Self-Efficacy for Reading and Writing: Influence of Modeling, Goal Setting, and Self-Evaluation

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Abstract:
Perceived self-efficacy, or students' personal beliefs about their capabilities to learn or perform behaviors at designated levels, plays an important role in their motivation and learning. Self-efficacy is a key mechanism in social cognitive theory, which postulates that achievement depends on interactions between behaviors, personal factors, and environmental conditions. Self-efficacy affects choice of tasks, effort, persistence, and achievement. Sources of self-efficacy information include personal accomplishments, vicarious experiences, social persuasion, and physiological indicators. At the outset of learning activities, students have goals and a sense of self-efficacy for attaining them. Self-evaluations of learning progress sustain self-efficacy and motivation. Research on academic learning is summarized, showing how modeling, goal setting, and self-evaluation affect self-efficacy, motivation, and learning. Suggestions for applying these ideas to teaching are provided.

Article:
Researchers and practitioners interested in student motivation and learning in academic settings are focusing increasingly on the role of students' thoughts and beliefs during learning. This focus contrasts with prior views stressing students' pre-existing skills and abilities. Although these factors are important, by themselves they are insufficient to explain the variations in motivation and learning among students with comparable skills and abilities.

In this article I discuss theory, research, and applications relevant to one type of personal belief: perceived self-efficacy. Self-efficacy refers to beliefs about one's capabilities to learn or perform behaviors at designated levels (Bandura, 1986, 1997). Research shows that self-efficacy predicts students' academic motivation and learning (Pajares, 1996; Schunk, 1995, 1996).

Within this context, I present research evidence showing how social models, goal setting, and self-evaluation affect self-efficacy, motivation, and learning. Modeling refers to patterning one's thoughts, beliefs, actions, strategies, and behaviors after those displayed by one or more models. A goal, or what one is consciously trying to accomplish, provides a standard against which people can gauge their progress (Schunk, 1990). Self-evaluation comprises (a) self judgments of present performance through comparisons with one's goal and (b) self-reactions to those judgments by deeming performance noteworthy, unacceptable, and so forth (Schunk, 1996). Research has demonstrated the effects of these processes on students' academic achievement in various domains (Schunk & Zimmerman, 1998). The article concludes with implications of the theory and research for educational practice.

THEORETICAL BACKGROUND
Social Cognitive Theory
Self-efficacy is part of a larger theoretical framework known as social cognitive theory, which postulates that human achievement depends on interactions between one's behaviors, personal factors (e.g., thoughts and beliefs), and environmental conditions (Bandura, 1986, 1997). With respect to the link between personal factors

and behaviors, much research shows that students' self-efficacy beliefs influence such achievement behaviors as choice of tasks, effort, persistence, and achievement (Schunk, 1995). Conversely, students' behaviors can alter efficacy beliefs. As students work on tasks, they note their progress toward their goals. Goal progress and accomplishment convey to students that they are capable of performing well, which enhances self-efficacy for continued learning.

Students' behaviors and classroom environments also are related. Consider a teacher who directs students' attention by stating, "Look at this." Environmental influence on behavior occurs when students direct their attention without conscious deliberation. Students' behaviors also can alter their environments. When students answer questions incorrectly, the teacher may reteach the lesson differently rather than continue with the original material.

Personal and environmental factors affect one another. As an example of how beliefs can affect the environment, consider students with high and low self-efficacy for learning. Those with high efficacy may view the task as a challenge and work diligently to master it, thereby creating a productive classroom environment. Those with low efficacy may attempt to avoid the task, which can disrupt the classroom. The influence of environment on thought is evident when teachers give students feedback (e.g., "That's right, you really are good at this."), which raises self-efficacy and sustains motivation for learning.

Self-Efficacy
Sources and Consequences
Self-efficacy is hypothesized to influence task choice, effort, persistence, and achievement (Bandura, 1986, 1997; Schunk, 1995). Compared with students who doubt their learning capabilities, those who feel efficacious for learning or performing a task participate more readily, work harder, persist longer when they encounter difficulties, and achieve at a higher level.

Learners obtain information to appraise their self-efficacy from their actual performances, vicarious (observational) experiences, forms of persuasion, and physiological reactions. Students' own performances offer reliable guides for assessing efficacy. In general, successes raise efficacy and failures lower it. Students acquire efficacy information by socially comparing their performances with those of others (models, peers). Others who are similar offer the best basis for comparison (Schunk, 1987). Students who observe similar peers perform a task are apt to believe that they, too, are capable of accomplishing it.

Learners often receive information from parents, teachers, coaches, and peers that they are capable of performing a task ("You can do this."). Positive persuasive information raises efficacy, although this increase will be temporary if students subsequently perform poorly. Students also acquire efficacy information from such physiological indicators as sweating and heart rate. Symptoms signaling anxiety may convey that one lacks skills; experiencing decreased anxiety may raise self-efficacy.

Self-efficacy is important but not the only influence on achievement. Other important influences are skills, knowledge, outcome expectations, and perceived value. High efficacy will not produce competent performances when requisite skills and knowledge are lacking. Outcome expectations are beliefs about the anticipated consequences of actions. They are important because students do not engage in activities they believe will lead to negative outcomes. Value refers to students' beliefs about the importance of learning or what use will be made of what they learn. Value beliefs affect behavior because learners show little interest in activities they do not value (Wigfield, 1994).

Self-efficacy and Academic Learning
Table 1 portrays the operation of self-efficacy during academic learning. At the outset of a learning activity, students have goals and a sense of self-efficacy for learning (Schunk, 1995; Schunk & Ertmer, 2000; Zimmerman, 2000). Learners' self-efficacy sustains their motivation and promotes learning. During periods of self-reflection, they evaluate their progress by comparing their performances to their goals. Self-evaluations of

progress enhance efficacy and maintain motivation. Learners may decide to continue pursuing their goals, modify them, or set new ones.

TABLE 1 Self-Efficacy and Academic Learning

Self-Efficacy for Learning Goals		Task Engagement Self-Evaluations		Self-Efficacy Motivation Achievement
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Although low self-efficacy is detrimental for learning, effective learning does not require that efficacy be extremely high. At overly high levels, students may feel overconfident and slack off in their efforts, which can retard learning (Salomon, 1984). Assuming that learners feel efficacious about surmounting problems, holding some doubt about whether one will succeed can mobilize effort and lead to better use of strategies than will feeling overly confident.

Many students suffer from low self-efficacy for improving their literacy skills. In such areas as reading comprehension and essay writing, it is difficult to ascertain how much one is improving. Students typically rely on teacher feedback for progress information, and they may not be able to reliably gauge progress on their own. Interventions designed to improve students' acquisition of literacy skills must also address their self-efficacy for learning to influence their learning and motivation.

Modeling

Modeling is an important means of promoting learning and self-efficacy (Schunk, 1987). Observational learning through modeling occurs when observers display new behaviors that prior to modeling had no probability of occurrence, even with motivational inducements in effect (Bandura, 1986; Schunk, 1987). Students must attend to a model, code the information for retention, be capable of producing the demonstrated pattern, and be motivated to perform it. An important form of observational learning occurs through cognitive modeling, which incorporates modeled explanations and demonstrations with verbalizations of the model's thoughts and reasons for performing the actions (Meichenbaum, 1977). Teachers often employ cognitive modeling when teaching new skills and concepts.

The functional value of behavior, or whether modeled actions result in success or failure, reward or punishment, exerts strong effects on observer modeling. Modeled behaviors are likely to be performed if they lead to rewarding outcomes but unlikely if they result in punishment.

Modeling informs and motivates. Models provide information about what sequence of actions will lead to success and which actions have undesirable consequences. Models can raise efficacy among observers who are apt to believe that they, too, will be successful if they follow the same behavioral sequence. Models also motivate observers to perform the same behavior themselves or to avoid performing it. Perceived similarity between model and observer—in such attributes as age, gender, ethnicity, and perceived competence—is hypothesized to be an important source of information for gauging the appropriateness of behavior and forming outcome expectations. The more alike observers are to models, the greater is the probability that similar actions by observers are socially appropriate and will produce comparable results. Similarity is highly influential when students have experienced difficulties and have doubts about performing well. These points suggest that peer models may, under certain conditions, have more desirable effects on students than teacher models.

Goal Setting

Goals are integral components of motivation and learning. At the start of a learning activity, students have such goals as acquiring skills and knowledge, finishing work, and making good grades. During the activity, students observe, judge, and react to their perceptions of goal progress (Bandura, 1988; Locke & Latham, 1990; Schunk, 1990). When people make a commitment to attempt to attain a goal, they are likely to compare their performances with the goals as they work on the task. Self-evaluations of progress raise self-efficacy and sustain motivation. A perceived discrepancy between performance and the goal may create dissatisfaction and raise effort.

Goals can be acquired through modeling. People are more likely to attend to models when they believe the modeled behaviors will help them attain their goals. Academically oriented learners are apt to attend to teachers demonstrating new skills, whereas children with strong social goals may be more attentive to actions by popular peers. Goals motivate people to exert extra effort and persist, and they focus people's attention on relevant task features and the strategies that will help them accomplish the task (Locke & Latham, 1990).

By themselves, goals do not automatically enhance learning and motivation. Rather, the goal properties of specificity, proximity, and difficulty are important. Goals that incorporate specific performance standards are more likely to enhance learning and activate self-evaluative reactions than are such general goals as "Do your best" (Locke & Latham, 1990). Specific goals also promote efficacy because it is relatively easy to evaluate progress toward an explicit goal.

Goals can be distinguished by how far they extend into the future. Compared with temporally distant goals, proximal, short-term goals are closer at hand, achieved quickly, and result in greater motivation and higher efficacy. Proximal goals (e.g., those that can be achieved in a few minutes) are especially influential with young children who cannot fully represent distant outcomes in thought.

Difficulty is important because people expend greater effort to attain a difficult goal than an easier one. But the benefits of difficulty are limited. People do not attempt to attain what they believe is impossible. Goals that are perceived as moderately difficult raise motivation and convey a clear sense of progress, which raises efficacy.

Goal effects also may depend on whether the goal denotes a learning or performance outcome (Meece, 1991). A learning goal refers to what knowledge and skills students are to acquire; a performance goal denotes what task students are to complete (Dweck & Leggett, 1988). Although most goal setting research has focused on rate or quantity of performance, there is increasing emphasis on learning processes and strategies (Schunk, 1996).

For learners to evaluate their progress, it is essential that they receive goal progress feedback, especially when they cannot derive reliable information on their own. This situation is commonly found in reading and writing when students have trouble determining whether their writing style or text comprehension is improving. Thus, a teacher might tell a learner, "Nice paragraph. Your ideas link together well. Your writing is improving." Goal progress feedback also will raise self-efficacy and motivation when it conveys that learners are competent and can continue to improve by working diligently.

Self-evaluation
Critically important for maintaining self-efficacy for learning and performing well are positive self-evaluations of one's capabilities and progress in skill acquisition. These raise self-efficacy and motivation because students believe they are learning and capable of further progress (Schunk, 1990).

Low self-evaluations will not necessarily diminish self-efficacy and motivation if students believe they can succeed but that their present approach is ineffective (Bandura, 1986). Such students may work harder, persist longer, adopt what they believe is a better strategy, or seek help from teachers and peers (Schunk, 1996; Schunk & Ertmer, 2000). These and other achievement-related activities are likely to lead to success (Zimmerman, 2000; Zimmerman & Martinez-Pons, 1992).

An issue for teachers is that many students do not spontaneously self-evaluate their capabilities. One way that teachers can highlight progress is to have students periodically assess their progress in skill acquisition. When performance improvements become salient, students will feel efficacious and motivated to learn and thereby learn better. For students who are not proficient in making self-evaluations, teachers may need to give them prompts for assessing performance and gauging goal progress (e.g., "How much better do you think you are in dividing fractions now compared with how you were when the lesson began?").

RESEARCH EVIDENCE

This section summarizes research on reading and writing that highlights the important roles played by self-efficacy, modeling, goal setting, and self-evaluation. The focus is on studies that implemented programs designed to improve students' academic skills or that sought to clarify processes in their acquisition. There exists much non-intervention research that is not summarized here but which highlights the central role of self-efficacy and writing motivation and achievement (e.g., Pajares & Johnson, 1994; Shell, Murphy, & Bruning, 1989; Zimmerman & Martinez-Pons, 1990).

Reading Achievement

Much research in achievement settings attests to the effectiveness of goals for raising students' motivation, self-efficacy, and achievement (Bandura, 1988; Locke & Latham, 1990; Schunk, 1990). In an early study using goal-setting conferences, Gaa (1973) assigned elementary-school children to one of three conditions: conferences with goal setting, conferences without goal setting, and no conferences. Conference children met with the researcher weekly to receive feedback on the previous week's attainment and a list of reading skills, after which they selected those they would try to master next. In the conferences-without-goals condition, children received general information about material covered previously and what would be covered next. All children set goals at the end of the study. Conference children demonstrated the highest reading achievement and the smallest discrepancy between goals set and mastered, which implies that goal setting promoted accurate self-evaluations of capabilities. Gaa (1979) replicated these results and found that goal-conference students took greater responsibility for their successes than children without goal setting. Although Gaa had researchers hold conferences with children, they easily can be done by teachers.

Tollefson, Tracy, Johnsen, Farmer, & Buenning (1984) taught goal setting to junior high school students with learning disabilities. Each week for four weeks students selected moderately difficult spelling words. Following the study, students predicted how many words they would spell correctly on a test. The goal and a study plan were stated in a written contract, which was designed to help students take responsibility for their learning and highlight how effort raises achievement. Compared with students in a no-treatment control group, goal-setting students evaluated effort to be a more important cause of success and set more realistic goals as measured by the discrepancy between goals and performance. The specific short-term goals used in this study are helpful in raising self-efficacy and motivation for students who have learning problems.

Schunk and Rice (1989) explored the effects on self-efficacy and reading comprehension of process (learning) and product (performance) goals among students with low reading skills. Students were taught a strategy to answer comprehension questions (finding main ideas) by an adult teacher who cognitively modeled (explained and demonstrated) the strategy. At the start of each lesson, some students received a process goal—learn to use the strategy, whereas others were given a product goal—answer questions. Children in a third (control) group were advised to work productively. Compared with control students, process and product goal children judged self-efficacy for answering comprehension questions higher, and process goal children demonstrated better comprehension.

A follow-up study (Schunk & Rice, 1991) explored the role of feedback that linked performance with strategy use, conveying the idea that students were making progress toward their goal of learning to use the strategy to answer questions. At the beginning of each lesson, students were given a product goal of answering questions, a process goal of learning to use the strategy, or a process goal plus progress feedback on how well they were learning the strategy. Goal-plus-feedback students demonstrated higher self-efficacy and comprehension than did learners in the process and product goal conditions. Process goal and goal-plus-feedback students evaluated their progress in strategy learning greater than did product-goal children. These remedial readers benefited from explicit feedback on their progress toward attainment of a process (learning) goal.

Another source of evidence on the important role played by self-efficacy in reading achievement comes from studies investigating strategy instruction and strategy value feedback. Much research shows that teaching

students to use learning strategies enhances achievement outcomes, motivation, and self-evaluations of capabilities (Pressley et al., 1990; Schunk & Zimmerman, 1998).

Schunk and Rice (1987) found in two experiments that multiple sources of information stressing the value of a strategy to identify main ideas raise achievement outcomes. Children received a goal of learning to use the strategy and were given general strategy information, specific strategy-value information, specific plus general information, or no strategy-value information. General information emphasized the value of the strategy for all reading tasks; specific information conveyed the value of using the strategy to identify main ideas. In a follow-up study, children received strategy-effectiveness feedback, specific strategy-value information, or feedback plus specific information. The feedback linked children's performances with strategy use. In each study, the combined treatment best promoted self-efficacy and comprehension. This treatment may have led children to believe that they could affect their comprehension, which can raise self-efficacy. Teachers can provide multiple sources of strategy value information by explaining the conditions under which the strategy is useful and giving feedback when students use the strategy on how it improved their performance.

Further evidence that remedial readers benefit from information on strategy usefulness comes from two studies by Schunk and Rice (1992). Children with reading skill deficiencies received comprehension instruction on main ideas. In the first study, some students were taught a comprehension strategy, while others received strategy instruction by observing an adult model and receiving strategy-value feedback linking strategy use with improved performance; control children received comprehension instruction without the strategy. In the second study, children were taught the strategy or received instruction without strategy training; they then were given comprehension instruction on locating details. Some were taught how to modify the strategy for the new comprehension task, whereas others did not employ the strategy on details. Children who received strategy-value feedback (Study 1) and strategy-modification instruction (Study 2) demonstrated the highest self-efficacy, comprehension, strategy use, and transfer of the strategy to the new comprehension task.

Research also supports the idea that students receiving remedial reading services benefit from procedures that require extensive cognitive activity and inform them about strategy usefulness (Schunk & Rice, 1993). Children received instruction on locating main ideas and were taught and verbalized a strategy. With increased practice, some children faded their overt verbalizations to silent (inner) speech. Half of the children in the fading and no-fading conditions periodically received feedback linking strategy use with improved performance. The no-fading/no-feedback condition scored lower than the other three conditions on self-efficacy and achievement. Fading plus feedback led to higher self-evaluations of strategy use, compared with the fading-only and feedback-only conditions, and to higher comprehension compared with the feedback-only condition. Fading is very useful in classrooms, because when several students verbalize aloud, it can distract others from their work.

Writing Achievement
Research in the field of writing also shows that self-efficacy promotes motivation and learning and that modeling, goal setting, and self-evaluation exert desirable effects. For example, Schunk and Swartz (1993a, 1993b) explored the effects of learning goals and progress feedback on children's self-efficacy, achievement, and use of writing strategies. The context was instruction on writing paragraphs. Average-ability and gifted children received instruction over 20 days that covered descriptive, informative, narrative story, and narrative descriptive paragraphs. Teachers taught children a 5-step strategy (e.g., choose a topic to write about, pick the main idea) through cognitive modeling (explanation and modeled demonstration), after which children received guided and independent practice.

Children were assigned to a process (learning) goal, process goal plus progress feedback, product (performance) goal, or general goal (instructional control) condition. Process-goal and process-goal plus progress feedback children were informed that their goal was to learn to use the strategy to write paragraphs. Product-goal students were told their goal was to write paragraphs; general-goal students were advised to do their best. Process-goal plus feedback students periodically received verbal feedback from the adult that linked strategy use with improved writing performance.

Results showed that the process-goal plus feedback condition was the most effective and that there also were some benefits of providing a process goal alone. Process-goal plus feedback students generally outperformed product- and general-goal students on self-efficacy and writing achievement, and they evaluated the effectiveness of the strategy positively and demonstrated the greatest amount of strategy use. Gains made by process-goal plus feedback students were maintained after six weeks and generalized to types of paragraphs on which students had received no instruction. Goals and feedback are easily given by teachers and integrate well with normal lesson planning.

Graham and Harris (1989a, 1989b; Sawyer, Graham, & Harris, 1992) have shown that teaching students with learning disabilities a strategy for writing essays or stories improves self-efficacy and composition and that gains are maintained following instruction and generalize to other content and settings. The strategy was taught via a cognitive modeling procedure, in which models (1) explained and demonstrated the strategy while applying its steps to write stories, and (2) conveyed strategy value by emphasizing that use of the strategy would help students attain their learning goals. Other critical components of the procedure are student self-monitoring of their writing performance (e.g., checking on their progress) and self-evaluation of their progress by comparing goals with their achievement. Again, these components are integrated easily into normal instructional practices.

APPLICATIONS TO TEACHING

The preceding ideas suggest many potential applications to teaching. One suggestion is to make extensive use of models in the classroom. Especially important are cognitive models who verbalize their actions and thoughts as they work on a task. At times, it may be important to use coping models who initially portray learning difficulties and express low self-efficacy for learning but gradually improve as a result of persistence, effort, effective strategy use, and verbalizing coping statements (e.g., "I have to pay better attention") (Schunk, Hanson, & Cox, 1987). Coping models contrast with mastery models who perform the task flawlessly from the outset. Students who typically learn easily in school may benefit from mastery models, but those who often have difficulty may perceive themselves more similar in competence to the coping models.

Models are teachers or peers who explain and demonstrate skills, but they also are part of cooperative groups where students work jointly on a task. Duties are divided so each group member is responsible for some part of the task (Cohen, 1994). Peer groups often are used in writing, where members critique each other's writing and offer suggestions for improvement (Fitzgerald, 1987). Group members serve as models for one another, especially when they explain their writing process.

A second application is to build self-efficacy by having students experience learning progress and success, exposing them to successful models, and providing encouraging feedback substantiated by success. Teachers can incorporate these sources of efficacy information into the classroom by teaching effective strategies to use during learning, employing social models, and providing progress feedback (e.g., "You are doing much better"). Although actual performance successes exert strong effects on self-efficacy, the vicarious and persuasive sources also are effective.

Third, teachers need to develop students' goal-setting and self-evaluation skills. Direct instruction on goal setting may be necessary until students can set realistic goals for themselves. Learning complex skills occurs slowly and often is frustrating. Students require strategies to keep them motivated to stay on task. The perception of progress in learning is crucial. Students may need to be taught a self-evaluative strategy; for example, by completing a self-report scale where students rate their progress, after which they discuss these ratings with teachers who provide feedback.

Finally, teachers need to provide instruction on effective learning strategies. This can be done through a combination of modeling, guided practice, independent practice, and peer conferences. For example, an important component of writing is revising. Compared with average writers, better writers spend a longer time revising what they have written (Byrnes, 1996). Yet many students are reluctant to revise. This may reflect low

motivation—the belief that revising will not significantly improve writing— as well as lack of knowledge of how to evaluate the quality of writing and thereby know what to revise.

Teachers can model a strategy for assessing the clarity of writing. They could state their purpose in writing, then as they read aloud what they have written, they evaluate whether it is focused on the purpose, clearly stated, and comprehensible. Students can be given examples of writing to revise, as well as encouraged to write their own essays and revise them. Peer conferences can be used in which peers provide feedback and suggestions for revisions.

Teaching students strategies to improve their writing builds self-efficacy. The belief that students know what to do to succeed at an academic task raises their efficacy for performing well. Further, the use of peer models provides an important vicarious source of efficacy information.

CONCLUSION

Regardless of the content area, it is imperative that teachers develop and sustain their students' self-efficacy for learning. Research shows that self-efficacy and achievement can be enhanced through instructional methods that incorporate modeled strategies, progress feedback, goal setting, and self-evaluations of progress. To the extent that these and other efficacy-enhancing methods are employed in classrooms, teachers will foster academic achievement and motivation for continued learning among all learners.

REFERENCES

Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1988). Self-regulation of motivation and action through goal systems. In V. Hamilton, G. H. Bower, & N. H. Frijda (Eds.), Cognitive perspectives on emotion and motivation (pp. 37-61). Dordrecht, The Netherlands: Kluwer Academic Publishers.

Bandura, A. (1997). Self-efficacy: The exercise of control. New York: Freeman.

Byrnes, J. P. (1996). Cognitive development and learning in instructional contexts. Boston: Allyn & Bacon.

Cohen, E. G. (1994). Restructuring the classroom: Conditions for productive small groups. Review of Educational Research, 64, 1-35.

Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. Psychological Review, 95, 256-273.

Fitzgerald, J. (1987). Research on revision in writing. Review of Educational Research, 57, 481-506.

Gaa, J. P. (1973). Effects of individual goal-setting conferences on achievement, attitudes, and goal-setting behavior. Journal of Experimental Education, 42, 22-28.

Gaa, J. P. (1979). The effects of individual goal-setting conferences on academic achievement and modification of locus of control orientation. Psychology in the Schools, 16, 591-597.

Graham, S., & Harris, K. R. (1989a). Components analysis of cognitive strategy instruction: Effects on learning disabled students' compositions and self-efficacy. Journal of Educational Psychology, 81, 353-361.

Graham, S., & Harris, K. R. (1989b). Improving learning disabled students' skills at composing essays: Self-instructional strategy training. Exceptional Children, 56, 201-214.

Locke, E. A., & Latham, G. P. (1990). A theory of goal setting and task performance. Englewood Cliffs, NJ: Prentice-Hall.

Meece, J. (1991). The classroom context and students' motivational goals. In M. L. Maehr & P. R. Pintrich (Eds.), Advances in motivation and achievement (Vol. 7, pp. 261-285). Greenwich, CT: JAI Press.

Meichenbaum, D. (1977). Cognitive behavior modification: An integrative approach. New York: Plenum.

Pajares, F. (1996). Self-efficacy beliefs in achievement settings. Review of Educational Research, 66, 543-578.

Pajares, F., & Johnson, M. J. (1994). Confidence and competence in writing: The role of self-efficacy, outcome expectancy, and apprehension. Research in the Teaching of English, 28, 313-329.

Pressley, M., Woloshyn, V., Lysynchuk, L. M., Martin, V., Wood, E., & Willoughby, T. (1990). A primer of research on cognitive strategy instruction: The important issues and how to address them. Educational Psychology Review, 2, 1-58.

Salomon, G. (1984). Television is "easy" and print is "tough": The differential investment of mental effort in learning as a function of perceptions and attributions. Journal of Educational Psychology, 76, 647-658.

Sawyer, R. J., Graham, S., & Harris, K. R. (1992). Direct teaching, strategy instruction, and strategy instruction with explicit self-regulation: Effects on the composition skills and self-efficacy of students with learning disabilities. Journal of Educational Psychology, 84, 340-352.

Schunk, D. H. (1987). Peer models and children's behavioral change. Review of Educational Research, 57, 149-174.

Schunk, D. H. (1990). Goal setting and self-efficacy during self-regulated learning. Educational Psychologist, 25, 71-86.

Schunk, D. H. (1995). Self-efficacy and education and instruction. In J. E. Maddux (Ed.), Self-efficacy, adaptation, and adjustment: Theory, research, and application (pp. 281-303). New York: Plenum Press.

Schunk, D. H. (1996). Goal and self-evaluative influences during children's cognitive skill learning. American Educational Research Journal, 33, 359-382.

Schunk, D. H., & Ertmer, P. A. (2000). Self-regulation and academic learning: Self-efficacy enhancing interventions. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), Handbook of self-regulation (pp. 631-649). San Diego: Academic Press.

Schunk, D. H., Hanson, A. R., & Cox, P. D. (1987). Peer model attributes and children's achievement behaviors. Journal of Educational Psychology, 79, 54-61.

Schunk, D. H., & Rice, J. M. (1987). Enhancing comprehension skill and self-efficacy with strategy value information. Journal of Reading Behavior, 19, 285-302.

Schunk, D. H., & Rice, J. M. (1989). Learning goals and children's reading comprehension. Journal of Reading Behavior, 21, 279-293.

Schunk, D. H., & Rice, J. M. (1991). Learning goals and progress feedback during reading comprehension instruction. Journal of Reading Behavior, 23, 351-364.

Schunk, D. H., & Rice, J. M. (1992). Influence of reading-comprehension strategy information on children's achievement outcomes. Learning Disability Quarterly, 15, 51-64.

Schunk, D. H., & Rice, J. M. (1993). Strategy fading and progress feedback: Effects on self-efficacy and comprehension among students receiving remedial reading services. Journal of Special Education, 27, 257-276.

Schunk, D. H., & Swartz, C. W. (1993a). Goals and progress feedback: Effects on self-efficacy and writing achievement. Contemporary Educational Psychology, 18, 337-354.

Schunk, D. H., & Swartz, C. W. (1993b). Writing strategy instruction with gifted students: Effects of goals and feedback on self-efficacy and skills. Roeper Review, 15, 225-230.

Schunk, D. H., & Zimmerman, B. J. (Eds.) (1998). Self-regulated learning: From teaching to self-reflective practice. New York: Guilford Press.

Shell, D. F., Murphy, C. C., & Bruning, R. H. (1989). Self-efficacy and outcome expectancy mechanisms in reading and writing achievement. Journal of Educational Psychology, 81, 91-100.

Tollefson, N., Tracy, D. B., Johnsen, E. P., Farmer, A. W., & Buenning, M. (1984). Goal setting and personal responsibility training for LD adolescents. Psychology in the Schools, 21, 224-233.

Wigfield, A. (1994). The role of children's achievement values in the self-regulation of their learning outcomes. In D. H. Schunk & B. J. Zimmerman (Eds.), Self-regulation of learning and performance: Issues and educational applications (pp. 101-124). Hillsdale, NJ: Lawrence Erlbaum Associates.

Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), Handbook of self-regulation (pp. 13-39). San Diego: Academic Press.

Zimmerman, B. J., & Martinez-Pons, M. (1990). Student differences in self-regulated learning: Relating grade, sex, and giftedness to self-efficacy and strategy use. Journal of Educational Psychology, 82, 51-59.

Zimmerman, B. J., & Martinez-Pons, M. (1992). Perceptions of efficacy and strategy use in the self-regulation of learning. In D. H. Schunk & J. L. Meece (Eds.), Student perceptions in the classroom (pp. 185-207). Hillsdale, NJ: Lawrence Erlbaum Associates.