Social Problem-Solving Ability and the Employment of Individuals Exiting Special Education Programs

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Abstract

Employment is often seen as a measure of adult success. Employment outcomes for individuals with disabilities are a great concern. Students with disabilities exiting special education programs often face underemployment or unemployment. Often, when employed, such individuals work fewer hours, make less money, and less likely to be promoted than their peers without disabilities.

Individuals with disabilities lose their jobs in the community due to social deficits at least as often as production deficits. Training to remediate social interaction deficits has often focused on learning specific behaviors to fit specific circumstances. Social problem-solving is a cognitive behavioral strategy designed to teach individuals to think through problem situations. This procedure provides a framework for recognizing, evaluating, and generating, selecting and evaluating alternative solutions to social problems (i.e., problems with money, people and work). This strategy may be applied to any problem situation, increasing generalization, and improving social interactions. This improvement in social interactions may lead not only to more success in the workplace, but in all areas of adult life.

This paper reviews the employment data of former special education students; defines social problem-solving, social competence, social skill, and social awareness; describes the 5-step process of problem solving and discusses assessment and training strategies.

The employment status of adults with disabilities is a natural concern. Studies have shown that adults with disabilities are less likely to be employed than those without disabilities Further, if they are employed, they are more likely to be employed part-time and earn less than their peers without disabilities (Wagner, Cadwallader, & Marder, 2003; Wagner, Newman, Cameto, & Levine, 2005).

Production problems and social interaction problems are the two primary reasons individuals with disabilities lose their jobs in the community. Research has indicated adults with disabilities lose their jobs due to inadequate social interactions at least as often as production problems (Bullis, Nishoika-Evans,Fredericks, & Davis, 1992; Butterworth & Strauch, 1994; Greenspan & Shoultz, 1981).

To address this problem, researchers and practitioners have sought to improve the social competence of individuals with disabilities (Wehmeyer & Kelchner, 1994). Many have employed behavior modification techniques (e.g., modeling, consequence management, peer-mediated strategies, self-management training, and social skills training) to teach social skills for employment (e.g., Breen, Hating, Pitts-Conway & Gaylord-Ross, 1985; Karlan & Rusch, 1982; Matson & Senatore, 1981; Morgan & Salzberg, 1992).

These social skill training approaches focus on teaching the skills needed to interact, and have been effective in teaching skills in the training setting. Unfortunately, this skill training alone has not resulted in increased employment outcomes (Wagner, Cadwallader, & Marder, 2003). The learned skill does not readily generalize to the employment setting. This paper will summarize employment data for students who were served in special education programs; define social competence, social skills, and social problem solving; review assessment procedures for social problem-solving; and highlight training programs focused on teaching social-problem solving skills in employment settings.

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Employment Outcomes of Adults Exiting Special Education

The employment rate of former special education students has never equaled the rate of peers without disabilities (e.g., Benz, Yovanoff, & Doren, 1997; deBettencourt, Zigmond, & Thurston, 1989; Wehmeyer & Schwartz, 1997; Yovanoff, & Doren, 1997). Overall, employment rates have ranged from 40% to 80%. Of those employed, those with disabilities tend to have entry level jobs, work fewer hours, earn less money, and rarely receive benefits. A summary of the employment outcome studies is presented in Table 1.

Social Skills, Social Awareness, and Social Competence

Researchers have used many terms to describe those skills necessary for adult adjustment. Three of the terms commonly used to describe such skills are: (a) social skills, (b) social awareness, and (c) social competence (Black & Langone, 1997; Greenspan & Granfield, 1992; Huang & Cuvo, 1997). Though these terms are

closely related, they are not synonymous (Sabornie & deBettencourt, 1997). Each will be defined below.

Social Skills. Two representative definitions of social skills will be presented. Hersen and Bellack (1977) defined social skills as the expression of both positive and negative feelings in the interpersonal context without loss of reinforcement. Such skills should be demonstrated in many contexts and involve both verbal and non-verbal behaviors. Chadsey-Rusch (1992) defined social skills as learned, rule-governed behaviors that illicit either positive or neutral responses by others. They are situation specific, vary according to social context, and involve both specific observable and non-observable cognitive elements. Social skills training programs are commonly used to teach social skills to students with disabilities (Krouse & Sabousky, 2001).

Social Awareness. Greenspan and Shultz (1981) defined social awareness in the workplace as "the individual's understanding of people (co-workers, supervisors, customers, etc.) and work settings" (p 28). Individuals must know how to interpret the social situation which enhances the ability to better choose a strategy.

Social Competence. The definitions for social competence are so numerous that Dodge (1985) suggested there are as many definitions as there are scientists researching the subject. Odom and McConnell (1992) defined social competence as the effective and appropriate use of social behavior in interactions with an individual or with a group

Siperstein (1992) adds that social competence reflects the marriage of social knowledge (social awareness) and social action (social skills). This marriage expands focus from an emphasis on teaching behavioral responses (social skills training) to the teaching of the underlying social-cognitive processes that seem to have a greater potential to influence the development of socially competent behavior.

Social skills training has been used to teach specific behaviors missing from the individual's skill set. When used with people with disabilities, this behavioral-based training approach often results in an increase in appropriate social responses in the training setting (Soto, Toro-Zambrana, & Belfiore, 1994). Unfortunately, this increase in social skills does not guarantee an increase in social competence.

Greenspan and Granville (1992) have developed a model of social competence that may explain why traditional social skills training programs have not resulted in increased employment outcomes for individuals with disabilities. According to Greenspan and Granville, there are two intellectual aspects of social competence, practical intelligence and social intelligence. Social intelligence is made up of social skill and social awareness. The training approaches described above (i.e., modeling, consequence management, peer-mediated strategies, self-management training, social skills training) increase social skills but do not necessarily increase social awareness. In order to effectively increase social competence, training procedures must address the social-cognitive abilities of the individual as well (Siperstein, 1992).

The teaching of social problem-solving provides a framework for interpreting the social situation and generating appropriate alternative behaviors. This approach teaches cognitive skills which may increase social competence and, in turn, job retention (Wehmeyer & Kelchner, 1994).

Researchers began to develop interventions and use problem-solving techniques to address not only the academic deficits but also many of the interpersonal problems faced by individuals with disabilities. These interventions were referred to as interpersonal problem-solving or social problem-solving (Browning & Nave, 1993; Castles & Glass, 1986; Foss, Autry & Irvin, 1988; O'Reilly & Rusch, 1992).

Definitions of Problem-Solving

D'Zurilla and Goldfried (1971) defined the term problem as a specific "situation" or "set of related situations" that an individual must respond to in order to effectively function in his or her environment. The authors point out that this definition differs from the traditional intra-psychic definition of problem held by clinical psychologists.

A problematic situation refers to one in which the individual has no immediate effective response when confronted with the situation (Davis, 1966). Because no effective response exists, the individual must use a problem-solving procedure to discover a solution.

The solution to the problem can be defined as a response or a set of responses which change the situation so it is no longer problematic. The solution also must maximize positive consequences (e.g., social approval, pleasant emotional reactions, avoidance of additional problematic situations) while minimizing negative consequences (e.g., censure, negative self-perception). The authors note that the emphasis is not placed on the solution to the problematic situation, but on the process used to solve the problem (D'Zurilla & Goldfried, 1971). The problem-solving process has been defined in many models.

Though the problem-solving models vary somewhat in wording and categorizations, each contains five general stages. The stages are (a) general orientation, (b) problem definition, (c) generation of alternatives, (d) decision making (i.e., evaluation and selection), and (e) verification (D'Zurilla & Goldfried, 1971). Each stage will be described below.

General Orientation. The way in which an individual approaches a problem situation can affect the way he responds. D'Zurilla and Goldfried (1971) suggest the following set of attitudes that may increase the likelihood of independent problem-solving. The set includes: (a) accept the fact that problems are a normal part of life and it is possible to cope with most problem situations effectively, (b) recognize problem situations when they occur, and (c) inhibit the immediate "impulsive" response or tendency to "do nothing."

This set of attitudes becomes even more vital for individuals with disabilities and must be built in to the training. Mercer and Snell (1977) found that individuals with disabilities are much more externally oriented than their peers without disabilities. This external locus-of-control leads to the attitude that outside forces such as fate, chance, or other people control the individual (Thomas & Patton, 1994).

This sense of lack of control is often compounded by repeated failures in school and social situations. If this occurs, individuals with disabilities begin to doubt their abilities and begin to rely only on external cues to solve problems. This reliance on external cues leads to increased dependence, even when the individual has the ability to solve the problem (Balla & Zigler, 1979).

Repeated failures lead to a cycle of failures. When the person with a disability

fails, he begins to expect to fail and therefore may not put forth the effort needed to succeed. This lack of effort may cause teachers and peers to lower their expectations for the person with a disability, leading to more failures. When facing a problem situation, a person with such a history may simply decide to ignore the problem and take no action (Thomas & Patton, 1994).

Problem Definition. This stage consists of defining all aspects of the problem situation, classifying information as relevant or not relevant, setting a goal for the solution, and examining any sub-problems or side issues (D'Zurilla & Goldfried, 1971). The individual must often respond to the meaning conveyed in cues, rather than the physical objects or events that surround the problem situation (Gange, 1959). Individuals with disabilities have more difficulty than their typical peers in organizing this input stimulus (i.e., cues) for storage and recall (Spitz, 1966). If the individual does not respond to the essence of the problem, a satisfactory solution is unlikely.

Generation of Alternatives. This stage involves generating as many alternate solutions to the problem situation as possible. Many refer to Osborn's (1963) model of brainstorming for generating solutions. The model has four basic rules: (a) criticism is ruled out, (b) free-wheeling is welcomed, (c) quantity is wanted, and (d) combination and improvement are sought. Brainstorming is important because the greater the number of solutions the individual generates, the more likely the best solutions will be found (Osborn). Brainstorming has been an effective strategy for teaching increased generation of alternative solutions (Castles & Glass, 1986).

Decision Making. The next stage is to decide which of the alternatives generated is the best solution. This step involves the systematic evaluation of all the alternative solutions and selection of the most effective one. Nezu and D'Zurilla (1979) developed an effective strategy for increasing decision making skills. They taught individuals a criteria for evaluating the value and likelihood of particular outcomes. In the evaluation, four categories of outcomes were stressed: long-term, short-term, personal (i.e., effects on self), and social (i.e., effects on others and the community).

Verification. Verification is the last stage of the problem-solving process. In this stage the individual must examine the effects of the chosen solution after it has been carried out. The individual examines the consequences of the behavior and decides if the course of action was indeed the best alternative. Without verification, the individual may continue to select and implement ineffective solutions to the problem (D'Zurilla & Goldfried, 1971).

Though the models of problem-solving may vary, each contains the basic five stages discussed in this section. These stages are the essential elements of problem-solving and form the basis for training programs (D'Zurilla & Goldfried, 1971).

Assessment of Social Problem-Solving Skills

Butler and Meichenbaum (1981) suggest several modes of assessment should be used simultaneously to better understand the complex phenomena involved in the problem-solving process. Tests of capabilities, observations, and an ecological approach have been used to assess social problem-solving skills (Elksnin & Elkskin, 2001).

Tests of capabilities. Tests of social problem-solving ability can be administered in an interview fashion, or be completed individually. Some commonly used instruments include: Means-Ends Problem Solving (MEPS) (Platt & Spivack, 1975), The Problem Solving Inventory (PSI) (Heppner & Peterson, 1978), Social Problem-Solving Interview-Revised (SPSI-R) (D'Zurilla, Nezu , Maydeu-Olivares 2002), the Interpersonal Cognitive Problem-Solving (ICPS), a sub-test of the *ARC's Self Determination Scale* (Wehmeyer & Keltchner, 1995), and the Social Problem Solvey Survey (SPS) (Crites, 2007). Each will be described below.

The MEPS measures the ability of the pre-adolescent, adolescent, or adult to articulate a step-by-step process to a problem solution. The test is an "open middle" story completion measure that contains 10 social problem situations, each having a successful outcome. Subjects are asked to complete the story.

The PSI consists of 26, Likert-type, self-report items chosen to represent the five problem-solving stages. Factor analysis of the PSI indicates that three factors account for 69% of the variance.

The SPSI-R measures both the number and effectiveness of solutions generated to three problem scenarios. Individuals are read a problem scenario, asked what would happen next, asked whether they could solve the problem, and asked what would they do or say in the situation. The instrument yields a summary score based on the number and effectiveness of generated solutions.

ICPS presents the beginning and the ending for six problem scenarios. Participants are asked to provide the middle for the scenario. The scenarios depict interpersonal problem situations common to students in high school. Each answer is scored on a scale of 0 to 2. Provides clear examples to use in scoring and reports good concurrent validity with the Means-End Problem Solving (MEPS) (Platt & Spivack, 1975). SPS was developed to gather information about how individuals experienced and solved social problems; and the types of problem situations they encountered. The instrument yields three factor scores: strategy used to solve problems, experience with problem situations, and response to problems. Participants are also asked to generate solutions to two problem scenarios and provide an example of a problem they have encountered.

Observations. Direct observations of the individual in the work place are necessary to measure how well the individual actually responds to problem situations. Using direct observations may help the assessor discover performance deficits, while the tests of capabilities measure skill deficits (Spence, 2003).

Ecological approach. Gresham, Sugai, and Horner (2001) suggest using a more ecological approach to assessment. Conducting ecological inventories of the work place t may give researchers insight into when, where, and what types of problem situations occur in the natural environment. This information can be used to adapt the intervention to fit the individual's specific work environment.

Overall, Butler and Meichenbaum (1981) suggest using a variety of assessment instruments to measure problem-solving skills. They stress it is important for the practitioner to carefully assess the psychometric properties of each instrument before use.

Teaching Social Problem-Solving

Process training has been successfully used to increase the social problem-solving behavior of individuals with disabilities in the training setting. Below is a description of training studies designed to increase social behavior in employment settings using social problem-solving strategies.

Browning and White (1986) developed interactive video-based curricula to teach life enhancement skills to individuals with mild disabilities. This procedure teaches a five-step problem-solving process to increase problem solving. The training scenarios and solutions are presented via videodisc, enabling the program to be interactive. When the student selects a solution to the problem, the videodisc presents that solution and depicts the consequences associated with that solution. This helps the student to acquire experience selecting alternative solutions and judging the effectiveness of the solution.

Browning and Nave (1993) tested the effectiveness of the videodisc training program developed by Browning and White (1986) described above with students with mental retardation and learning disabilities. Results revealed an increase in post-test scores over pre-test levels, indicating individuals acquired the trained skills. This short intervention did not provide follow-up data to indicate whether skills were maintained or generalized.

Castles and Glass (1986) compared the effectiveness of social problem-solving, social skills training, and a combination of the two, to increase the social competence of individuals with disabilities. Social competence was assessed pre and post-treatment using a locus-of- control scale, a self-efficacy scale, a measure of interpersonal problem-solving, and a measure of social role play.

Results indicated that the problem-solving scores of the social problem-solving group increased, as did scores for the combination group. The social skills group, however, made no gains on the problem-solving measure. Another finding indicated there was a positive correlation between the number of solutions generated and the quality of the solution. The social skills group and the combination group increased on role-playing measures, while the social problem solving group did not. Results failed to generalize to untrained scenarios in all groups.

Foss, Auty, and Irving (1988) conducted a comparative analysis of modeling, problem-solving, and behavior rehearsal for teaching interpersonal skills to high school students with disabilities. The study focused on teaching interaction skills with co-workers and with supervisors. While all three methods were somewhat successful in increasing acquisition of skills, the problem-solving procedure was the most effective in increasing skills, but no data were provided on maintenance or generalization of skills.

Park and Gaylord-Ross (1989) compared the effectiveness of a problem-solving procedure versus a role-play procedure to increase social behaviors of students with disabilities in the work setting. Both procedures were effective in the training setting, but only the problem-solving procedure produced generalized results into the work setting.

To address the potential problem of generalization present in any behavior change program, Hughes and Rusch (1989) used multiple exemplar training combined with self-instruction to teach individuals to solve work-related problems. Two students with severe mental retardation were taught to solve problems using verbalized self-instruction steps. The procedure produced increases in target behavior in both trained and untrained situations. Generalization was attributed to multiple exemplar training.

Wehmeyer and Kelchner (1994) conducted a study using the MEPS procedure, described previously, to measure the alternative solution generation of two groups of individuals with disabilities; one group with internal locus-of-control, the other with external locus-of-control, compared to a control group of those without disabilities.

Results indicated those with disabilities employ limited means to problem-solving and generate fewer alternative solutions overall than those without disabilities. Additionally, those with an internal locus of control did better overall than those with an external locus of control.

O'Reilly, Lancioni, and O'Kane (2000), used a problem solving approach to teach social skills in the workplace. These researchers taught individuals with traumatic brain injuries targeted social skills. Results indicated there was skill increase in the training setting and an increase in skills which generalized to the workplace.

Crites and Dunn (2004) tested the effectiveness of the videodisc procedure developed by Browning and White (1986) to teach students with moderate mental retardation to solve social problems. Results indicated the students in the treatment group were able to recall the 5-step procedure for social problem solving, and were able to generate more possible solutions to problem scenarios than those in the control group post-training. Overall, teaching social problem-solving strategies to individuals with disabilities is an effective method to increase interaction skills. Increases in social behaviors due to successful problem-solving may, in turn, increase job retention when the individual enters the work force

This paper section has presented the definition and theoretical foundations of problem-solving, illustrated how problem solving can be applied to social situations, and described assessment and training techniques. Increasing social problem-solving may be instrumental in increasing social competence and, in turn, increase job tenure for individuals with disabilities.

Implications for assessment and training

- Individuals with disabilities entering the work force need to be assessed for social problem-solving ability. Such assessments could be completed during the vocational evaluation.
- Training to remediate both skill deficits and performance deficits may be undertaken in either a vocational training setting or on the job.
- Individuals who receive social problem-solving training may achieve greater success in the workplace.

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