

Goal Setting and Self-Efficacy During Self-Regulated Learning

By: [Dale H. Schunk](#)

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Abstract:

This article focuses on the self-regulated learning processes of goal setting and perceived self-efficacy. Students enter learning activities with goals and self-efficacy for goal attainment. As learners work on tasks, they observe their own performances and evaluate their own goal progress. Self-efficacy and goal setting are affected by self-observation, self-judgment, and self-reaction. When students perceive satisfactory goal progress, they feel capable of improving their skills; goal attainment, coupled with high self-efficacy, leads students to set new challenging goals. Research is reviewed on goal properties (specificity, proximity, difficulty), self-set goals, progress feedback, contracts and conferences, and conceptions of ability. Ways of teaching students to set realistic goals and evaluate progress include establishing upper and lower goal limits and employing games, contracts, and conferences. Future research might clarify the relation of goal setting and self-efficacy to transfer, goal orientations, and affective reactions.

Article:

Self-regulated learning occurs when students activate and sustain cognitions and behaviors systematically oriented toward attainment of learning goals. Self-regulated learning processes involve goal-directed activities that students instigate, modify, and sustain (Zimmerman, 1989). These activities include attending to instruction, processing and integrating knowledge, rehearsing information to be remembered, and developing and maintaining positive beliefs about learning capabilities and anticipated outcomes of actions (Schunk, 1989).

This article focuses on two self-regulated learning processes: goal setting and perceived self-efficacy. As used in this article, a *goal* is what an individual is consciously trying to accomplish, *goal setting* involves establishing a goal and modifying it as necessary, and *perceived self-efficacy* refers to beliefs concerning one's capabilities to attain designated levels of performance (Bandura, 1986, 1988). I initially present a theoretical overview of self-regulated learning to include the roles of goal setting and self-efficacy. I discuss research bearing on these processes, and conclude with implications for educational practice and future research suggestions.

THEORETICAL OVERVIEW

Subprocesses of Self-Regulated Learning

Investigators working within a social cognitive learning theory framework view self-regulation as comprising three subprocesses: self-observation, self-judgment, and self-reaction (Bandura, 1986; Kanfer & Gaelick, 1986; Schunk, 1989). A model highlighting goal setting and self-efficacy is portrayed in Figure 1. Students enter learning activities with such goals as acquiring knowledge, solving problems, and finishing workbook pages. Self-efficacy for goal attainment is influenced by abilities, prior experiences, attitudes toward learning, instruction, and the social context. As students work on tasks, they observe their performances, evaluate goal progress, and continue their work or change their task approach. Self-evaluation of goal progress as satisfactory enhances feelings of efficacy; goal attainment leads students to set new challenging goals.

Self-observation. Self-observation, or deliberate attention to aspects of one's behaviors, informs and motivates. Behaviors can be assessed on such dimensions as quality, rate, quantity, and originality. The information gained is used to gauge goal progress. Self-observation also can motivate behavioral change. Many students with poor study habits are surprised to learn that they waste much study time on nonacademic activities. Sustained motivation depends on students believing that if they change their behavior they will experience better outcomes, valuing those outcomes, and feeling they can change those habits (high self-efficacy).

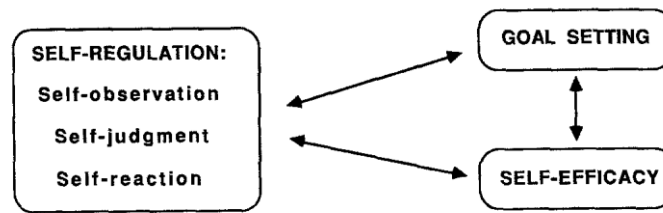


FIGURE 1 Social cognitive processes involved in self-regulated learning.

Self-observation is aided with self-recording, where behavior instances are recorded along with such features as time, place, and duration of occurrence (Mace, Belfiore, & Shea, 1989). Without recording, observations may not faithfully reflect behaviors due to selective memory. Behaviors should be observed close in time to their occurrence and on a continuous basis rather than intermittently.

Self-judgment. Self-judgment involves comparing present performance with one's goal. Self-judgments are affected by the type of standards employed, goal properties (discussed in next section), importance of goal attainment, and performance attributions.

Learning goals may reflect absolute or normative standards (Bandura, 1986). Absolute standards are fixed (e.g., complete six workbook pages in 30 min). Grading systems often are based on absolute standards (A = 90-100, B = 80-89). Normative standards employ performances by others. Social comparison of one's performances with those of peers helps one determine behavioral appropriateness. Standards are informative; comparing one's performance with standards informs one of goal progress. Standards also can motivate when they show that goal progress is being made.

Self-judgments can be affected by the importance of goal attainment. When individuals care little about how they perform, they may not assess their performance or expend effort to improve (Bandura, 1986). Judgments of goal progress are more likely to be made for goals one personally values.

Attributions, or perceived causes of outcomes (successes, failures), influence achievement beliefs and behaviors (Weiner, 1985). Achievement outcomes often are attributed to such causes as ability, effort, task difficulty, and luck (Frieze, 1980; Weiner, 1979). Children view effort as the prime cause of outcomes (Nicholls, 1984). With development, ability attributions become increasingly important. Whether goal progress is judged as acceptable depends on its attribution. Students who attribute successes to teacher assistance may hold low self-efficacy for good performance if they believe they cannot succeed on their own. If they believe they lack ability, they may judge learning progress as deficient and be unmotivated to work harder.

Self-reaction. Self-reactions to goal progress motivate behavior (Bandura, 1986). The belief that one's progress is acceptable, along with anticipated satisfaction of goal accomplishment, enhances self-efficacy and motivation. Negative evaluations will not decrease motivation if individuals believe they are capable of improving (Schunk, 1989). Motivation will not improve if students believe they lack the ability to succeed and increased effort will not help.

Individuals routinely make such rewards as work breaks, new clothes, and nights on the town contingent on task progress or goal attainment. Anticipation of rewards enhances motivation and self-efficacy. Compensations raise efficacy when they are tied to accomplishments. If students are told that they will earn rewards based on

what they accomplish, they become instilled with a sense of efficacy for learning. Self-efficacy is validated as students work at a task and note their own progress; receipt of the reward then becomes a symbol of the progress made.

Goal Setting

The effects of goals on behavior depend on their properties: specificity, proximity, and difficulty level (Bandura, 1988; Locke, Shaw, Saari, & Latham, 1981). Goals incorporating specific performance standards are more likely to enhance learning and activate self-evaluations than general goals (i.e., "Do your best"). Specific goals boost performance by greater specification of the amount of effort required for success and the self-satisfaction anticipated. Specific goals promote self-efficacy because progress is easy to gauge.

Proximal goals result in greater motivation than distant goals. It is easier to gauge progress toward a proximal goal, and the perception of progress raises self-efficacy. Proximal goals are especially influential with young children, who do not represent distant outcomes in thought.

Goal difficulty, or the level of task proficiency required as assessed against a standard, influences the effort learners expend to attain a goal. Assuming requisite skills, individuals expend greater effort to attain difficult goals than when standards are lower. Learners initially may doubt whether they can attain difficult goals, but working toward them builds self-efficacy.

Self-Efficacy

Self-efficacy is hypothesized to influence choice of activities, effort expended, and persistence (Bandura, 1986). Students who hold low self-efficacy for learning may avoid tasks; those who judge themselves efficacious are more likely to participate. When facing difficulties, self-efficacious learners expend greater effort and persist longer than students who doubt their capabilities.

Students acquire information about their self-efficacy in a given domain from their performances, observations of models (i.e., vicarious experiences), forms of social persuasion, and physiological indexes (e.g., heart rate, sweating). Information acquired from these sources does not influence efficacy automatically but is cognitively appraised. Efficacy appraisal is an inferential process; persons weigh and combine the contributions of personal and situational factors. In assessing self-efficacy, students take into account such factors as perceived ability, expended effort, task difficulty, teacher assistance, other situational factors, and patterns of successes and failures.

The notion that personal expectations influence behavior is not unique to self-efficacy theory. Self-efficacy is conceptually similar to such other constructs as perceived competence, expectations of success, and self-confidence. One means of distinguishing constructs involves the generality of the constructs. Some constructs (e.g., self-concept, self-esteem) are hypothesized to affect diverse areas of human functioning. Though perceptions of efficacy can generalize, they offer the best prediction of behavior within specific domains (e.g., self-efficacy for acquiring fraction skills, learning to skim in reading, balancing chemical equations).

Another distinction can be made between capabilities and outcomes. Self-efficacy refers to perceived capabilities. Many theories stress outcome expectations, or anticipated consequences of actions. Rotter's (1966) locus of control emphasizes perceived control over outcomes. People differ as to whether they believe that outcomes occur independently of how they behave (external control) or that outcomes are contingent on their behaviors (internal control). Positive outcome expectations are important but may not translate into behavior. Students who believe the teacher will praise them for scoring high on a test (positive outcome expectation) may not study much if they doubt their capabilities for performing well (low self-efficacy).

Expectancy-value theories stress that behavior is a joint function of beliefs about outcomes of actions and how much those outcomes are valued (Atkinson, 1964; Vroom, 1964). People are likely to act when they believe an action will produce positive outcomes and when they value those outcomes. The addition of value is important;

however, students who value high grades and believe that diligent studying will produce them may not be motivated to study if they doubt their capabilities to study effectively. In summary, self-efficacy theory differs from other views in its emphasis on students' beliefs concerning their capabilities to employ effectively the skills and knowledge necessary to attain outcomes.

LITERATURE REVIEW

In this section, I review research exploring goal setting and self-efficacy. Some of these studies were not primarily directed toward developing self-regulated learners, but they examined how self-regulated learning processes affected achievement beliefs and behaviors. Interested readers should consult Bandura (1986) for a detailed review of self-regulation research.

Goal Specificity

In one study, children lacking division skills received instruction and practice over a series of sessions (Schunk, 1983a). Children were given a specific goal (number of problems to complete) or a general goal (work productively). Within each condition, half of the children were given comparative information on the number of problems others had completed which matched the session goal — to convey that goals were attainable. Goals raised self-efficacy, and children who received goals and comparative information demonstrated the highest self-efficacy and skill. Providing children with a goal and information that is attainable may increase self-efficacy for learning, which can raise instructional session performance and lead to greater skill acquisition.

Schunk (1984) compared the effects of goals with those of rewards. Children received long division instruction and practice over sessions: Some were offered rewards commensurate with the number of problems completed, others pursued goals (number of problems to complete), and children in a third condition received rewards and goals. The three conditions promoted self-regulated learning during the instructional sessions; rewards plus goals resulted in the highest self-efficacy and division performance. Combining goals with rewards provided children with two sources of information to use in gauging learning progress.

Goal Proximity

Bandura and Schunk (1981) gave children with low subtraction skills instruction and practice over seven sessions using seven sets of material. Some children pursued a proximal goal of completing one set each session; a second group received a distant goal of completing all sets by the end of the last session; a third group was advised to work productively (general goal). Proximal goals boosted self-regulated learning during the independent practice portions of the instructional sessions, and resulted in the highest subtraction skill, self-efficacy, and intrinsic interest (number of problems solved during a free-choice period). The distant goal resulted in no benefits compared with the general goal.

Manderlink and Harackiewicz (1984) gave adult subjects normative information on word puzzles and asked them to set a proximal goal (for this puzzle) or a distant goal (for all puzzles). Expectations for goal attainment were assessed during the pretest and twice during the trials; following the experiment, subjects judged perceived competence. Proximal and distant goals did not differentially affect performance, but proximal goal subjects judged expectation of goal attainment and perceived competence as being higher. Distant goals led to higher ratings of interest, perhaps because subjects viewed proximal goal setting as extrinsic pressure.

Goal Difficulty

During a long division instructional program, Schunk (1983b) gave children difficult (but attainable) or easier goals of completing a given number of problems. To preclude children from perceiving the goals as too difficult, half in each condition were told they could attain the goal ("You can work 25 problems"). The other half received comparative information indicating that similar peers completed that many problems. Children who received difficult goals achieved greater self-regulated learning; children who received difficult goals and direct-goal attainment information displayed the highest self-efficacy and skill.

Goal difficulty during brainstorming was explored by Locke, Frederick, Lee, and Bobko (1984). College students gave uses for common objects. Some subjects were taught a strategy to generate uses; others were told to give only good uses (antibrainstorming). Midway through the study, half of the subjects in each condition were assigned a difficult goal; others set their own goals. On subsequent trials, all subjects set their own goals. Subjects rated goal commitment and self-efficacy for generating different numbers of uses for common objects. Students assigned difficult goals set higher goals and generated more uses than those initially allowed to set their own goals. When subjects set their own goals, self-efficacy was related positively to goal level and commitment. Strategy training influenced self-efficacy indirectly through its effects on goal level. Similar findings were reported by Garland (1985).

Self-Set Goals

In a study designed to assess the effects of self-set goals (Schunk, 1985), learning-disabled sixth graders received subtraction instruction and practice over a series of sessions. Some set goals, others had comparable goals assigned, and those in a third condition worked without goals. Self-set goals led to the highest self-efficacy and subtraction performance. Children in the two goal conditions demonstrated greater self-regulated learning during the sessions compared with no-goal subjects. Self-set children judged confidence for attaining goals higher than the assigned-goals subjects.

Horn and Murphy (1985) assigned college students classified as high or low in achievement motivation to self-set or assigned-goal conditions. Self-set subjects decided how many anagrams they could solve; assigned-goal subjects were given comparable goals. Subjects judged confidence for goal attainment—a measure analogous to self-efficacy. Students high in achievement motivation performed equally well under the two goal conditions; self-set goals enhanced the performances of students low in achievement motivation. No differences emerged in confidence, perhaps because of restricted variability in this measure.

Goal Progress Feedback

Schunk and Rice (1987, 1989, 1990) taught remedial readers a strategy to answer reading comprehension questions. Two experiments showed that multiple sources of information stressing the value of the strategy to find main ideas raised achievement outcomes (Schunk & Rice, 1987). Children received a goal of learning to use the strategy. In the first experiment, children were given general information, specific strategy-value information, specific plus general information, or no strategy-value information. General information emphasized strategy value for all reading tasks; specific information conveyed strategy value for finding main ideas. In the second experiment, children received strategy-effectiveness feedback, specific strategy-value information, or feedback plus specific information. The feedback linked performances with strategy use. In each study, the combined treatment promoted self-efficacy and skill the best. This treatment may have engendered in children a sense of control over their comprehension, which can raise self-efficacy. Becoming a strategic reader requires combining skills with positive beliefs (Paris, Lipson, & Wixson, 1983).

In the Schunk and Rice (1989) study, children received a product goal of answering questions, a process goal of learning to use the strategy, or no goal. Compared with no-goal students, process- and product-goal children judged self-efficacy higher, and process-goal children demonstrated higher skill. On a measure of goal perceptions, process-goal children placed the greatest emphasis on learning to use the strategy and judged becoming a better reader more important than product-goal children. These latter findings are important because poor readers have low expectations for success. When students believe they can become better readers, they are apt to self-regulate their behaviors to help them accomplish that goal (Paris & Wixson, 1986).

Follow-up research explored whether providing feedback on progress in learning the strategy enhanced achievement outcomes (Schunk & Rice, 1990). Children were assigned to a product-goal, process-goal, or process-goal plus progress-feedback condition. Each of the latter children received feedback linking strategy use with improved comprehension performance. The combined condition outperformed the other two conditions on self-efficacy and skill. On a measure of perceived progress in strategy learning, process-goal and combined conditions did not differ, but each judged progress higher than product-goal subjects.

Bandura and Cervone (1983) found benefits of progress feedback with college students as they operated an ergometer by alternatively pushing and pulling arm levers that resisted their efforts. Some subjects pursued a goal of increasing performance by 40% over baseline, others were given feedback that they had increased performance by 24%, subjects in a third condition received goals and feedback, and controls received neither goals nor feedback. Goals combined with feedback raised performance the best and instated a sense of self-efficacy for goal attainment that predicted subsequent effort. In follow-up research (Bandura & Cervone, 1986), subjects received a goal of 50% improvement above baseline. Following their performance, subjects received false feedback indicating that they had achieved an increase of 24%, 36%, 46%, or 54%. Self-efficacy was lowest for the 24% group and highest for the 54% group. After subjects set goals for the next session and performed the task again, effort expenditure related positively to goals and self-efficacy across all conditions.

Contracts and Conferences

Tollefson and colleagues taught goal setting to learning-disabled students and explored the role of attributions (Tollefson, Tracy, Johnsen, & Chatman, 1986; Tollefson, Tracy, Johnsen, Farmer, & Buenning, 1984). Attribution training programs often emphasize effort because it is amenable to change. Ascribing prior failures to insufficient effort raises self-efficacy and exerts motivational effects. When students believe added effort will produce success, they persist longer and achieve at a higher level (Weiner, 1979). Effort attribution for successes also will motivate students if they believe they can continue to expend the effort necessary to succeed.

Each week for 4 weeks, junior high students selected spelling words or math problems from a list of moderately difficult words or problems (Tollefson et al., 1984). Following the study, students predicted how many they would answer correctly on a test. The goal and a study plan were stated in a written contract, which was intended to help students take personal responsibility for their actions and highlight that effort enhances achievement. After each test, students charted their scores and made an attribution for the outcome. Compared with no-treatment controls, goal-setting students gave more effort attributions and set more realistic goals as measured by the goal-performance discrepancy.

Tollefson et al. (1986) gave adolescents weekly resource-room contracts that detailed work to be completed and a study plan, which emphasized effort as a cause of outcomes. Students monitored their progress and made attributions for successes and failures to attain goals. Rate of completing assignments in resource rooms increased and generalized to regular classes. Following training, the students attributed successes to effort, and they attributed failures to lack of effort, bad luck, and task difficulty.

In the context of reading instruction, Gaa (1973) assigned children to one of three conditions: goal-setting conferences, conferences without goal setting, no conferences. Goal-conference children met with the researcher weekly and received a list of reading skills, selected those they would attempt to accomplish, and were given feedback on their previous week's accomplishments. In the conferences without goals, children received general information about material covered previously and what would be covered next. All students participated in a goal conference the last week and judged certainty of goal attainment. Goal-conference children attained the highest reading achievement, judged certainty of goal attainment the lowest, and showed the smallest discrepancy between goals set and mastered during the last week. Goal conferences promoted accurate capability perceptions, and the certainty measure (analogous to self-efficacy) may reflect students' greater awareness of reading skills and difficulty in attaining them. Gaa (1979) replicated these achievement results and found that goal-conference students took greater responsibility for their successes than children without goal setting.

Conceptions of Ability

Although attribution theorists note that ability levels can fluctuate, ability is generally viewed as a relatively fixed quality (Weiner, 1979). Recent work in achievement motivation, however, has identified individual differences in "conceptions of ability" or beliefs about the nature of ability and the role it plays in achievement. Some students hold an entity (fixed) view (ability is a global and stable trait), whereas others hold an incremental view (ability comprises skills and increases with experience; Dweck, 1986; Dweck & Leggett,

1988). Wood and Bandura (1989) found that ability conceptions affected goal setting and self-efficacy. Business school students participated in difficult managerial decision making and were told that decision making is developed through practice (acquirable skill) or that it reflects basic cognitive abilities (entity). Students set production goals and judged self-efficacy for levels ranging from 30% better to 40% worse than standard. Over trials, acquirable-skill subjects maintained high self-efficacy, set more challenging goals, demonstrated more efficient use of rules, and produced higher employee performances; entity subjects showed a decline in self-efficacy.

SELF-REGULATED LEARNING AND EDUCATIONAL PRACTICE

Self-regulatory skills require that students' goals be realistic challenging but attainable. With realistic goals, students can monitor progress and decide on a different task approach if their present one is ineffective. Self-efficacy is increased as students note progress, attain goals, and set new challenges. Goals set too high or too low do not enhance self-regulated learning or achievement beliefs. Students perceive little progress toward lofty goals, which lowers self-efficacy and leads them to work halfheartedly and give up readily when they encounter difficulty. Easy goals do not produce high self-efficacy because they do not inform students about what they are capable of doing.

Realistic goal setting often requires training. In the context of an individualized, mathematics instructional program, Sagotsky, Patterson, and Lepper (1978) found that self-monitoring of progress enhances time spent working on materials and number of problems solved, whereas setting session goals offers no advantages. Children may have had difficulty setting realistic goals because problem difficulty varied within and between units. Goal setting is appropriate only when task difficulty remains relatively constant.

There is rich, historical literature addressing factors that influence goal setting and training. Lewin, Dembo, Festinger, and Sears (1944) explored the construct "level of aspiration," or goal-setting behaviors within a range of difficulty. Various factors influenced the level of aspiration: prior successes and failures, group standards, upper and lower goal limits, and expectations for success and failure. Achievement motivation training programs also focused on goal setting (McClelland, Atkinson, Clark, & Lowell, 1953); de Charms (1976) worked with teachers, who trained students to take personal responsibility for their learning outcomes. Goal setting was an important training component; in one activity, students chose easy, moderate, or difficult words to learn to spell.

Teaching realistic goal setting can be done in different ways. Schunk (1985) set upper and lower limits on students' goals. Limits can be removed when students understand the nature of the task and their immediate capabilities. Tollefson et al. (1984) acquainted students with goal setting using games. Over trials, students selected a distance from a wastebasket, predicted how many shots they would make, made their tosses, and recorded scores. In a baseball game, teachers prepared four word lists for each student; each list contained easy (single), moderate (double or triple), and difficult (home run) words. For each inning, students chose the hit they wanted, an assistant read the word, and the student spelled it. Correct spellings were "hits," incorrect ones were "outs."

Goal-setting conferences also are useful (Gaa, 1973, 1979). By meeting individually with teachers, students learn to assess goal difficulty and present skills. Conferences also provide students with control over learning outcomes, which can enhance self-efficacy for learning (Schunk, 1989). Though Gaa (1973) found that goal-setting conferences led to lower certainty of goal attainment, conferences raised accuracy of goal setting. Over time, certainty of goal attainment should improve as students perceive progress in skill development.

FUTURE RESEARCH

Research supports the idea that goal setting and self-efficacy are important self-regulated learning processes. More research is necessary to clarify the operation of these processes, especially in the following areas.

Transfer

Research needs to examine whether goal setting and self-efficacy influence the transfer of other self-regulated learning activities (e.g., attending, rehearsing, integrating information) over time (maintenance) and to related tasks (generalization). Strategy instruction can improve students' performances, but it does not ensure transfer (Borkowski & Cavanaugh, 1979; Paris, Cross, & Lipson, 1984). Lack of transfer can occur for many reasons, including the belief that the strategy is not as important for success as are other factors such as time available or effort expended (Fabricius & Hagan, 1984).

We might expect that goal setting and self-efficacy would facilitate transfer because students whose goal is to learn to apply a strategy with different tasks should feel efficacious as they observe progress. The belief that one has control over outcomes raises self-efficacy. Students are likely to apply a strategy in different contexts if they understand how to apply it, believe that it will improve achievement, and perceive themselves capable of performing well. These ideas require empirical investigation.

Goal Orientations

There is evidence that ability conceptions relate to goal orientations (Dweck & Leggett, 1988). Students holding an entity view pursue performance goals of gaining positive competence judgments and avoiding negative competence judgments. Those with self-doubts about their abilities work lackadaisically and expend little effort on difficult tasks. Those who believe they are capable select tasks at which they can succeed, persist longer, and expend effort, which produce judgments of competence from others. Students holding an incremental view strive to increase their competence via learning. Regardless of whether they view their ability as high or low, they persist and expend effort because they believe effort enhances ability.

Goal orientations can influence students' cognitive task engagement (Meece, Blumenfeld, & Hoyle, 1988). Future research might investigate whether self-efficacy mediates the relationship between goal orientation and achievement behaviors. Suggestive results were obtained by Elliott and Dweck (1988), who provided children with goals (learning or performance) and ability assessments (high or low). Children receiving learning goals chose challenging tasks and displayed effort and persistence regardless of ability assessment. Children with performance goals who perceived ability as high selected challenging performance tasks that allowed them to appear competent; those perceiving ability as low selected easier tasks allowing them to avoid judgments of incompetence.

Affective Reactions

Research might examine the links between goal setting, self-efficacy, and affective reactions. Affective reactions may depend on self-efficacy for goal attainment and the level at which goals are set. Whether a discrepancy between goals and present performances encourages or discourages may involve self-efficacy for goal attainment (Bandura, 1986). Perceived-goal progress might produce positive feelings; the belief that one's performances have stabilized at undesirably low levels may produce discouragement. Despondency can debilitate performance and lead to lower self-efficacy and future goals.

There is evidence that internal attributions for success lead to feelings of greater pride than external attributions (Weiner, 1985; Zaleski, 1988). Within the context of self-regulated learning, we might examine whether attributional feedback linking students' goal progress with their abilities and efforts produces higher self-efficacy and more-beneficial affective reactions than if students make external attributions for progress.

REFERENCES

- Atkinson, J. W. (1964). *An introduction to motivation*. Princeton, NJ: Van Nostrand.
- 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., & Cervone, D. (1983). Self-evaluative and self-efficacy mechanisms governing the motivational effects of goal systems. *Journal of Personality and Social Psychology*, *45*, 1017-1028.
- Bandura, A., & Cervone, D. (1986). Differential engagement of self-reactive influences in cognitive motivation. *Organizational Behavior and Human Decision Processes*, *38*, 92-113.
- Bandura, A., & Schunk, D. H. (1981). Cultivating competence, self-efficacy, and intrinsic interest through proximal self-motivation. *Journal of Personality and Social Psychology*, *41*, 586-598.
- Borkowski, J. G., & Cavanaugh, J. C. (1979). Maintenance and generalization of skills and strategies by the retarded. In N. R. Ellis (Ed.), *Handbook of mental deficiency, psychological theory and research* (2nd ed., pp. 569-617). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- de Charms, R. (1976). *Enhancing motivation: Change in the classroom*. New York: Irvington.
- Dweck, C. S. (1986). Motivational processes affecting learning. *American Psychologist*, *41*, 1040-1048.
- Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, *95*, 256-272.
- Elliott, E. S., & Dweck, C. S. (1988). Goals: An approach to motivation and achievement. *Journal of Personality and Social Psychology*, *54*, 5-12.
- Fabricius, W. V., & Hagan, J. W. (1984). Use of causal attributions about recall performance to assess metamemory and predict strategic memory behavior in young children. *Developmental Psychology*, *20*, 975-987.
- Frieze, I. H. (1980). Beliefs about success and failure in the classroom. In J. H. McMillan (Ed.), *The social psychology of school learning* (pp. 39-78). New York: Academic.
- 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.
- Garland, H. (1985). A cognitive mediation theory of task goals and human performance. *Motivation and Emotion*, *9*, 345-367.
- Horn, H. L., Jr., & Murphy, M. D. (1985). Low need achievers' performance: The positive impact of a self-determined goal. *Personality and Social Psychology Bulletin*, *11*, 275-285.
- Kanfer, F. H., & Gaelick, L. (1986). Self-management methods. In F. H. Kanfer & A. P. Goldstein (Eds.), *Helping people change: A textbook of methods* (3rd ed., pp. 283-345). New York: Pergamon.
- Lewin, K., Dembo, T., Festinger, L., & Sears, P. S. (1944). Level of aspiration. In J. McV. Hunt (Ed.), *Personality and the behavior disorders* (Vol. 1, pp. 333-378). New York: Ronald Press.
- Locke, E. A., Frederick, E., Lee, C., & Bobko, P. (1984). Effect of self-efficacy, goals, and task strategies on task performance. *Journal of Applied Psychology*, *69*, 241-251.
- Locke, E. A., Shaw, K. N., Saari, L. M., & Latham, G. P. (1981). Goal setting and task performance: 1969-1980. *Psychological Bulletin*, *90*, 125-152.
- Mace, F. C., Belfiore, P. J., & Shea, M. C. (1989). Operant theory and research on self-regulation. In B. J. Zimmerman & D. H. Schunk (Eds.), *Self-regulated learning and academic achievement: Theory, research, and practice* (pp. 27-50). New York: SpringerVerlag.
- Manderlink, G., & Harackiewicz, J. M. (1984). Proximal versus distal goal setting and intrinsic motivation. *Journal of Personality and Social Psychology*, *47*, 918-928.
- McClelland, D. C., Atkinson, J. W., Clark, R. W., & Lowell, E. L. (1953). *The achievement motive*. New York: Appleton-Century-Crofts.
- Meece, J. L., Blumenfeld, P. C., & Hoyle, R.H. (1988). Students' goal orientations and cognitive engagement in classroom activities. *Journal of Educational Psychology*, *80*, 514-523.
- Nicholls, J. G. (1984). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. *Psychological Review*, *91*, 328-346.
- Paris, S. G., Cross, D. R., & Lipson, M. Y. (1984). Informed strategies for learning: A program to improve children's reading awareness and comprehension. *Journal of Educational Psychology*, *76*, 1239-1252.
- Paris, S. G., Lipson, M. Y., & Wixson, K. K. (1983). Becoming a strategic reader. *Contemporary Educational Psychology*, *8*, 293-316.

- Paris, S. G., & Wixson, K. K. (1986). The development of literacy: Access, acquisition, and instruction. In D. Bloome (Ed.), *Literacy and schooling* (pp. 35-54). Norwood, NJ: Ablex.
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs*, *80*(1, Whole No. 609).
- Sagotsky, G., Patterson, C. J., & Lepper, M. R. (1978). Training children's self-control: A field experiment in self-monitoring and goal-setting in the classroom. *Journal of Experimental Child Psychology*, *25*, 242-253.
- Schunk, D. H. (1983a). Developing children's self-efficacy and skills: The roles of social comparative information and goal setting. *Contemporary Educational Psychology*, *8*, 76-86.
- Schunk, D. H. (1983b). Goal difficulty and attainment information: Effects on children's achievement behaviors. *Human Learning*, *2*, 107-117.
- Schunk, D. H. (1984). Enhancing self-efficacy and achievement through rewards and goals: Motivational and informational effects. *Journal of Educational Research*, *78*, 29-34.
- Schunk, D. H. (1985). Participation in goal setting: Effects on self-efficacy and skills of learning disabled children. *Journal of Special Education*, *19*, 307-317.
- Schunk, D. H. (1989). Social cognitive theory and self-regulated learning. In B. J. Zimmerman & D. H. Schunk (Eds.), *Self-regulated learning and academic achievement: Theory, research, and practice* (pp. 83-110). New York: Springer-Verlag.
- 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. (1990). *Learning goals and progress feedback during reading comprehension instruction*. Unpublished manuscript, University of North Carolina, Chapel Hill.
- Tollefson, N., Tracy, D. B., Johnsen, E. P., & Chatman, J. (1986). Teaching learning disabled students goal-implementation skills. *Psychology in the Schools*, *23*, 194-204.
- 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.
- Vroom, V. H. (1964). *Work and motivation*. New York: Wiley.
- Weiner, B. (1979). A theory of motivation for some classroom experiences. *Journal of Educational Psychology*, *71*, 3-25.
- Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review*, *92*, 548-573.
- Wood, R., & Bandura, A. (1989). Impact of conceptions of ability on self-regulatory mechanisms and complex decision-making. *Journal of Personality and Social Psychology*, *56*, 407-415.
- Zaleski, Z. (1988). Attributions and emotions related to future goal attainment. *Journal of Educational Psychology*, *80*, 563-568.
- Zimmerman, B. J. (1989). Models of self-regulated learning and academic achievement. In B. J. Zimmerman & D. H. Schunk (Eds.), *Self-regulated learning and academic achievement: Theory, research, and practice* (pp. 1-25). New York: Springer-Verlag.