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Promoting Self-Determination in Early Elementary School

Teaching Self-Regulated Problem-Solving and Goal-Setting Skills

SUSAN B. PALMER AND MICHAEL L. WEHMEYER

ABSTRACT

Problem solving and goal setting are important components of self-determination that young people learn over time. This study describes and validates a model of teaching in early elementary grades that teachers can use to infuse these activities into existing curricula and programs. Can young children set goals for learning using the *Self-Determined Learning Model of Instruction*, and can teachers implement this model in a variety of subjects and settings with students having diverse learning needs? Our results show that even the youngest students (ages 5–6) were able to set goals and use the model to achieve. Teachers used the model effectively to support the investigation of student interests, the facilitation of choices, and the goal setting and attainment of young children.

Unfortunately, the majority of instructional activities designed to promote and enhance self-determination focus on adolescents. We have been engaged in the development and validation of a model of teaching based on our theoretical work in self-determination. This model will enable teachers to teach students to become self-regulated problem solvers, to set educational and learning goals, and to self-evaluate their performance toward that self-selected goal. This model was designed for use across a wide age range and provides a vehicle by which teachers of young children with disabilities can promote the acquisition and development of the skills that form the foundation for the development of self-determination. This article reports an evaluation of the model's efficacy for children with disabilities in early elementary grades (K–3).

SKILLS AND ATTITUDES LEADING TO SELF-determination develop and emerge across the life span. Doll, Sands, Wehmeyer, and Palmer (1996) examined the developmental progression of the component elements of self-determined behavior and, based on their research findings, identified school- and family-based interventions to support the development of self-determination across various age ranges. There is a growing acknowledgement that instruction to promote self-determination needs to begin early in life if students with disabilities are to leave school as self-determined young people (Erwin & Brown, 2000; Wehmeyer & Palmer, 2000; Wehmeyer, Sands, Doll, & Palmer, 1997).

LEARNING MODELS

Joyce and Weil (1980) defined a model of teaching as “a plan or pattern that can be used to shape curriculums (long term courses of study), to design instructional materials, and to guide instruction in the classroom and other settings” (p. 1). Such models are derived from theories about human behavior, learning, or cognition, and effective teachers employ multiple models of teaching, taking into account the unique characteristics of the learner and types of learning. Models constitute a basic repertoire for teaching and are designed to increase student learning and to help teachers become more effective at what they do best—teach (Joyce & Weil, 1980).

Self-Determined Learning Model of Instruction

The *Self-Determined Learning Model of Instruction* (Mithaug, Wehmeyer, Agran, Martin, & Palmer, 1998; Wehmeyer, Palmer, Agran, Mithaug, & Martin, 2000) was designed to provide a model of teaching to enable educators to teach students to self-direct the instructional process and, at the same time, to enhance their self-determination. The *Self-Determined Learning Model of Instruction* is based on the component elements of self-determination (Wehmeyer, 1999), the process of self-regulated problem solving, and research on student-directed learning. It is appropriate for students with and without disabilities across a wide range of content areas and enables teachers to engage students in their educational programs by increasing their opportunities to self-direct learning. The model is adapted from a format developed initially for adolescents (Wehmeyer et al., 2000), and the student questions and supports are identical for adolescents. However, the focus on interests and selecting goals is adapted for

younger students. For students in early elementary grades (K–3), starting the process of becoming self-determined before adolescence gives added time for building the children’s capacity for choice, decision making, goal setting, and problem solving that are essential for later self-determination.

The implementation of the model consists of a three-phase instructional process, depicted in Figures 1, 2, and 3. Each instructional phase presents a problem to be solved by the student. The student solves each problem by posing and answering a series of four *student questions* (per phase) that students learn, modify to make their own, and apply to reach self-selected goals. Each question is linked to a set of *teacher objectives*. Each instructional phase includes a list of *educational supports* that teachers can use to enable students to self-direct learning.

The student questions in the model are constructed to direct the student through a problem-solving sequence in each instructional phase. The solutions to the problems in each phase lead to the problem-solving sequence in the next phase.

Set a Goal Problem for Student to Solve: What is my goal?	
<p>Student Question 1: What do I want to learn?</p> <p>Teacher Objectives</p> <ul style="list-style-type: none"> • Enable students to identify specific strengths and instructional needs. • Enable students to communicate preferences, interests, beliefs, and values. • Teach students to prioritize needs. <p>Student Question 2: What do I know about it now?</p> <p>Teacher Objectives</p> <ul style="list-style-type: none"> • Enable students to identify their current status in relation to the instructional need. • Assist students to gather information about opportunities and barriers in their environments. <p>Student Question 3: What must change for me to learn what I don’t know?</p> <p>Teacher Objectives</p> <ul style="list-style-type: none"> • Enable students to decide if action will be focused toward capacity building, modifying the environment, or both. • Support students to choose a need to address from a prioritized list. <p>Student Question 4: What can I do to make this happen?</p> <p>Teacher Objective</p> <ul style="list-style-type: none"> • Teach students to state a goal and identify criteria for achieving that goal. 	<p>Educational Supports</p> <p>Student self-assessment of interests, abilities, and instructional needs</p> <p>Awareness training</p> <p>Choice-making instruction</p> <p>Problem-solving instruction</p> <p>Decision-making instruction</p> <p>Goal-setting instruction</p>

FIGURE 1. Phase 1 of the *Self-Determined Learning Model of Instruction*.

Take Action	
Problem for Student to Solve: What is my plan?	
<p>Student Question 5: What can I do to learn what I don't know?</p> <p>Teacher Objective</p> <ul style="list-style-type: none"> • Enable student to self-evaluate current status and self-identified goal status. <p>Student Question 6: What could keep me from taking action?</p> <p>Teacher Objective</p> <ul style="list-style-type: none"> • Enable student to determine a plan of action to bridge the gap between self-evaluated current status and self-identified goal status. <p>Student Question 7: What can I do to remove these barriers?</p> <p>Teacher Objectives</p> <ul style="list-style-type: none"> • Collaborate with student to identify most appropriate instructional strategies. • Teach student needed student-directed learning strategies. • Support student to implement student-directed learning strategies. • Provide mutually agreed-upon teacher-directed instruction. <p>Student Question 8: When will I take action?</p> <p>Teacher Objectives</p> <ul style="list-style-type: none"> • Enable student to determine schedule for action plan. • Enable student to implement action plan. • Enable student to self-monitor progress. 	<p>Educational Supports</p> <p>Self-scheduling</p> <p>Self-instruction</p> <p>Antecedent cue regulation</p> <p>Choice-making instruction</p> <p>Goal-attainment strategies</p> <p>Problem-solving instruction</p> <p>Decision-making instruction</p> <p>Self-advocacy instruction</p> <p>Assertiveness training</p> <p>Communication skills training</p> <p>Self-monitoring</p>

FIGURE 2. Phase 2 of the *Self-Determined Learning Model of Instruction*.

Their construction was based on a theory in the problem-solving and self-regulation literature that suggests there is a means-ends problem-solving sequence that must be followed for any person's actions to produce results to satisfy their needs and interests (Agran & Wehmeyer, 1999; Bransford & Stein, 1993). Teachers implementing the model teach students to solve a sequence of problems to construct a means-ends chain—a causal sequence—that moves them from where they are to where they want to be (a goal state; Mithaug et al., 1998).

To answer the questions in this sequence, students are supported to regulate their own problem solving by setting goals to meet needs, constructing plans to meet goals, and adjusting actions to complete plans. Thus, each instructional phase poses a problem that the student must solve (What is my goal? What is my plan? What have I learned?) by in turn solving a series of problems posed by the questions in each

phase. The sequence of questions is supplemented by teacher facilitation and discussion for all model users, but especially for children in Grades K through 3. The four questions differ from phase to phase, but they represent identical steps in the problem-solving sequence. That is, students answering the questions will (a) identify the problem, (b) identify potential solutions to the problem, (c) identify barriers to solving the problem, and (d) identify the consequences of each solution, with teacher facilitation. These steps are the fundamental steps in any problem-solving process, and they form the means-ends problem-solving sequence represented by the student questions in each phase, enabling the student to solve the problem posed in each instructional phase.

Younger students are able to answer the questions as they proceed through the model because the teachers adapt the questions to meet the understanding and developmental needs of the student. Before introducing the model questions

Adjust Goal or Plan Problem for Student to Solve: What have I learned?	
<p>Student Question 9: What actions have I taken? Teacher Objective</p> <ul style="list-style-type: none"> • Enable student to self-evaluate progress toward goal achievement. <p>Student Question 10: What barriers have been removed? Teacher Objective</p> <ul style="list-style-type: none"> • Collaborate with student to compare progress with desired outcomes. <p>Student Question 11: What has changed about what I don't know? Teacher Objectives</p> <ul style="list-style-type: none"> • Support student to re-evaluate goal if progress is insufficient. • Assist student to decide if goal remains the same or changes. • Collaborate with student to identify if action plan is adequate or inadequate given revised or retained goal. • Assist student to change action plan if necessary. <p>Student Question 12: Do I know what I want to know? Teacher Objective</p> <ul style="list-style-type: none"> • Enable student to decide if progress is adequate or inadequate or if goal has been achieved. 	<p>Educational Supports</p> <p>Self-evaluation strategies</p> <p>Choice-making instruction</p> <p>Problem-solving instruction</p> <p>Decision-making instruction</p> <p>Goal-setting instruction</p> <p>Self-reinforcement strategies</p> <p>Self-monitoring strategies</p> <p>Self-recording strategies</p>

FIGURE 3. Phase 3 of the *Self-Determined Learning Model of Instruction*.

with younger students or students who may have difficulty understanding these basic concepts, teachers should talk about what goals are and have the students identify some of their interests. A general discussion about interests for the whole class can center on talking about the things that individual children prefer to do during recess or after school or about the books they might choose during picture-book or free reading time. In order to work on identifying individual student interests, teachers can use the graphic organizer in Figure 4. Students can write or draw a picture of the things that they like to do at school and at home. A teacher can then teach them about goals in a general sense as “something you set out to do,” using the bottom of the organizer in Figure 4 to identify several things that a child might choose to accomplish.

The teacher objectives within the model are just that—the objectives a teacher will be trying to accomplish by implementing the model. The objectives provide suggestions for teachers to enable and support students to work through the student questions by scaffolding instruction, using direct teaching strategies, or collaborating with students to deter-

mine the best strategies to achieve goals. In each instructional phase, the objectives are linked directly to the student questions. These objectives can be met by using strategies provided in the educational supports section of the model. The teacher objectives provide, in essence, a road map to assist the teacher to enable the student to solve the problem stated in the student question. For example, regarding the first student question (What do I want to learn?), teacher objectives linked to this question include the activities in which students should be engaged to answer this question. In this case, they involve enabling students to identify their specific strengths and instructional needs; to identify and communicate preferences, interests, beliefs, and values; and to prioritize their instructional needs. As teachers use the model, it is likely that they can generate more objectives that are relevant to the question, and they are encouraged to do so.

The educational supports are not actually a part of the model per se but are what Joyce and Weil (1980) referred to as the model’s *syntax*—how the model is implemented. However, because the implementation of this model requires teachers to teach students to self-direct their learning, we be-

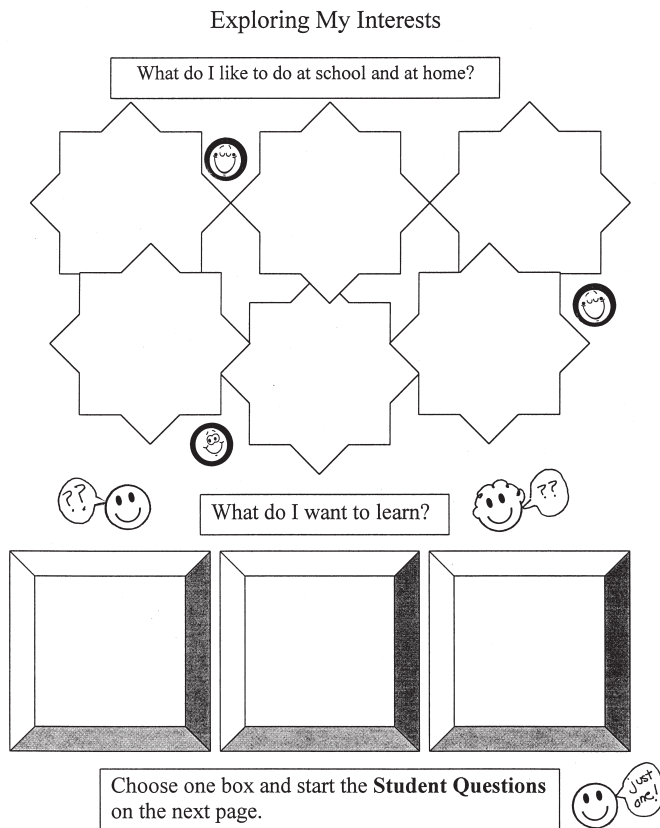


FIGURE 4. Graphic organizer to explore student interests.

lieve it is important to identify some strategies and supports that could be used to successfully implement the model. The majority of these supports are derived from the self-management literature. A variety of strategies, such as choice making (Cooper et al., 1992), goal setting (Hayes et al., 1985; Schunk, 1985), communication skills training (Kelly, Furman, Phillips, Hathorn, & Wilson, 1979; Mandlebaum & Wilson, 1989), and self-monitoring techniques (Agran & Martin, 1987; Smith & Nelson, 1997), have been used to teach students, including students with severe disabilities, how to manage their own behavior. Wehmeyer, Agran, and Hughes (1998) provided a compilation of strategies and suggestions for teaching self-determination strategies to students with disabilities.

The emphasis in the model on the use of instructional strategies and educational supports that are student directed provides another means of teaching students to teach themselves, promoting self-determination. With the use of the student questions, students will learn a self-regulated problem-solving strategy to use in goal attainment. Often, student-directed learning strategies are used in combination with teacher direction in this model, because direct instruction may be the most effective method or strategy to use in some circumstances. One common misinterpretation of self-determination is that it is synonymous with *independent performance*. That is, people misinterpret self-determination as

meaning that you do everything yourself. However, causal agents do not necessarily do everything for themselves; instead, they are the catalysts in making things happen in their lives. Students who are considering what plan of action to implement to achieve a self-selected goal can recognize that teachers have expertise in instructional strategies and take full advantage of that expertise.

Validation of the Self-Determined Learning Model of Instruction

The purpose of any model of instruction is to promote student learning and growth. Thus, the first requirement of such models is that teachers can use the model to teach students educationally valued skills or concepts. We have proposed in this study that the *Self-Determined Learning Model of Instruction* has the added benefit of beginning the process of becoming self-determined in Grades K through 3 as well as in adolescence. The studies described in this section have focused on ensuring that adolescents with disabilities achieve educationally valued goals when provided with instruction using the model and on examining the impact of the model on student self-determination. These studies have illustrated the general applicability of the model for goal setting, problem solving, and promoting self-determination as a first step in proving the model's utility for students and teachers.

Wehmeyer et al. (2000) conducted a field test of the initial version of the model, which was designed for adolescents, with 21 teachers responsible for the instruction of adolescents receiving special education services in two states (Texas and Wisconsin). A total of 40 students (mean age = 17.23, mean IQ = 55) with mental retardation ($n = 13$), learning disabilities ($n = 17$), or emotional or behavioral disorders ($n = 10$) set goals. Using the *Goal Attainment Scaling* (GAS) process (Kiresuk, Smith, & Cardillo, 1994), teachers rated 55% of the goals on which students received instruction as having been *achieved as expected* or *exceeding expectations*. Of the remainder, teachers indicated that students *made progress* on an additional 25% of their goals, although they did not fully achieve them; and only 20% of the goals were rated as indicating *no student progress* on the goal. Moreover, there were significant differences in a positive direction in pre- and postintervention scores on self-determination as measured by *The Arc's Self-Determination Scale* (Wehmeyer, 1996), a self-report measure of self-determination for adolescents and adults. This field test indicated that the model was effective in enabling older students to attain educationally valued goals.

Agran, Blanchard, and Wehmeyer (2000) further examined the efficacy of the *Self-Determined Learning Model of Instruction* for use with 19 adolescents with severe disabilities. Unlike the previous study, the research design used by these researchers involved a delayed multiple baseline design across three groups. Students collaborated with their teachers to implement the first phase of the model and, as a result,

identified one goal as a target behavior. Prior to implementing Phase 2 of the model, teachers and researchers collected baseline data on student performance on these goals. At staggered intervals subsequent to baseline data collection, teachers implemented the model with students, and data collection continued through the end of instructional activities and into a maintenance phase. As with the field-test study, Agran et al. collected data about goal attainment using the GAS, indicating that 68% of the scores exceeded teacher expectations. Goals included following directions, learning academic skills, making transportation arrangements, completing vocational tasks, and improving conversational skills, to name a few. Although the population varied from the focus of the present study, the successful use of *The Self-Determined Learning Model of Instruction* for student goal setting is again noted.

Goal setting with younger children must support the causal link between goals and actions to accomplish goals (Doll et al., 1996). A study by Guevremont, Osne, and Stokes (1988) with three preschool children used single-subject research to show the positive effects of setting performance goals for two of the children. Nicholls and Miller (1983) found that children at age 5 set goals related to acquiring information rather than to increasing ability. Children begin to independently set goals related to effort, ability, and task performance at age 11 or 12 years (Woolfolk, 1990). Graham and Harris (1992) suggested that young children and students with learning problems can set goals using teacher-student interaction, supporting our model's use with young children.

The purpose of the present study was to evaluate the efficacy of and extend the knowledge base about the *Self-Determined Learning Model of Instruction* with teachers of early elementary students in order to determine the degree to which this model might enable educators to promote

the development of self-determined behavior for younger children.

METHOD

Participants

Fourteen teachers from two states (Texas and Kansas) were recruited to implement the early elementary version of the *Self-Determined Learning Model of Instruction*. Teachers were nominated to participate by school administrators and received an honorarium for their participation in the study. Students taught by these educators ($n = 50$) were enrolled in kindergarten through third grade in 11 elementary schools across five school districts (one rural, three suburban, and one urban) in the two states (Texas, $n = 34$; Kansas, $n = 16$). Table 1 provides information about student age, special education category, and grade. Students ranged from 5 to 9 years of age, with a mean of 7.92 years ($SD = 1.30$), and most students were receiving special education supports in one or more categories. Children who did not have a special education label were either still in the assessment process to determine their special education eligibility or were receiving math or reading enrichment services in their school. The sample included 32 boys and 18 girls. The ethnicity of the students included White ($n = 23$), African American ($n = 20$), Hispanic ($n = 6$), and Asian American ($n = 1$). Data were collected during the 1998–1999 and 1999–2000 school years. Informed consent was obtained from the parents of all students. Table 1 provides greater detail about student characteristics.

The 14 teachers who supported students in the study ranged in age from 26 years to 57 years, with a mean age of 38.78 years. All were women who had between 1 and 26 years of teaching experience, with an average of 10.71 years.

TABLE 1. Age, Educational Label, and Grade of Participating Students

Grade and age	Learning disability	Mental retardation	Speech impairment	Gifted	No label ^a	Total
K						5
Age 5	1	1	0	0	2	4
Age 6	0	0	1	0	0	1
Grade 1						6
Age 6	1	0	0	0	2	3
Age 7	0	0	0	0	3	3
Grade 2						9
Age 7	2	1	0	0	1	4
Age 8	1	1	1	0	2	5
Grade 3						30
Age 8	5	0	2	0	1	8
Age 9	10	3	1	2	5	21
Age 10	1	0	0	0	0	1
Total	21	6	5	2	16	50

^aNo label indicates students who were in process of being assessed for possible special education identification or were identified for additional support for math or reading through Title 1 services.

Procedure

Teachers who participated in the study received training from project staff on the *Self-Determined Learning Model of Instruction*, using both large-group (introduction to model) and one-to-one training. Teachers implemented the model in the manner described previously, with the exception that project staff created materials that were developmentally and age appropriate, particularly with relation to supporting students to address the student questions in the model. So, for example, when teachers talked to students about their interests as a means to answer Student Question 1, they were provided with a student interest form, which included a section for exploring interests (see Figure 4). Students were encouraged to discuss what they liked to do at school and at home, and the teacher helped each student to complete the student interest form. Students were encouraged to write or draw a picture of their answers, or the teachers wrote what the students dictated. Teachers also discussed the meaning of the words *goal* and *problem* and talked about setting goals and solving problems with the students either individually or in small groups.

Project staff supported teachers throughout the initial goal-setting process by e-mail, telephone contact, and direct visits. Teachers worked directly with students on the model for approximately 2 months.

Instrumentation

The *Goal Attainment Scaling* (GAS) process (Kiresuk et al., 1994) was used identically in this study and the two previous adolescent studies (Agran et al., 2000; Wehmeyer et al., 2000) to measure goal attainment and to determine model efficacy. According to Carr (1979), the GAS “involves establishing goals and specifying a range of outcomes or behaviors that would indicate progress toward achieving those goals” (p. 89). Each student’s GAS scale was prepared with five potential outcomes identified by the student or the teacher as soon as the individual goals were set using the model. These outcomes determined a continuum for knowing when a goal was achieved, from the most unfavorable to the most favorable outcomes on a 5-point scale. The midpoint on this scale is the *expected outcome*; that is, what teachers would consider a satisfactory outcome from the instructional process. Using a raw-score conversion key for numerical values assigned to each outcome level of the *Goal Attainment Scaling* developed by Cardillo (1994), raw scores can be converted to standardized *t* scores with a mean of 50 and a standard deviation of 10 to allow comparison between goal areas and participants independent of the particular goal area.

When instructional activities were completed, the teacher returned to the five potential GAS outcomes and identified the outcome that most closely matched the student’s actual achievement, and the researcher asked the students about their outcome. The research team talked with students and assisted them in selecting the outcome description that was closest to their own perception of goal completion, indepen-

dent of the teacher’s evaluation. Students from Grades K through 3 were able to discuss their goal progress, as they had just completed Phase 3 of the model questions—essentially a series of questions to support evaluation. Scoring, based on the GAS process as described previously, was then completed. Research personnel also gathered information on student knowledge about an understanding of goals and interests using questions asked before and after using the model. These questions were adapted from the *American Institutes for Research Self-Determination Scale* (Wolman, Campeau, Dubois, Mithaug, & Stolarski, 1994). The students were asked whether they knew what the word *interest* meant, whether they could name one of their interests, whether they knew what the word *goal* meant, and whether they could give an example of a goal, yielding a *yes* or *no* response for each question.

To gather social validation information, after data collection was completed, the 14 teachers filled out a 16-item questionnaire reporting their opinions about the *Self-Determined Learning Model of Instruction*. Students were asked how they felt about their goal outcomes.

Analyses

GAS scores were calculated, and results, including the mean score and standard deviation, were determined for the overall group and for each grade and special education category, for both teacher- and student-rated scores. A paired-sample *t* test was conducted to examine differences on teacher and student GAS scores and a chi-square test was used to compare teacher-rated GAS scores by grade level. We examined the significance of changes between pre- and postinstruction on goal and interest questions using a paired-sample *t* test for significance of changes and presented the relevant data in frequency format.

RESULTS

Model Efficacy

The mean teacher-rated GAS score was 52.90 (ranging from 30 to 70). The mean student-rated GAS score was 54.30 (ranging from 40 to 70). Both means indicate that goal attainment was on average at or slightly above what was expected by teachers (who determined the original outcomes). Table 2 provides GAS scores by grade level and special education category. In all, only 12% of teacher-rated goals were at or below 40, with 34% rated at 60 or higher, indicating that more students exceeded expectations than failed to achieve them. There were no significant differences between student and teacher GAS scores on a paired-sample *t* test; however, the average scores of students with mental retardation were rated somewhat higher by students than by teachers. Two of the students with mental retardation rated goals identical with their teachers, four of the student ratings were only 1 standard

deviation ($SD = 10$) above their teachers', and one student's score was 3 SD (30) above the corresponding teacher rating. Each of the four grade levels (K–3) had average mean GAS scores greater than 50, indicating that the model was effective for younger as well as for older students. There were no significant differences on GAS scores by grade, $\chi^2(18, N = 50) = 13.54, p = .76$. An analysis of GAS scores by goal content area also yielded no significant differences, $\chi^2(24, N = 50) = 26.22, p = .34$. Forty-one of the students set an academic goal, 9 students had a behavioral or social goal. All goals were appropriate for the particular grade level (e.g., students in kindergarten set goals in counting, following directions, and writing names). Within academic goals, subject area goals included reading/prereading, ($n = 16$), math and number concepts ($n = 11$), handwriting ($n = 9$), and spelling ($n = 5$). The model was equally effective for each of these

areas, as shown in Figure 5, with all areas yielding scores above 50.

Goal and Interest Knowledge

Figure 6 depicts student responses to the goals and interest questions. The majority of students were able to name one or more of their own interests both before and after instruction using the model, but on the three other questions, students showed improvement after intervention. There were significant differences between pre- and posttest, $t(49) = -2.22, p = .03$ (two-tailed) on the paired-samples t test for the question concerning knowledge of the meaning of the word *goal*. Students were also able to provide significantly more goal examples, $t(49) = -1.95, p = .05$ (two-tailed). Moreover, teachers were asked before and after using the model whether a stu-

TABLE 2. Student and Teacher Average Ratings of GAS on Goals Set Using the SDLMI

Grade/Disability	n	Mean GAS score	
		Student rated	Teacher rated
K	5	50.00	56.00
Grade 1	6	60.00	60.83
Grade 2	9	55.50	51.11
Grade 3	30	53.50	51.33
Learning disability	21	54.28	51.66
Speech impairment	5	59.00	63.00
Gifted	2	65.00	57.50
Mental retardation	6	52.50	42.50
No label	16	52.18	54.68

Note. GAS = Goal Attainment Scaling; SDLMI = Self-Determined Learning Model of Instruction. A GAS converted t score of 50 represents an acceptable outcome (that students learned the goal or skill). Scores of 40 or below indicate the student did not achieve an acceptable outcome, and scores of 60 and above indicate the student's progress exceeded expectations.

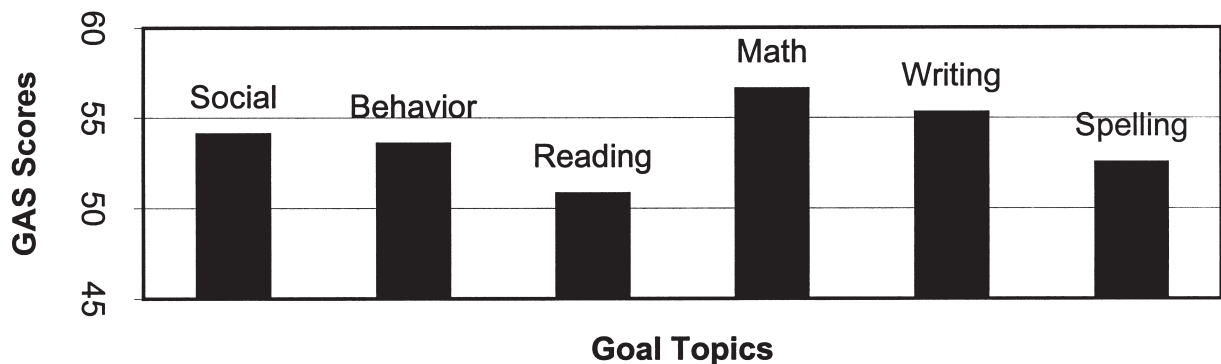


FIGURE 5. Goal Attainment Scaling scores ($M = 50, SD = 10$) by goal topic. Scores represent average of teacher ratings and student ratings of student goals.

dent knew that a goal is something that you want to do or learn. Prior to the intervention, teachers indicated affirmatively (i.e., student did know) for 15 students, whereas after the intervention, teachers indicated that 40 of the 50 students knew this information.

Social Validation Information

Teachers indicated that they perceived positive student changes in either behavioral or academic performance as a function of the intervention for 42 of the 50 students. All 14 teachers reported that the *Self-Determined Learning Model of Instruction* was useful in their classrooms and that they would continue to use the model in their work with children. Eight teachers (57%) indicated that they had shared information about the model with a colleague. When asked if students shared unsolicited comments about the model with them, 8 teachers (57%) reported that this had occurred. One teacher said that students having success wanted to share it, and another said that a student volunteered, "I am working on my goal! Look here!" After completing Phase 3 of the model, students generally reported that they felt good about meeting their goals, and many students had ideas for other goals to achieve.

Another teacher whose students were working on academic subjects said that her students were excited to do better in spelling and reading and had shared that information with her. This teacher had met with a small group of students to talk about "what they wanted to do or learn" in spelling or reading. Each of the students set an individual goal related to something that he or she needed to accomplish: study spelling words for 15 minutes per day and improve in spelling; learn 20 new sight words over several weeks' time by reading, writing, and practicing the words in context; or working on printing words with spaces between them, rather than one long continuous stream of letters. These goals were addressed using the student questions in the model framework. Individual students had various reasons why they might have trouble

accomplishing the goals, but each of the children was able to set a plan and, later, to evaluate his or her progress using the model. One teacher who supported students in a resource setting said that she realized that she could give up some of her power as a teacher and let the students have more control over what they wanted to do. Students typically set realistic goals that showed some perception of what they needed to accomplish, as teachers provided scaffolding for this activity. As with the two field tests described previously, student goals were set in conjunction with teacher support to work on academic or social skills that were a need for the particular student. The process of working through the model questions provides both students and teachers with a way to address needs, limitations, barriers to success, and accomplishments. When asked, even the youngest students were able to identify some particular need that aligned with standards or benchmarks for progress, either independently or with some negotiation with the teacher. Other examples of elementary goals set by students are listed in Figure 7. Although self-determination is a concept that implies independent action, only through shaping and instruction can students learn to become better choice and decision makers, as well as learning problem solving and goal setting.

A teacher of younger participants said, "It was very interesting to see what my students wanted to learn at school—that they did have goals and did not come to school just 'to play.'" One younger student with mental retardation set a goal to learn the symbols that were beside her name and her peers' names on class work and in storage areas. There was no particular expectation on the part of the teacher for this to happen, but the student wanted to accomplish this task and did so using the model. For example, Mary's name was followed by a flower symbol; John's name had a train beside it. The student practiced drawing the symbols in her free time with teacher guidance, learned the various symbols, and even began to learn to print each of her classmate's names. The student was pleased with her progress and set the additional goal of learning to print more names.

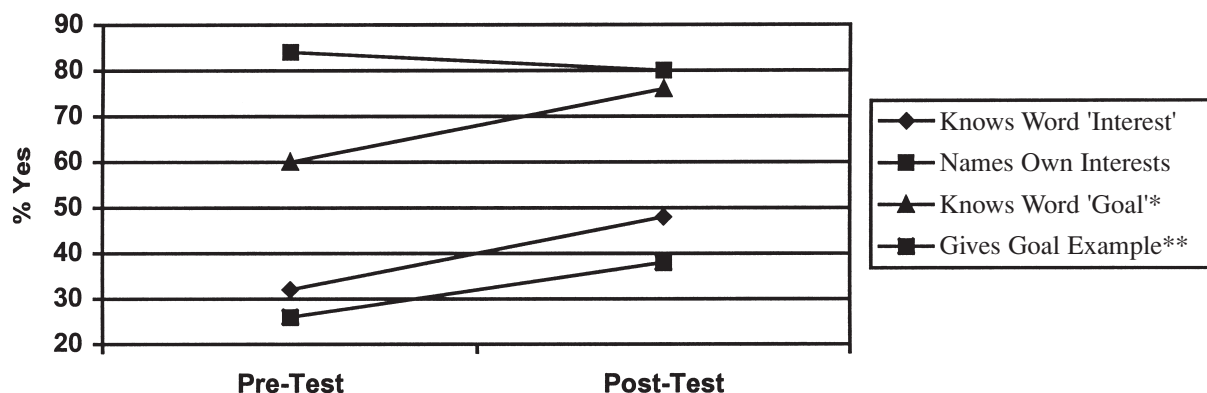


FIGURE 6. Changes in student responses to goal and interest questions. * $p = .03$. ** $p = .05$.

DISCUSSION

The results from this study support the use of the *Self-Determined Learning Model of Instruction* with early elementary students. The findings from the GAS process indicate that students as young as 5 years of age can set goals and work through the model with the assistance and support of their teachers. Teachers in early elementary grades were able to provide the support and guidance that younger children with and without identified disabilities (i.e., Title I students and students being evaluated for special needs) needed to complete the process.

That student ratings and teacher ratings showed no significant differences provides indirect evidence that active student involvement in the educational process, even at this young age, can assist students in evaluating their own progress and potential outcomes. Although further support may be needed for young students with mental retardation in the self-evaluation of their accomplishments, as indicated by the variability of ratings between teachers and students within this category, this process of goal setting is still a viable option for students and teachers. The *Self-Determined Learning Model of Instruction* is designed to help students self-monitor progress toward their goal and self-evaluate if they are making adequate progress. If the students determine that their progress is not adequate, they can return to either the goal-setting activities of Phase 1 to revise their goal or to the action planning activities of Phase 2. We noted anecdotally that when students determined through Phase 3 self-evaluation activities that they were not progressing toward their goal, they were usually able to discuss what went wrong and what they did achieve to the same degree as the teacher could. Students told us that they did not try to work on their goal much or that they let other activities take precedence. This was achieved by using the model questions to guide student evaluation and discussion with the teacher of what actions were taken (Phase 3, Question 9), which barriers had been removed (Question 10), and what had changed (Question 11). The model provides a chance for students to verbalize their concerns as well as their success, in order to move toward self-regulation and building their capacity for achievement and later self-determination.

Teachers did identify some limitations to the model, including the time needed to learn the model, the educational supports that are implemented through the model, and the need to maintain daily contact with younger students. Nevertheless, although these limitations need to be addressed to widen the appeal and utility of the *Self-Determined Learning Model of Instruction*, the overwhelming satisfaction with the model indicated by teachers and the students' progress suggest that the model has potential value and utility with younger children. Study limitations include the small number of participants recruited from kindergarten and first-grade classes, mainly due to the smaller number of children who were identified for special education services and the small number of

Kindergarten

1. Learn to count to 20.
2. Learn to follow directions in school and at home.
3. Learn to write own name.
4. Learn to write symbols used by other students.

First grade

1. Improve classroom behavior to avoid negative results.
2. Learn to read sight words in context in three stories.
3. Improve handwriting by writing numbers and letters neatly.

Second grade

1. Follow classroom rules during general education math class.
2. Write numbers and their names in words (e.g. 10, *ten*).
3. Improve spelling.
4. Use computer to write paragraphs and print them to read.

Third grade

1. Learn math facts—multiplication.
2. Learn addition and subtraction with regrouping.
3. Improve writing by consistent use of correct punctuation.
4. Improve grades by checking work before turning it in to teacher.

FIGURE 7. Examples of goals set by students in Grades K–3.

teachers of young students who volunteered for the project. Future studies of the model in early elementary populations must target younger students to corroborate these results. Although recruitment efforts centered on obtaining an equal number of students in every grade, younger students were not equally available on special education lists. Also, teachers of older students were more likely to volunteer for the study, due to their understanding of the concept of self-determination.

Practical Implications

This study describes a model of teaching that teachers can use to support the development of self-determination, student involvement, and other capacity-building concepts for children in the elementary grades. The results clearly indicate that young children can participate in goal selection and work

through the phases of the *Self-Determined Learning Model of Instruction* to reach goal attainment. Children with disabilities often need extra instruction and various modifications to curricula for learning. Using this teaching model in the context of such instruction supports student–teacher dialogue and clear expectations for learning. Furthermore, as students and teachers work together to talk about students’ goals, there are numerous opportunities to promote student-directed learning activities and to enhance self-regulation and self-monitoring skills. By using the teacher objectives embedded in the teaching model framework, such as enabling students to identify strengths and needs, teaching students to prioritize needs, working on student-directed learning strategies, and supporting student self-evaluation, teachers can build capacity within their students while working on a contextually relevant goal that addresses an educational standard. The goal can relate to subject matter designated by the teacher (e.g., “Let’s decide on a goal that will be helpful in spelling class”) or can be related to an overall need for increased communication within all classes (e.g., “What about raising your hand and offering answers once/twice a day in every class?”) to increase overall class participation and communication skills.

With the demands on the time of teachers—especially related to the general education curriculum and the many standards and benchmarks delineated—it is difficult to fit in a separate curriculum on self-determination. One way to do this is using the *Self-Determined Learning Model of Instruction* to integrate elements of self-determination into daily learning. Although teachers are becoming more aware of the need for including self-determination in the curricula, only a small number are actually directly teaching components of self-determination (Thoma, Nathanson, Baker, & Tamura, 2002).

The teachers involved in the study provided suggestions for implementing the model with younger children. A third-grade teacher thought that students in her classroom could organize into small groups to use the model to work together and remind each other of their goals. Another teacher planned to introduce the model at the beginning of the year to help monitor progress every 6 weeks. She indicated that the model was easy to implement in conjunction with any curriculum, because various subjects could be woven into the model structure.

Another potential value for the model that was identified through this study was its use as a tool to prepare students for and involve them in their annual Individualized Education Program (IEP) meeting. Active student involvement in the IEP meeting when transition goals are discussed is required by the Individuals with Disabilities Education Act (IDEA) of 1990, and by involving students in the goal-setting and planning process early on, students should be better prepared to play a meaningful role when they are older (Wehmeyer & Sands, 1998). Only 3 of 14 teachers in our study reported that students at their elementary school regularly attended their IEP meetings.

We believe it is important to begin to focus instructional attention on self-determination earlier, despite the fact that there are valid reasons why *young* children are not seen as self-determined. Although young children are not yet developmentally or emotionally capable of being autonomous and self-regulating, this does not abrogate the need to enable all children, including children with disabilities, to learn and develop the attitudes and abilities they will need to achieve this outcome. Self-determination may be an adult outcome, but it is only achieved if there is a lifelong focus on its development and acquisition (Sands & Wehmeyer, 1996).

It seems evident from this study that (a) involving students in setting goals; (b) helping to make students accountable for their learning through being part of the goal setting, planning, and evaluating process (model Phases 1–3); and (c) providing opportunity to evaluate progress together are valuable teaching tools. The success of the teachers and children in this study suggests that young children *can* benefit from instruction that incorporates opportunities to self-regulate problem solving and to self-direct learning. By doing so, we better prepare our young children to become self-determined adolescents and adults. ■

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AUTHORS' NOTES

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