

LEARNING GOALS AND CHILDREN'S READING COMPREHENSION

By: [Dale H. Schunk](#) and Jo Mary Rice

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

Made available courtesy of Taylor and Francis: <http://www.taylorandfrancis.com/>

*****Reprinted with permission. No further reproduction is authorized without written permission from Taylor and Francis. This version of the document is not the version of record. Figures and/or pictures may be missing from this format of the document.*****

Abstract:

This experiment investigated the effects of goal setting on children's self-efficacy and reading comprehension. Remedial readers participated in a comprehension strategy instructional program on finding main ideas. Some subjects received a product goal of answering questions, others were given a process goal of learning to use the strategy, and subjects in an instructional control condition were told to work productively. Compared with control subjects, process and product goal children judged self-efficacy significantly higher, and process goal children demonstrated higher comprehension skill. On a measure of goal perceptions, process goal children placed significantly greater emphasis on learning to use the strategy compared with children in the other two conditions, and judged becoming a better reader more important than did product goal subjects. These results suggest the usefulness of goal setting with remedial readers and of employing goals relating to learning processes.

Article:

Goal setting represents an important source of task motivation (Bandura, 1986; Locke, Motowidlo, & Bobko, 1986; Locke, Shaw, Saari, & Latham, 1981). The hypothesized mechanism involves internal comparisons of standards against present performance. When students make personal satisfaction contingent on attaining a desired performance, they are likely to sustain their efforts until they achieve their goals. Because children are limited in their capacity to cognitively represent complex goals and to break them into subgoals, goals that incorporate *specific* performance standards lead to higher performance than do general goals (e.g., "Do your best") or no goals (Bandura & Schunk, 1981; Gaa, 1973; Rosswork, 1977; Schunk, 1983, 1985; Tollefson, Tracy, Johnsen, Farmer, & Buenning, 1984).

According to Bandura (1982), the effects of goals on behavior depend in part on perceptions of *self-efficacy*, or personal beliefs about one's capabilities to organize and implement actions necessary to attain designated levels of performance. Self-efficacy is hypothesized to affect one's choice of activities, effort expenditure, persistence, and achievement. Students with a low sense of efficacy for accomplishing a task may attempt to avoid it, whereas those who believe they are capable should participate more eagerly. Especially when facing obstacles, students who hold a high sense of efficacy for learning ought to work harder and persist longer than those who doubt their capabilities. Research demonstrates that self-efficacy exerts a significant influence on students' task motivation and cognitive skill acquisition (Schunk, 1989). Individuals acquire information about their self-efficacy through their actual performances, vicarious (observational) experiences, forms of persuasion, and physiological indexes (e.g., sweating, heart rate).

The purpose of the present study was to investigate the effects of goal setting on children's self-efficacy and skillful performance during reading comprehension instruction on finding main ideas. When children are given a specific learning goal, they may experience an initial sense of self-efficacy for learning, which is substantiated later as children work on the task and note their goal progress (Schunk, 1989). In the absence of learning goals, students may be less sure of their capabilities because they lack a standard against which to gauge progress. Such self-doubts can impede skill development (Licht & Kistner, 1986).

In educational settings, a distinction is often drawn between goals reflecting *products* of learning, which concern what students should know or be able to accomplish as a result of learning, and goals reflecting the *processes* of learning, which focus on techniques and strategies that students can use to promote learning (Weinstein & Mayer, 1986). Goal-setting research in achievement settings has typically employed product goals representing quantity of work to be completed. Educators are increasingly emphasizing that students become proficient in the use of learning *strategies*, or systematic plans that improve the encoding of information and task performance (Paris, Lipson, & Wixson, 1983). Teaching students to use learning strategies can improve their performance on the task at hand and can generalize beyond the learning context (Pintrich, Cross, Kozma, & McKeachie, 1986).

In the present study, remedial readers received comprehension strategy instruction on finding main ideas during several sessions. Some subjects received a specific product goal of answering questions, others were given a specific process goal of learning to use the strategy, and subjects in a third condition were told to work productively (general goal).

We expected that the two specific goal conditions would lead to higher self-efficacy and skills than the general goal condition. Children with reading deficiencies typically hold low perceptions of their academic capabilities (Butkowsky & Willows, 1980). Experiencing success on reading tasks does not necessarily raise self-efficacy (Schunk & Rice, 1987). Remedial students can benefit from interventions that explicitly convey to them that they are making progress in learning (Schunk, 1989). Pursuing a specific learning goal conveys progress because students can compare their performances against the goal. As children experience a higher sense of efficacy for learning, they are apt to sustain task motivation and work systematically, which can produce greater skill acquisition (Licht & Kistner, 1986). In the absence of a specific learning goal, children may wonder whether they are making progress, which may not raise self-efficacy.

We also hypothesized that the process goal would raise self-efficacy and skills more than the product goal. We felt that emphasizing the process goal might lead children to view the strategy as a useful means of enhancing their comprehension performances. Children who believe that they have learned a strategy that can be applied when they have to find main ideas may believe that they have greater control over their comprehension outcomes, which can raise self-efficacy (Schunk, 1989). Perceived strategy usefulness can lead children to apply the strategy more diligently during training and when no longer required to do so (i.e., on the posttest), and thereby enhance skill acquisition. In contrast, emphasizing a product goal could lead subjects to view the strategy as less important to their comprehension success. To the extent that subjects believe that other factors (e.g., time available, reading ability) were relatively more important for success, they would not experience the same sense of self-efficacy for improving their skills. Subjects who believe that a strategy may not contribute much to their successes are not likely to employ the strategy as systematically within or outside of the training context (Borkowski & Cavanaugh, 1979; Fabricius & Hagen, 1984; Paris, Newman, & McVey, 1982; Ringel & Springer, 1980).

METHOD

Subjects

The final sample comprised 33 students (17 fourth graders, 16 fifth graders) drawn from one elementary school. The 15 boys and 18 girls ranged in age from 9 years 8 months to 13 years 3 months ($M = 11.2$ years). Although different socioeconomic backgrounds were represented, children predominantly were lower-middle class. Ethnic composition of the sample was 55% Hispanic, 18% Black, 15% Asian, and 12% White. Teachers initially nominated 36 children for participation; two students were excluded because they missed some of the training sessions, and one student was excluded to equalize the cell sizes.

In nominating students, teachers were asked to include those children who they felt would not experience excessive decoding problems while receiving comprehension instruction during the project. Even the English as a second language students (discussed below) were at a transition point; they subsequently were integrated into English language classes. We limited the sample in this fashion because, the experiment focused on

comprehension and we felt that decoding difficulties would negatively influence the effects of the comprehension instruction and the goal treatments. Had children with severe decoding problems been included, we would have had to modify the instructional program to address these problems. Although the exclusion of children with decoding problems limits the generalizability of the results, this exclusion allows for more meaningful interpretation of the results.

Subjects regularly received remedial reading comprehension instruction. Students had been placed in remedial classes by the school district because their total reading scores on the SRA Achievement Series were at or below the 20th percentile (Naslund, Thorpe, & Lefever, 1978). The total reading score includes vocabulary and comprehension; the 20th percentile is roughly equivalent to Grade 3. Of the 33 subjects, 21 were in their first year of being enrolled in the remedial program, 9 were in their second year, and 3 were in their third year. Twenty-one students (64%) received some instruction in English as a second language classes.

Self-Efficacy

Purpose. The purpose of the self-efficacy test was to assess children's perceived capabilities for correctly answering different types of questions that tapped comprehension of main ideas (e.g., the most important idea in a particular paragraph or the entire passage, the primary reason that some event occurred, the central purpose behind a character's actions).

Content. The reading materials included eight passages drawn from books A, B, and C, of *Scoring High in Reading* (Cohen & Foreman, 1978). Passages ranged from 4 to 25 sentences = 14 sentences), and each passage was followed by one to four questions (e.g., "What is the first paragraph mostly about?," "What is the most important idea in this story?," "What is the narrator's main feeling?," "What is a good title for this passage?") for a total of 20 questions. According to Cohen and Foreman, four passages (nine questions) were appropriate for Grade 2 students of average reading ability (Book A), two passages (six questions) for Grade 3 students (Book B), and two passages (five questions) for Grade 4 students (Book C). Passages and questions corresponded in reading level to those on the ensuing skill test although they were not identical. A sample passage and question from Book B is shown in Table 1.

Children completed one efficacy scale for each of the 20 questions. The 20 efficacy scales were portrayed on four sheets of paper. Each scale ranged in 10-unit intervals from *not sure*-10, through *maybe*-40 and *pretty sure*-70, to *really sure*-100.

Table 1

Sample Self-Efficacy Passage and Question

The gorilla's life is not always quiet. Sometimes the father gorilla does a very strange thing. In a way it is a kind of dance. First he makes a soft hooting noise. Then he picks a leaf and holds it in his lips. He stands up high on his back legs. He hoots faster. He throws leaves in the air. He hits his great chest so hard the noise can be heard far away. He kicks one leg in the air. He runs sideways. He rips leaves and branches off trees. Then, to end it all, he hits the ground with his mighty hand.

What is this story mainly about?

- A. How the father gorilla rips up trees.
- B. A strange dance of the father gorilla.
- C. The life of the father gorilla.
- D. How a father gorilla makes a hooting noise.

Administration. The test was administered to children individually by a female adult tester from outside the school. Testing was conducted according to a standardized set of instructions. Children initially received practice with the scale by judging their certainty of successfully jumping progressively longer distances ranging from a few inches to several feet. In this concrete fashion, children learned the meaning of the scale's direction and the different numerical values.

Children then read aloud a practice passage with two sample questions. Following this practice, children read aloud each of the eight test passages. After children read each passage, the tester read its questions one at a time. For each question, students privately judged their certainty of answering correctly questions of that type; that is, questions that asked for the same kind of information (e.g., most important idea in the passage or a particular paragraph) and that were about as easy or hard as the test question. Children, therefore, judged their capability of answering different types of questions rather than whether they could answer particular questions. Students were not allowed to consult passages and questions did not appear on their test pages to preclude them from actually answering the questions. Children were advised to be honest and mark the efficacy value that matched how they really felt.

The tester took different precautions to ensure that children understood the directions for the efficacy test. As mentioned above, children were given practice using the scale with a concrete task and with sample comprehension questions. During the practice, the tester asked children if they understood what to do. After the assessment, we asked the tester whether children seemed baffled by the procedure. She reported that no child experienced confusion or difficulty. Although children initially were unfamiliar with the efficacy assessment, we are satisfied that they understood the procedure and that their judgments are valid reflectors of their perceived capabilities.

Scoring and reliability. The 20 efficacy judgments were summed and averaged. The reliability of the efficacy measure was assessed in conjunction with previous similar research (Schunk & Rice, 1987). The test-retest reliability coefficient was .82.

Comprehension Skill

The *comprehension skill* test, which was administered immediately following the efficacy assessment, comprised 8 passages with 20 questions. Passages and questions were drawn from *Scoring High in Reading* (Cohen & Foreman, 1978) and ranged in difficulty as described above. Two different forms of the skill test were developed: neither form was used on the self-efficacy test. These parallel forms were used on the pretest and posttest to eliminate potential effects due to passage familiarity. Reliability was assessed during a previous study (Schunk & Rice, 1987); children's scores on these parallel forms correlated highly ($r = .87$).

The tester presented children with each passage, along with its one or more multiple-choice questions, one at a time. After children read each passage aloud, they answered its questions without assistance or performance feedback. The measure of comprehension skill was the number of questions answered correctly.

Instructional Program

Following the pretest, children were assigned randomly within sex and grade level to one of three experimental conditions ($n = 11$ per condition): process goal, product goal, instructional control (general goal). The latter condition was included rather than a no goal condition to equate the experimental conditions for provision of a goal.²

All students received a 35-minute training session each day for 15 consecutive school days. We felt that 15 sessions would allow children to become accustomed to using the strategy; prior to the study, children were unfamiliar with the strategy and strategy use constitutes an additional task. At the same time, 15 sessions seemed short enough to allow for differential effects of the goal treatments. Had more sessions been included, strategy use might have become routine among all subjects and potential goal effects would have been masked.

Children assigned to the same experimental condition met in groups of 5-6 in a private room with a female adult trainer from outside the school. There were two such small groups for each experimental condition for a total of six groups. The order in which groups met with the trainer was rotated to eliminate potential effects due to meeting time. Prior to the start of the study, the trainer received instruction on the procedures from the authors and practiced with a small group of students who did not participate in the actual study.

The *instructional material* consisted of a training packet that included several reading passages, each of which was followed by one or more multiple-choice questions assessing comprehension of main ideas. The passages in the packet were drawn from different sources and were similar to those typically used by children's remedial teachers. The reading passages were ordered from least-to-most difficult; 40% of the material was appropriate for a second-grade class of average reading ability, 40% for a third-grade class, and 20% for a fourth-grade class. Difficulty was varied through vocabulary and passage length. The material was ordered in the packet such that children initially answered questions based on only a few sentences or short passages. Passage length increased until children were reading stories with several paragraphs. Although by the end of the instructional program children were working on fourth-grade level appropriate material, approximately 90% of the material in the packet was at or below children's reading level.

In the training room was a poster board on which was printed a five-step reading comprehension strategy. This strategy, which was developed in previous research (Schunk & Rice, 1986), was as follows:

What do I have to do? (1) Read the questions. (2) Read the passage to find out what it is mostly about. (3) Think about what the details have in common. (4) Think about what would make a good title. (5) Reread the story if I don't know the answer to a question.

At the start of the first training session, the trainer distributed the instructional packet and verbalized the general instructions and the appropriate treatment instructions (described below). The trainer then pointed to the poster board and modeled the strategy and its application by verbalizing, "What do I have to do? Read the questions." The trainer read aloud the multiple-choice questions for the first comprehension passage while children followed along, after which she pointed to and verbalized steps (2) and (3). The trainer explained that details referred to bits of information and gave some examples, and said that while she was reading the passage she would be thinking about what the details had in common. She then read the passage aloud. The trainer pointed to and verbalized step (4), and explained that trying to think of a good title helps to remember important ideas in a story. She stated some of the details in the story, explained what they had in common, and made up a title for the story. The trainer then read aloud the first question and its multiple-choice answers, selected the correct answer, and explained her selection by referring to the passage. She answered the remaining questions in the same fashion.

Following this modeled demonstration, the trainer instructed children to repeat aloud each step after she verbalized it. She then said, "What do I have, to do? Read the questions." After children verbalized these statements, she selected one student to read the questions aloud. When this child finished, the trainer instructed children to repeat after her steps (2) and (3). The trainer then called on a different child to read the passage aloud, after which she asked children to repeat step (4) after her. A third student was selected to think of a title for the story and explain his or her answer. The trainer then called on individual children to read aloud each of the questions with its answers and to answer that question. If a child answered a question incorrectly, the student repeated step (5) and reread enough of the passage to answer the question correctly. When students stumbled on a word while reading, the trainer prompted with contextual and phonetic cues.

The training format for the remainder of the first session and the rest of the training program was identical except that the trainer did not model strategies and children did not verbalize each step prior to applying it. Instead, she referred to steps at the appropriate places and occasionally asked children to verbalize them. The training procedure was scripted to insure standardized implementation. The procedure was repetitive, and to preclude children from becoming bored we used short (35-minute) training sessions and reading passages on high interest content (e.g., animals, science, children). Periodic observations of the training procedure by the authors confirmed that it was properly implemented and that children maintained their interest. During the experiment, children received no additional comprehension instruction.

Experimental Conditions

At the start of each training session, all children were told the following by the trainer:

Today we're going to be working together on reading. We'll read some passages and answer some questions. We're going to use these steps to answer questions about what we've read. I've given you some papers that we'll be working on.

Immediately following these instructions, the trainer provided children with the appropriate goal information. To children assigned to the *process goal* condition, the trainer said, "While you're working, it helps to keep in mind what you're trying to do. You'll be trying to learn how to use the steps to answer questions about what you've read." In this condition and the other two, the trainer asked children if that goal sounded reasonable. We felt that this step would help to promote a sense of goal commitment among children. There is evidence that goals do not affect performance if people do not accept them (Locke et al., 1981; Mento, Cartledge, & Locke, 1980). No child in any condition expressed displeasure with the goal.

To children assigned to the *product goal* condition, the trainer said, "While you're working, it helps to keep in mind what you're trying to do. You'll be trying to answer questions about what you've read." The goal instructions given to *instructional control* (general goal) subjects were, "While you're working, try to do your best." The latter condition controlled for the effects of comprehension instruction and strategy training.

Posttest

Goal perceptions. Children's perceptions of their goals during the instructional sessions were assessed on the day following the last session. For any given child, the tester was unaware of the child's experimental assignment and of how the child had performed during the instructional program. Children were given a sheet of paper that portrayed four scales. Each scale ranged in 10-unit intervals from *not at all-0*, through intermediate values (*some-40*, *pretty much-60*), to *a whole lot-100*. The scales were labeled, *answer the questions*, *finish working the papers*, *learn to use the steps*, and *become a better reader*. (These measures will be referred to as questions, papers, steps, and reader, respectively.) Label order was counter-balanced across subjects.

Questions and steps were assessed because these reflected the two goal treatments. Reader was included to determine whether process goal subjects viewed strategy use as a general means of improving their comprehension and helping them to become better readers. Papers were included because students often view their learning goal in extrinsic terms as one of finishing work so they can receive a reward or work on something else (Nicholls, 1983).

The tester asked children to think about what things they were trying to do during the instructional sessions. The tester explained that children were to mark on the scales how much they were trying to do each of those things. The tester explained each of the four scales and provided some examples of how hypothetical children might answer. After being told that there were no right or wrong answers, children marked their papers privately.

Self-efficacy and skill. The self-efficacy and skill tests were administered one or two days following the last instructional session. The self-efficacy instrument and procedure were identical to those of the pretest; the parallel form of the skill test was used to assess comprehension. Tests and training materials were scored by an adult who had not participated in the data collection and was unaware of children's experimental assignments. The reading comprehension skill tests were scored using the answers provided in the source material (Cohen & Foreman, 1978).

RESULTS

Means and standard deviations of all measures are presented by experimental condition in Table 2. Preliminary analyses of variance (ANOVAs) yielded no significant between-conditions differences on pretest measures. There also were no significant differences on any measure due to grade level or sex of child. The three experimental conditions did not differ in the number of passages completed during the training program.

Table 2

Means (and Standard Deviations) by Experimental Condition

Measure	Phase	Experimental Condition		
		Process Goal	Product Goal	Control
Self-Efficacy	Pretest	67.5 (15.5)	68.6 (8.5)	61.6 (10.7)
	Posttest	82.1 (12.6)	81.8 (13.5)	65.6 (13.9)
Skill	Pretest	7.8 (2.5)	7.8 (1.9)	7.6 (2.9)
	Posttest	12.5 (3.7)	11.5 (3.4)	8.5 (2.2)
Steps	Posttest	88.2 (13.3)	67.1 (15.4)	55.5 (25.4)
Reader	Posttest	89.1 (11.4)	67.3 (25.3)	70.0 (17.9)
Questions	Posttest	79.1 (21.7)	83.6 (21.6)	80.0 (25.3)
Papers	Posttest	80.9 (19.2)	79.1 (25.1)	76.4 (20.6)

Note. $N=33$; $n=11$ per condition. Self-efficacy means represent the average judgment per question; range of scale is 10(low)–100. Skill means represent the number of correct answers on 20 questions. Range of steps, reader, questions, and papers scales is 0(low)–100.

Analysis of covariance (ANCOVA) procedures were used to determine whether there were significant between-conditions differences on the posttest measures of self-efficacy and skill. The use of ANCOVA necessitated homogeneity of slopes across experimental conditions (Pedhazur, 1982). Tests of slope differences for each measure were made by comparing a linear model that allowed separate slopes for each experimental condition against one that had only one slope parameter for estimating the pretest-posttest relationship across the three treatments. These analyses found the assumption of slope homogeneity across treatments to be tenable ($p>.05$).

Posttest self-efficacy and skill were analyzed with a multivariate analysis of covariance (MANCOVA); the three experimental conditions constituted the treatment factor and the two pretest measures served as covariates. This analysis was significant, Wilks's lambda = .603, $F(4, 54) = 3.88$, $p < .01$. ANCOVA applied to each posttest measure yielded significant effects: self-efficacy, $F(2, 29) = 4.02$, $p < .05$; skill, $F(2, 29) = 5.26$, $p < .05$. Posttest means were evaluated using Dunn's multiple comparison procedure (Kirk, 1982). These analyses showed that students in the process and product goal conditions judged self-efficacy significantly higher than did students in the control condition ($ps < .05$). Process goal subjects demonstrated significantly ($p < .01$) higher comprehension skill compared with control subjects.

The four goal perception measures were analyzed with a multivariate analysis of variance (MANOVA), which yielded a significant treatment effect, Wilks's lambda = .441, $F(8, 54) = 3.41$, $p < .01$. Separate ANOVAs on each measure revealed significant effects on steps, $F(2, 301) = 8.34$, $p < .01$, and reader, $F(2, 301) = 4.28$, $p < .05$. Dunn's procedure showed that process goal subjects placed significantly greater emphasis on learning the steps compared with product goal ($p < .05$) and control ($p < .01$) subjects, and judged becoming a better reader significantly more important than did product goal children ($p < .05$).

Correlational analyses were conducted to examine theoretically important relationships between posttest self-efficacy, posttest skill, and the four goal perception measures. Based on the considerations discussed earlier, self-efficacy was hypothesized to bear a positive relationship to comprehension skill. We also felt that higher self-efficacy might be associated with greater emphasis on the goals of learning to use the strategy and becoming a better reader.

Pearson product-moment correlations were computed separately within each experimental condition. The between-conditions differences in these correlations were nonsignificant; therefore, correlations were averaged across the three conditions using an r to z transformation (Edwards, 1984). Significant correlations were obtained between posttest self-efficacy and skill ($r .31$, $p < .05$), and between self-efficacy and each of the four goal perception measures (range of $r = .32$ – $.39$, all $p < .05$). Positive and significant correlations were obtained between steps and reader, $r = .30$, $p < .05$; steps and questions, $r = .41$, $p < .01$; and reader and papers, $r = .48$, $p < .01$.

DISCUSSION

The results of this study support the idea that providing students with a specific learning goal can have important effects on achievement behaviors. Compared with students who received a general goal of working productively, those given either a process goal of learning to use a comprehension strategy or a product goal of answering questions demonstrated significantly higher self-efficacy on completion of the instructional program. These findings are not due to differences in reading instruction, because each experimental condition received the same amount and type of instruction and practice in applying the strategy, and conditions did not differ in the number of reading passages completed during the instructional program.

These remarks are not intended to downgrade the importance of the instructional program. The learning goals were effective in the context of the instructional program. Providing students with a learning goal will not enhance their achievement behaviors in the absence of instruction designed to help them attain that goal.

One explanation for the present results is that providing subjects with a specific goal that they believe is attainable raises their initial sense of self-efficacy for learning, which subsequently is 'substantiated as children work at the task and experience success. The perception of progress toward one's goal is an important means of enhancing self-efficacy (Bandura, 1986). Control subjects, who received only a general goal, may have been less certain of their reading progress, which will not raise self-efficacy (Schunk, 1989).

Pursuing a learning process goal benefited comprehension skill. It is possible that the process goal created in children a sense of control over learning outcomes. The belief that one knows and can apply a strategy that will assist their comprehension may have led children to apply the strategy during the posttest when they were not required to do so. Product goal subjects, who did not place as much emphasis on learning to use the strategy, may not have applied it as diligently on the posttest. This explanation is suggestive because children's strategy use on the posttest was not formally assessed. Future research needs to explore this possibility.

The present results, although encouraging, are limited in generalizability given the subject population of remedial readers. Compared with better readers, students with comprehension difficulties may not work on reading tasks in a systematic fashion (Paris et al., 1983). Strategy instruction seems especially beneficial for students who typically experience learning problems (Hallahan, Kneedler, & Lloyd, 1983). Better readers typically employ learning strategies and may not benefit much from strategy instruction. Because strategy use constitutes an additional task and can distract children from the task at hand, strategy training even can hinder performance (Denney, 1975). This is not to suggest that good readers could not benefit from receiving learning goals, but rather goal setting explicitly linked with strategy training seems most beneficial for students who possess strategic deficiencies.

The two specific goal conditions did not differ significantly in self-efficacy or skillful performance. Both goals were short-term, specific, and difficult but attainable. Each of these goal properties is associated with higher self-efficacy and task performance (Bandura, 1986; Locke et al., 1981). There were subtle differences in the goal instructions, and it is possible that product goal subjects inferred that an important goal of the instructional program was to learn the strategy.

Despite these similarities, it is possible that differences would emerge between the two goal conditions over time outside of the experimental setting. Process goal subjects placed greater emphasis on learning to use the strategy, which likely was due to their goal instructions. This emphasis may lead to greater strategy transfer; children might have been more likely to continue to systematically use the strategy, which would have promoted achievement. Research shows that subjects are more apt to use a strategy when they perceive it as a valuable performance aid (Borkowski & Cavanaugh, 1979; Paris et al., 1983). At the same time, subjects would probably need instruction on how to modify and use the strategy on different types of comprehension tasks, because even minor modification is problematic among students with learning problems (Borkowski & Cavanaugh, 1979). Additional research is needed on maintenance and generalization of comprehension strategy use.

It is interesting that process goal subjects placed greater emphasis on becoming a better reader than did product goal children. This finding cannot be due to treatment differences because the goal of becoming a better reader was not stated to children in any condition. Perhaps process goal students inferred that by learning to use the steps they could become better readers. This finding is important, because poor readers often have low expectations for performing well in reading (Butkowsky & Willows, 1980). To the extent that students believe they can become better readers, they are apt to engage in behaviors that they believe will help them accomplish that goal (Paris & Wixson, 1986).

Along these same lines, emphasizing strategy learning as a goal might help foster a sense of task involvement among students. Nicholls (1983) distinguishes the motivational states of task involvement and ego involvement partly in terms of how students view learning. Task involved students believe that learning is an important goal of schooling. They focus their efforts on tasks and believe that they can improve their abilities by learning. In contrast, ego involved students are often self-preoccupied. They do not view learning as a goal by itself, but rather as a means to the end of not appearing incompetent. In this conception, ability is a relatively fixed learning capacity, and is assessed relative to the abilities of other students. Nicholls contends that educational practices can foster different motivational states. Future research could determine whether process and product goals lead to different beliefs.

This research supports the idea that, although self-efficacy is influenced by one's performances, it is not merely a reflection of them (Bandura, 1982; Schunk, 1989). Experimental conditions did not differ in the number of comprehension exercises completed during the instructional program, but children who received specific goals subsequently judged self-efficacy higher. This study also shows that self-efficacy bears a positive relationship to comprehension performance. Personal expectations for success are viewed as important influences on achievement by different theoretical approaches (Bandura, 1986; Covington & Omelich, 1979; Weiner, 1985). The present findings have implications for instructional practices of remedial readers. Small group reading instruction is common in schools. Integrating goals into instructional sessions can be easily accomplished. Advising students to work productively may yield few benefits. The present study shows that short-term, specific, and difficult but attainable goals are more effective in raising achievement outcomes, and that emphasizing to children a process goal of learning to use a strategy can have additional benefits on children's perceptions of their learning goals.

Notes:

² Some minor adjustment was necessary to ensure that each condition had a comparable number of students enrolled in each year of the remedial program and enrolled in English as a second language classes.

REFERENCES

- Bandura, A. (1982). The self and mechanisms of agency. In J. Suls (Ed.), *Psychological perspectives on the self* (Vol. 1, pp. 3-39). Hillsdale, NJ: Erlbaum.
- Bandura, A. (1986). *Social foundations of thought and action*. Englewood Cliffs, NJ: Prentice-Hall.
- 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: Erlbaum.
- Butkowsky, I. S., & Willows, D. M. (1980). Cognitive-motivational characteristics of children varying in reading ability: Evidence for learned helplessness in poor readers. *Journal of Educational Psychology*, 72, 408-422.
- Cohen, S. A., & Foreman, D. I. (1978). *Scoring high in reading*. New York: Random House.
- Covington, M. V., & Omelich, C. L. (1979). Are causal attributions causal? A path analysis of the cognitive model of achievement motivation. *Journal of Personality and Social Psychology*, 37, 1487-1504.
- Denney, D. R. (1975). The effects of exemplary and cognitive models and self-rehearsal on children's interrogative strategies. *Journal of Experimental Child Psychology*, 19, 476-488.

- Edwards, A. L. (1984). *An introduction to linear regression and correlation* (2nd ed.). San Francisco: Freeman.
- Fabricius, W. V., & Hagen, 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.
- Gaa, J. P. (1973). Effects of individual goal-setting conferences on achievement, attitudes, and goal-setting behavior. *Journal of Experimental Education, 42*, 22-28.
- Hallahan, D. P., Kneedler, R. D., & Lloyd, J. W. (1983). Cognitive behavior modification techniques for learning disabled children: Self-instruction and self-monitoring. In J. O. McKinney & L. Feagans (Eds.), *Current topics in learning disabilities* (Vol. 1, pp. 207-244). Norwood, Na: Ablex.
- Kirk, R. E. (1982). *Experimental design: Procedures for the behavioral sciences* (2nd ed.). Belmont, CA: Brooks/Cole.
- Licht, B. G., & Kistner, J. A. (1986). Motivational problems of learning-disabled children: Individual differences and their implications for treatment. In J. K. Torgesen & B. W. L. Wong (Eds.), *Psychological and educational perspectives on learning disabilities* (pp. 225-255). Orlando, FL: Academic Press.
- Locke, E. A., Motowidlo, S. J., & Bobko, P. (1986). Using self-efficacy theory to resolve the conflict between goal-setting theory and expectancy theory in organizational behavior and industrial/ organizational psychology. *Journal of Social and Clinical Psychology, 4*, 328-338.
- 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.
- Mento, A. J., Cartledge, N. D., & Locke, E. A. (1980). Maryland vs. Michigan vs. Minnesota: Another look at the relationship of expectancy and goal difficulty to task performance. *Organizational Behavior and Human Performance, 25*, 419-440.
- Naslund, R. A., Thorpe, L. P., & Lefever, D. W. (1978). *SRA Achievement Series*. Chicago: Science Research Associates.
- Nicholls, J. G. (1983). Conceptions of ability and achievement motivation: A theory and its implications for education. In S. G. Paris, G. M. Olson, & H. W. Stevenson (Eds.), *Learning and motivation in the classroom* (pp. 211-237). Hillsdale, NJ: Erlbaum.
- Paris, S. G., Lipson, M. Y., & Wixson, K. K. (1983). Becoming a strategic reader, *Contemporary Educational Psychology, 8*, 293-316.
- Paris, S. G., Newman, R. S., & McVey, K. A. (1982). Learning the functional significance of mnemonic actions: A microgenetic study of strategy acquisition. *Journal of Experimental Child Psychology, 34*, 490-509.
- 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.
- Pedhazur, E. J. (1982). *Multiple regression in behavioral research: Explanation and prediction* (2nd ed.). New York: Holt, Rinehart & Winston.
- Pintrich, P. R., Cross, D. R., Kozma, R. B., & McKeachie, W. J. (1986). Instructional psychology. *Annual Review of Psychology, 37*, 611-651.
- Ringel, B. A., & Springer, C. J. (1980). On knowing how well one is remembering: The persistence of strategy use during transfer. *Journal of Experimental Child Psychology, 29*, 322-333.
- Rosswork, S. G. (1977). Goal setting: The effects on an academic task with varying magnitudes of incentive. *Journal of Educational Psychology, 69*, 710-715.
- Schunk, D. H. (1983). 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. (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). Self-efficacy and cognitive skill teaming. In C. Ames & R. Ames (Eds.), *Research on motivation in education, Vol. 3: Goals and cognitions* (pp. 13-44). San Diego: Academic Press.
- Schunk, D. H., & Rice, J. M. (1986). Extended attributional feedback: Sequence effects during remedial reading instruction. *Journal of Early Adolescence, 6*, 55-66.
- Schunk, D. H., & Rice, J. M. (1987). Enhancing comprehension skill and self-efficacy with strategy value information. *Journal of Reading Behavior, 19*, 285-302.
- Tollefson, N., Tracy, D. B., Johnsen, E. P., Famier, A. W., & Buenning, M. (1984). Goal setting and

personal responsibility training for LD adolescents. *Psychology in the Schools*, 21, 224-233.

Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review*, 92, 548-573.

Weinstein, C. E., St Mayer, R. E. (1986). The teaching of learning strategies. In M. C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 315-327). New York: Macmillan.