direction for goal orientation theory research. From a developmental perspective, we know that goal orientations change as a function of changing school environments. However, we do not know much about students' abilities to cope with and adapt to these changes. We hope that future research will examine these important developmental issues.

New Areas of Inquiry

Research on the development of goal orientation is still nascent; indeed, there are many promising areas for exploration. Two areas that are particularly promising are (1) the study of gender and ethnic differences in goal orientations and (2) the study of domain differences in goal orientations.

Gender and Ethnic Differences in Goal Orientations

Few studies have addressed gender and ethnic differences in goal orientations. Although some research has been done on these topics, there are still areas that have not been explored in depth. Nevertheless, there is some research that indicates that achievement goal orientations may operate differently for different students.

There are mixed results regarding gender differences in goal orientations. Results of some studies suggest that males are more performance oriented
than females; however, results of other studies indicate no gender differences. For example, Middleton and Midgley (1997) found no relation between gender and mastery, performance-approach, and performance-avoid goals, in a large sample of adolescents. However, Anderman and Anderman (1999) found that male adolescents were more performance-approach oriented than females. Using a different sample, Anderman and Midgley (1997) also found that males were more performance-approach oriented than females. Other studies (e.g., Roeser, Midgley, & Urdan, 1996; Ryan, Hicks, & Midgley, 1996) also support the notion that males are more performance oriented than are females.

Although the results of studies of gender and goal orientations appear to be mixed, there appears to be growing evidence that in many learning situations, males may be somewhat more performance oriented than females. Nevertheless, the null results of other studies involving gender differences (e.g., Middleton & Midgley, 1997) indicate clearly that additional research is necessary.

How might these discrepancies in gender differences be resolved? Perhaps the most promising solution would be for researchers to develop studies specifically designed to examine gender differences. Most of the studies of gender differences that have been reported in the literature were not designed specifically to examine gender differences; rather, they were designed to study goal orientations, and gender often was included as a control variable. Thus the gender differences that have been reported often have been intriguing, but they often have been sidebars in those research studies, rather than the actual purpose of the research. In addition, most gender differences that have been reported have been the result of survey-based studies. It would be very fruitful for researchers to incorporate more qualitative methods into gender-related studies of goal orientations, to better understand females' and males' reasons for adopting various goal orientations.

Even less research has been conducted to examine ethnic differences in achievement goal orientations. Middleton and Midgley (1997) examined differences between African-American and European-American adolescents. They found no differences for either performance-approach or performance-avoid goals. However, they found a small relation between ethnicity and mastery (task) goals, with African-American students reporting slightly higher mastery goals than did European-American students.

One important area for future inquiry will be studies that involve students of other ethnicities. Would similar or different patterns emerge for Latino-American, Asian-American, or Native American students? As an example, research from an attribution theory perspective has suggested that students of Asian descent often attribute academic achievement to effort rather than to ability (e.g., Holloway, 1988). Consequently, Asian-American students who exhibit this attributional style might react differently from European-American students to mastery- and performance-oriented environments. Indeed, it is possible that Asian-American students who attribute success to effort are
immune to some of the possible negative effects of performance–avoid goal orientations. This will be a very important area for future studies.

**Domain Differences**

Another area that has only received minimal attention to date concerns the domain specificity of achievement goals. Some researchers measure goal orientation using general constructs that assess students’ overall goal orientations across a variety of learning situations, whereas others assess goal orientations within specific academic subject domains. In recent years, studies have tended to include more domain specific than general measures of goal orientation, given the growing sensitivity to the importance of instructional contexts (Anderman & Anderman, 2000). Researchers have examined goal orientations in various subject domains, including mathematics, English, social studies, science, writing, current events, and psychology (e.g., Anderman & Midgley, 1997; Anderman & Johnston, 1998; Harackiewicz et al., 1997; Pajares, Britner, & Valiante, 2000; Wolters, Yu, & Pintrich, 1996).

Nevertheless, little research to date has examined developmental shifts in achievement goals across a variety of domains. However, there is evidence suggesting that this may be a particularly important area for future research. For example, Duda and Nicholls (1992) examined goal orientations in schoolwork and sports in a sample of high school students and found some important domain differences in the relations of goal orientations to other indices. In their study, regression analyses indicated that a task orientation was a significant and positive predictor of satisfaction and enjoyment with schoolwork, whereas perceived ability was a strong positive predictor of satisfaction and enjoyment of sports.

Wolters et al. (1996) examined goal orientations in middle school students for English, math, and social studies. They found no differences in the ways that goal orientations predicted outcomes across the three subject domains. However, other studies of adolescents using goal orientation theory do suggest that some domain differences may exist. For example, Anderman and Midgley (1997) found that adolescents reported being more performance oriented in math than in English. Anderman and Midgley (1997) also found an interaction of time by subject (math and English) by ability for perceiving classrooms as being mastery oriented. Specifically, they found that perceptions of classrooms as being mastery oriented declined between the fifth and sixth grades for both high and low ability students in math, but not in English. One of the differences between the findings from the Wolters et al. (1996) study and the Anderman and Midgley (1997) study was that the Wolters study examined students’ personal goal orientations, whereas the Anderman and Midgley study examined personal goals and perceptions of the classroom goal stresses.
CONCLUSIONS

There are still many unanswered questions in the study of the development of achievement goal orientations. The purpose of this chapter was to outline some of the developmental knowledge base that is available, in order to examine developmental trends.

One important and optimistic note is that students clearly adopt the types of goals that are stressed in their schools and classrooms. This is a note of "optimism" because research also has demonstrated that classroom and school goal structures can be manipulated (Maehr & Midgley, 1996). Consequently, the continued study of the development of achievement goals must be interwoven with the study of classroom and school contexts (e.g., Turner & Meyer, 2000).

References


Chapter 8. The Development of Goal Orientation


