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Does Problem-Solving and Goal-Setting Instruction Promote Self-Determination in Early Elementary Students With Disabilities?

Palmer, S. B., & Wehmeyer, M. L. (2002). Promoting self-determination in early elementary school: Teaching self-regulated problem-solving and goal-setting skills. *Remedial and Special Education, 24*, 115-126.

Self-determination, which is the ability to achieve self-determined goals, has been identified as a major contributing factor to future success. It is well documented that students with high-incident disabilities (such as ADHD, non-verbal learning disabilities, and behavior challenges) typically lack self-determination, which is correlated with lower levels of achievement academically, socially, and professionally (Wehmeyer & Schwartz, 1997).

Palmer and Wehmeyer studied a research-tested, self-determination model for early elementary students with disabilities. The study measured students' abilities to solve problems and set goals, two key factors linked to building self-determination. The authors propose that early intervention allows children to obtain more exposure to self-determination skills, which increases the likelihood that they will be able to apply these skills in adolescence when they become even more critical for success.

Method

Research design:

Palmer and Wehmeyer replicated an experimental study of the Self-Determined Learning Model of Instruction (Wehmeyer et al., 2000). The original model was designed for adolescents, but for the purposes of this study was adapted for elementary students. The authors employed a pre/post-test design and used only an experimental group to test the model. Scaling and measurement tools were used to evaluate student responses pertaining to goal setting, problem solving, and promoting future self-determination. The results analyzed teacher and student paired sample t-tests, teacher versus grade level chi-square tests, and pre/post-test goal and interest questions paired sample t-tests.

Participants:

Teachers and students were not randomly selected. The 14 participating K-3 teachers were nominated by administrators and given an honorarium for taking part in the study. The participating students (n=50) were all either receiving special education services or were currently within the special education referral process. The 32 boys and 18 girls involved in the study represented two states, five school districts, and eleven elementary schools.

Instruments:

The researchers used three different measurement tools to gauge the attainment of self-determination skills.

- 1) Using the *Goal Attainment Scale* (Kiresuk et al., 1994), teachers and students created goals with predicted and scaled outcomes. The researchers later converted teacher and student scales to standardized numeric scores in order to analyze the data.
- 2) Students were also asked pre/post-test questions taken from the American Institutes for Research *Self-Determination Scale* (Wolman et al., 1994) and adapted for early elementary students. The questions assessed student knowledge of interests and goal setting.
- 3) Teachers completed a 16-item questionnaire regarding their views about the Self-Determined Learning Model of Instruction and students were asked how they felt about their goal outcomes.

Intervention:

Teachers trained in the Self-Determined Learning Model of Instruction delivered the intervention in large group and one-on-one settings. Materials were adapted to be developmentally appropriate. The project consisted of three phases; each phase included four questions that students needed to answer about meeting their self-regulated goals. The major themes of each phase were to: 1) Set a Goal, 2) Take Action, 3) Adjust the Plan or Goal. Teachers were given well-articulated objectives and educational supports for all phases of the intervention, which was implemented over two academic years (1998-1999 & 1999-2000).

Results:

1) Goal Attainment Scaling (GAS)

The converted t-scores ranged from 30-70 (with a score of 50 representing student attainment of his/her goal). The mean teacher score was 52.90 with a mean student score slightly higher at 54.30. Only 12% of teacher scores were at or below 40, and 34% scored 60 or higher. These results indicated that many more students exceeded expectations than failed to meet their goals.

2) Pre/Post-Test

Pre- and post-tests focused on student understanding of the terms “goal” and “interest.” Students were consistently able to cite their own personal interests on both pre- and post-tests. Scores for defining the term “goal” increased from -2.22 pre-test to a .03 post-test on a paired sample t-test (two-tailed). Students also improved in their ability to state examples of personal goals [$t(49) = -1.92, p = .05$ (two-tailed)].

3) Teacher Questionnaire

The teacher questionnaire revealed valuable perceptual information about the study and the overall model. Fourteen teachers completed the questionnaire and all indicated they would continue to use the Self-Determined Learning Model of Instruction.

Teachers attributed successful student outcomes in academics and behavior in 42 of the 50 participating students to this intervention. The questionnaire also allowed space for personal narrative and many teachers included positive anecdotes about student successes that they attributed to the model.

Implications:

Palmer and Wehmeyer stress three implications:

1) The study is important because it suggests young students can partner with teachers to become more self-determined and thus more successful. Furthermore, integrating the model into various content areas allows for increased communication and instruction in goal setting, prioritizing, student-directed learning, locating strengths and weaknesses, and self-evaluation.

2) By exposing students to goal setting and self-regulation early in their academic career, students will more likely participate in and understand IEP meetings in the future.

3) Severely low IQ (below 70) students might need even further support from classroom teachers to fully comprehend and use the Self-Determined Learning Model of Instruction due to the high variability between teacher and student GAS scores.

Other important implications not cited by Palmer and Wehmeyer include:

1) All students may benefit from the Self-Determined Learning Model of Instruction. The student sample ranged from 5-year-olds to 9-year-olds and from very low IQ to gifted; throughout all subgroups there was little variability between student and teacher GAS scores. Though the design and study was directed towards students with disabilities, the utility of the model suggests it could benefit all students.

2) This model could be used to support inclusion in the classroom. By embedding the model into the classroom environment, students with and without disabilities participate in problem solving and goal setting activities at their developmental level. Including all students in this process helps to normalize the special education process by giving all students a lens to view self-improvement and to recognize individual strengths and weaknesses.

3) Because the Self-Determination Learning Model of Instruction allows for great flexibility in delivery (from small group to full classroom), can be adapted according to developmental stages, and is non-content specific, school counselors and other educators seeking outcomes related to student self-determination and motivation should view this intervention as a potential tool.

Critical Analysis:

The authors suggest that a larger sample size of primary students and teachers (particularly K-1) would add validity to the study. Palmer and Wehmeyer attributed the relatively small number of participating students and teachers at this level to the fact that primary students are less likely to be identified for special education and because primary teachers are less familiar with the principles of self-determination. Other improvements not identified by the authors, but which could also add validity to future studies and increase the implications of the Self-Determined Learning Model of Instruction include:

1) Randomize the selection process for participating teachers, thus helping control for contamination due to teacher bias, interest, and investment.

2) Increase the sample size of students to include students with and without disabilities. This would allow the data to be disaggregated to yield more complex comparisons.

3) Create a control group vs. an experimental group design, allowing outcomes to be less likely attributed to contradictory variables.

Conclusion:

Palmer and Wehmeyer conducted a sound study measuring the Self-Determined Learning Model of Instruction when applied to early elementary students with disabilities. This study reveals three potential implications that are important to school counselors: 1) it reaches a wide range of students; 2) it supports inclusion when taught to all students; 3) it can be embedded within multiple content areas and instructional settings. Palmer and Wehmeyer's study also represents an opportunity to view other bodies of research as a means to inform and enhance future school counseling practice. By collaborating with other professionals and using the best possible tools available, practitioners can streamline their activities, pool resources, and effect positive student outcomes.

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Resources:

Argan, M., Blanchard, C., & Wehmeyer, M. (2000). Promoting transition goals and self-determination through self-determination through self-directed learning: The Self-Determination Model of Instruction. *Education and Training in Mental Retardation and Developmental Disabilities, 35*, 351-364.

Kiresuk, T. J., Smith, A., & Cardillo, J. R. (1994). *Goal attainment scaling: Applications, theory, and measurement*. Hillsdale, NJ: Erlbaum.

Wolman, J., Campeau, P., Dubois, P., Mithaug, D., & Stolarski, V. (1994). *AIR self-determination scale and user guide*. Palo Alto, CA: American Institutes for Research.

Wehmeyer, M., & Schwartz, M., (1997). Self-determination and positive adult outcomes: A follow-up study of adults with mental retardation or learning disabilities. *Exceptional Children, 63*, 245-255.

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