

THE EFFECTS OF PSYCHOSOCIAL FACTORS
ON CAREER AND WORKFORCE DEVELOPMENT FOR STUDENTS
WITH LEARNING DISABILITIES

Submitted by

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Abstract

Individuals with learning disabilities are at a disadvantage when it comes to career and workforce development. Certain factors such as socioeconomic factors, parent's educational level and occupations, as well as grade point average and previous work/volunteer experience affect factors that are imperative to the successful transition from school to work such as decision making, problem solving and career exploration. This segment of the population holds much potential for the advancement of our workforce and economy; however, they seem to be an untapped resource even though certain laws and incentives have been put into place to increase the hiring of these individuals. After identifying factors that negatively affect their workforce development, it is important that courses and/or workshops are put into place that will assist them when maneuvering through the challenges that come along with making decisions about careers and eventually moving into the workforce.

Introduction

Learning disabilities (LD) affect approximately 15% of the US population and should not be confused with other disabilities such as blindness, hearing impairment, autism, mental retardation or behavioral disorders (LD Online, 2006). Individuals with LD “show significant deficits in one or more areas of academic achievement” and it is not caused by any of the above mentioned disorders (O'Connor & Spreen, 1988, p. 148). LD occurs when the learning process is hampered due to problems within the central nervous system which results in an inconsistency between the individual's IQ and academic achievement (Blair & Scott, 2002). They also point out that over the past 20 years, the rate of individuals with LD being placed in special education classes has doubled while rates for other disabilities had remained relatively the same.

Jagger, Neukrug, and McAuliffe (1992) noted that individuals with LD are more likely to make inconsistent career choices because they have failed to understand how their personality characteristics relate to employment; therefore, they continue to be unemployed, underemployed

or in jobs that are not suitable to their personalities. The career exploratory activities are oftentimes limited for individuals with LD in high school because the majority of their time may be spent on academic remediation instead of preparing for and exploring careers (Luzzo, Hitchings, Retish, & Shoemaker, 1999). As a result, they are not aware of career options, have not developed appropriate career-decision making and problem solving abilities, and have not acquired the necessary skills to gain and maintain employment (Hitchings et al., 2001).

Research has shown that individuals with disabilities, including learning disabilities, are at a disadvantage when it comes to career development and exploration in that they are more likely to be unemployed or underemployed than peers without disabilities and less likely to seek out and obtain post secondary education or additional job training (Bolton, 1975; Humes & Hosenshil, 1984; Ochs & Roessler, 2004; Osipow, 1976; Roe, 1956). Conte (1983) pointed out that individuals with disabilities have limited opportunities for career development and Strohmer, Czerlinski, Menz and Engelkes (1984) noted that these limited opportunities lead to career indecisions. Murray (2003) noted that individuals with disabilities are less successful than their peers when making the transition from high school into the world of work or postsecondary school. They have less time to investigate and try out career-related courses and activities because they may have been deemed unnecessary (Luzzo, 2000) and are significantly less able to select vocational goals appropriate for their disability and less knowledgeable about jobs and occupations (Rojewski, 1993).

Because individuals with learning disabilities are already at a certain disadvantage when it comes to career and workforce development, it is important to note factors that can either help or hinder this process. Several factors, such as socioeconomic status (Blunstein, Juntunen, & Worthington, 2000), work experience (Blunstein et al., 2000; Ohler, Levinson & Sanders, 1995),

decision making (Hagner & Salomone, 1989; Luzzo, Hitchings, Retish, & Shoemaker, 1999; Ochs & Roessler, 2001), grade point average (O'Shea & Crook, 1985) and problem solving (Bullis & Cheney, 1999; Schlossbrg, 2001; Wolffe, 1996) have been shown to affect career and workforce development opportunities.

How these Factors Affect Career and Workforce Development

Income/Socioeconomic Status (SES)

It has been noted that there seems to be an increase in the occurrence of mental and physical disabilities among individuals in lower socioeconomic (SES) groups (Kaplan & Lynch, 1997). Schulenberg, Vondracek, and Crouter (1984) stated that SES incorporates the following factors: "parental and maternal education attainment, family income, and parental occupational status" (p. 130) and that SES is positively associated with occupational aspirations and expectations. Dillard (1976) found that youth from the higher SES groups had significantly higher levels of career maturity than youth from the lowest SES groups. In their study, Blair and Scott (2002) identified several "low-SES markers," such as late prenatal care, being unmarried, low education, and low birth-weight, as being factors that could predict a later LD placement. Previous research has shown that parents who live in lower SES brackets tend to have children who exhibit more disabilities, especially learning disabilities (Blair & Scott, 2002). They noted that from their research that a lower SES status seemed to serve as a catalyst and are associated with an increased risk of being diagnosed with a learning disorder between the ages of 12 and 14.

O'Connor and Spreen (1988) found in their study a significant positive correlation between the parents' SES and education level and the achievement and later occupational level of children with LD. Most noted was the fathers' SES and educational level and its bearing on children with LD in that those with higher SES status and educational levels are much more

likely to access school and social services, are more likely to have a better understanding of LD itself, and are better able to provide employment opportunities for their children. This study posits that higher SES and educational levels helps to ensure that students with LD are more likely to have a positive employment outcome when compared to students with LD from a lower SES.

Family Influence

As early as 1937, Davidson and Anderson noted the relationship between the occupation of the father and the occupational aspirations of their sons. Their research found that sons were more likely to choose occupations that were the same or similar to their father's work. They also pointed out that a higher education level of the father is significantly correlated with higher levels of education obtained by the sons. Loughling and Barling (1996) also found a significant positive relationship between career maturity and family achievement.

For girls in particular, years ago, Melson (1978) stated that when the educational level of parents was high, there was less sex-role stereotyping. Studies conducted by Houser and Garvey (1983) and McNair and Brown (1983) found that parental factors are the best predictors of girls achievement in nontraditional areas. Roe (1956) also pointed out the importance of the family and how the interactions between parents and children could be used as a determinant of career behavior.

Family functioning, influence, and environment all play a role in the development of intelligence. A few studies comparing family influence and its subsequent relation to a LD placement have been conducted. Family factors that were found to be positively correlated with LD placement included low SES, late position in family, large family size (Badian, 1984) and the

quality of the interactions between the mother and the child as well as the number of hours worked by the parents (Grossman, 1983).

Work/Volunteer Experience

Erickson (1963) and Gottfredson (1981) noted that it is during adolescents that work values, identity, and career aspirations are formed; this time of development is most crucial. Loughlin and Barling (1996) noted that negative or low quality employment during adolescence may lead to negative work attitudes; therefore, it is important to have positive work experiences so that the effect on career development will be beneficial. Wagner (1996) stated that “regular participation in a job provides the opportunity to learn the relationship between work performed and remuneration received or satisfaction gained and can therefore increase an adolescent’s integration of work into his or her life plan” (p. 381). Individuals with disabilities do not fare well in the area of career maturity, exploration and development as do their peers without disabilities. Research has shown that these individuals have poorer decision-making and problem solving skills and lower career aspirations. Their opportunities for career maturity are often stifled and they do not have the opportunity to explore different career or make informed choices about the career they will eventually enter.

Ohler, Levinson, and Sanders (1995) noted students with pertinent work experience shower higher levels of career maturity. However, they stated that because students with disabilities do not often have the same opportunities as students without disabilities, they may be less likely to obtain work experiences and therefore do not receive the benefit for the experience of having worked. McMillan stated that even though there is an increase in the desire for individuals with LD to obtain gainful employment, “paid jobs had not been matched by the efforts of either policy makers or service providers” (2006, p. 6). Greig (as cited in McMillan,

2006) pointed out that individuals with LD were more likely to work as volunteers indefinitely instead of moving into paid positions.

Decision-making

Kraus and Hughey (1999) succinctly stated that:

it is essential for students to develop career decision-making skills during the high school years... Given the career decisions students make as they prepare for the transition from high school to employment or further education, acquiring decision-making skills are important. Changes in the economy resulting in downsizing, dislocation and layoffs, and the number of adults choosing to make job changes also makes it important for high school students to learn effective decision making skills. (p. 384)

Luzzo, Hitchings, Retish, and Shoemaker (1999) found that students with disabilities tend to display attitudes and beliefs about career decision-making that kept them from getting the most out of career development. They noted that these individuals felt as if they had little control over the decision-making situation and low confidence in their ability to affect and make decisions about their future careers. Parents and teachers may feel as if individuals with disabilities possess inadequate decision-making abilities because of the disability or they may act out of protection, keeping the person from failure and disappointment. These researchers also point out that students with disabilities lack social and academic skills and as a result, they may exhibit learned helplessness. They are not willing to learn the necessary skills to promote effective career exploration and decision-making skills.

Other researchers have found that individuals with disabilities have problems with decision-making. Ochs and Roessler (2001) found that students with learning disabilities in their study possessed significantly lower career-decision-making self-efficacy. They may find decision making to be a difficult process (Cummings, Maddux, & Casey, 2000). Humes and Hohenshil (1984) noted that these individuals both aim too high or too low in their vocational aspirations and lack the experience in social situations and job opportunities which serves to

limit decision-making abilities. It is important for students with LD to obtain decision making skills in order to assist them with the career development and exploration process as well as helping them to determine their need for specific career accommodations (Janiga & Costenbader, 2002).

Grade Point Average (GPA)

Several researchers have found a positive relationship between grade point average (GPA) and career maturity (Khan & Alvi, 1983; Lawrence & Brown, 1976). Healy, O'Shea, and Crook (1985) also found a positive correlation between GPA and occupational levels. They noted that a boost in school performance could increase the likelihood of obtaining higher levels of employment. Ohler, Levinson, and Sanders (1995) stated that individuals with disabilities tended to have lower GPAs than students without disabilities and showed lower levels of career maturity. Students with LD are not as well prepared to enter postsecondary schools, are more likely to have lower GPAs and perform more poorly on the ACT (Reiff, 1997).

Problem Solving

Jordaan (1963) stated that problem solving ability serves to enhance career exploration. Problem solving is a skill and that the absence of this skill, which is related to limited opportunities for learning and poor socialization, can result in poor mental health and behavioral problems (McGuire, 2001). Even though it has been noted that problem solving is a necessary skill for career development and exploration, Agran and Wehmeyer (1999) found that there are low expectations for student with intellectual and developmental disabilities to learn and develop strong problem solving skills.

During adolescence, individuals become more autonomous and are expected to handle more complex problems on their own at a more frequent rate (Drumm, 1996). Because this is

such an important part of career development and exploration and because studies have shown that individuals with disabilities lack this skill (Bullis & Cheney, 1999; Schlossberg, 2001; Wolffe, 1996), it is important to note how this skill is affected by disability and other psychosocial factors.

There are numerous factors that may limit the career maturity and development of individuals with disabilities including family influence, grade point average, socioeconomic status, and previous work experience. Research as shown that individuals with disabilities tend to have lower GPA's and displayed lower levels of career maturity, which, regardless of the educational level of parents, may inhibit the vocational attainment of those with disabilities. Also, research focusing on previous work experience revealed higher levels of career maturity for students with previous work experience. As a result of these earlier research findings, this study sought to determine if certain psychosocial factors were negatively correlated to career exploration and decision-making and problem solving scores for students with disabilities.

Method

The study employed a correlational research design to investigate the extent to which psychosocial factors corresponded with Career Exploration, Career Decision-making and Problem Solving for Students of 9th grade students with and without disabilities.

Participants

A total of 200 9th grade students attending junior high school in a mid-south state participated in this study. Average age was 15, ranging from 13 to 16, the majority (83%) of the students were Black, and learning disability was by far (96%) the predominant disability reported.

Sampling

Convenience sampling was used to ensure voluntary participation. Consent forms were given to all students during a required life science class to ensure that all 9th grade students had the opportunity to receive the form. From those who returned the forms, a random sample was drawn and included in the study.

Measures

Students completed a demographic information sheet that asked specifically about their grades, household income, disability type, parent's occupation and educational levels and work/volunteer experience

Career Maturity. The Attitude Scale and the Competence Test of the Career Maturity Inventory Revised (CMI-R) were used to assess career decision-making and career exploration. The Attitude Scale and the Competence Test consist of 25 items each and higher scores represent better attitudes toward decision-making and career choice competencies (Crites & Savickas, 1995; Wiggins, 1987). Internal consistency reliabilities (KR-20) have averaged .80 for the Attitude Scale and .74 for the Competence Test (Crites & Savickas, 1995).

Problem-Solving Inventory. The Problem-Solving Inventory (PSI) consists of 35 items each rated via a six-point Likert-type scale said to measure problem-solving confidence, problem approach-avoidance style and problem related personal control (Heppner & Peterson, 1982). Higher PSI scores indicate *less* perceived problem-solving abilities. Heppner et al. (2004) report internal consistency reliability (coefficient alpha) averaging in the high .80s and test-retest reliability of .80 for PSI scores over two weeks, .81 over three weeks, and .60 over two years. Heppner et al. (2004) have also summarized a range of studies supporting the construct validity of the PSI (see also Heppner & Baker, 1997).

Procedure

The study commenced during the academic spring semester of 2000. Of students who returned consent forms, a random sample was obtained. All students completed the CMI-R, the PSI and the demographics information sheet. Scores were then coded and calculated. Students were required to list the actual occupation of their parents. The occupations were then coded as unskilled, skilled or professional based on information obtained from the Dictionary of Occupational Titles.

Results

A correlational analysis was conducted in order to determine relationships between the psychosocial variables as well as disability, career exploration, decision-making and problem solving. Several significant correlations were noted.

Table 1
Correlations between Mother's Occupation (MO), Father's Occupation (FO), Income (INC), Gender (GEN), Disability Status (DIS), Grade Point Average (GPA), Work/Volunteer Experience, (W/V), Career Exploration (CE), Decision-Making (DM), and Problem Solving (PS)

	MO	FO	INC	GEN	DIS	GPA	W/V	CE	DM	PS
MO	1	.59***	.56***	.04	.16*	.25*	.24*	.07	.18*	-.31***
FO		1	.50***	.10	-.10	.19*	.17*	.04	.15	-.19*
INC			1	-.07	-.25**	.23**	.23**	.09	.20*	-.39***
GEN				1	.17*	.03	-.04	-.09	.00	.20**
DIS					1	.17*	-.08	-.10	-.26**	.40***
GPA						1	.00	.23**	.21**	-.37***
W/V							1	.16*	.08	-.29***
CE								1	.31***	-.40***
DM									1	-.42***
PS										1

Note. * $p < .05$. ** $p < .01$. *** $p < .0001$.

Family Influence

The mother's occupation was also positively correlated with grade point average (GPA), work/volunteer experience, and decision-making. It was negatively correlated with disability and problem solving. The father's occupation was positively correlated with GPA and work/volunteer experience, and negatively correlated with problem solving. There were no significant correlations between father's occupation and disability or decision-making. There were also significant positive correlations between income and GPA, work/volunteer experience and decision-making. There was the same significant inverse correlation between income and problem solving ability. Higher scores on the PSI are indicative of lower problem solving ability; therefore, it was expected that there would be an inverse relationship between occupation and income when compared to problem solving skills. There were no significant correlations, positive or negative between these factors and career exploration. These results indicate that as income and parent's occupations status increase so does GPA, work/volunteer experience, decision-making and problem solving.

Disability Status

Students with learning disabilities were more likely to have lower GPAs. They were more likely to have poorer decision making and problem solving abilities. This was an expected result in that earlier findings noted that individuals with disabilities tended to have lower grades and less experience and poorer decision making and problem solving abilities.

Grade Point Average (GPA)

Past research had found that students with higher grade point averages (GPA) were more likely to have the opportunity to explore different careers or know more about careers in general than other students (Khan & Alvi, 1983). Westbrook, Sanford, and Donnelly (as cited in Powell

& Luzzo, 1998) noted that students with higher GPAs had exhibited higher levels of career maturity than did students with lower grades. The results from this correlation revealed a positive correlation between GPA and parent's occupation and income, career exploration and decision-making.

Newman, Lohman, Newman, Myers and Smith (2000) stated that higher levels of occupations for parents served as protective factors for students. They noted that students whose parents had more education and skilled or professional occupations tended to have higher GPAs. Students with higher GPAs may take more time to explore careers or talk to others to learn more about the world of work. These students may spend more time thinking about and making decisions about college, work, and other plans to put into action upon completing high school. Student with higher GPAs may also have had the opportunity to put into place better decision-making processes than students with lower GPAs. These students may have classes or participate in activities that require them to think more critically, make more decisions, and practice these skills on a more frequent basis.

Significant negative correlations were noted when GPA was compared to disability and problem solving. Students with learning disabilities in this study exhibited lower problem solving skills and lower GPAs. Students with disabilities may not have confidence in themselves, may not have been taught the necessary skills of problem solving, or may not understand the material being taught. These problems can lead to lower grades and lower problem solving skills.

The negative correlation between GPA and problem solving was expected and indicated that higher grades were related to better problem solving scores. Research has pointed out that individuals with disabilities have poorer problem solving skills and as a result, they are more vulnerable to problems in career development (Bingham, 1981).

Work/Volunteer Experience

The positive correlation between prior work/volunteer experience and parent's occupation, income, career exploration and decision-making was expected, as well as the negative correlation between this variable and problem solving. Students who had better problem solving scores were more likely to have increased work/volunteer experience. The positive correlations may indicate that students who have had the opportunity to gain experience through work or volunteer activities, have parents with higher skilled jobs and higher incomes may be able to take advantage of opportunities that will allow them to gain work experience. As a result, these students may have been more likely to have had the chance to practice decision-making, problem solving and exploration of different jobs.

Career Exploration, Decision-Making and Problem Solving

There was a significant positive correlation between career exploration and decision-making. Curnow (1989) noted that inadequate information stifles the decision-making process. Students who have had more career exploration opportunities may have had more access to much needed information and more chances to make decisions about the type of work they will pursue, what courses will be necessary, and what extracurricular activities will enhance their opportunities for achieving the goals they have set for themselves. If students have the opportunity to explore careers and gather the necessary information they need to make informed choices, they can make better decisions, set more realistic goals, and experience better outcomes.

There was a significant negative correlation between career exploration and problem solving. Results indicate that those students who had higher career exploration scores also had better on problem solving scores. A possible reason for this finding could be that these students may have already solved problem associated with pursuing a particular course of study or have

had the opportunity to talk about work and the problems they may encounter. They may have anticipated and discussed problems such as stereotypes, discrimination, financial aid for college, scheduling conflicts or other difficulties that may arise and what steps they will take in order to overcome these problems.

Limitations

The information collected for this study was all self-report. Some of the participants did not know all of the information needed to complete this for properly and left blanks while others may have felt pressure to provide an answer that was more socially desirable so the true answers may not have been reflected. Also, because of the low internal consistence, low reliability, low power and effect size, the results of the Competence Test from the Career Maturity Inventory should be interpreted with caution.

Discussion

The correlational analysis in this study supported findings from research cited earlier in that variables such as parent's occupation and educational level, income, GPA, previous work experience, and problem solving and decision making skills are significantly related to career and workforce development.

Research by Newman, Lohman, Newman, Myers, and Smith (2000) noted that higher level occupations for parents served as protective factors for students. They noted that students whose parents had more education and skilled or professional occupations tended to have higher GPAs. These students may take more time to explore careers or talk to others, such as parents, and learn more about the world of work. Parents and others in the higher SES environments may also serve as mentors and therefore motivate students to consider postsecondary education and explore different careers. These students may also spend more time thinking about and making

decision about college and work, and as a result, may know more about the careers they will eventually enter. Students with higher GPAs may also be able to put into place better decision making and problem solving skills because they may have classes or participate in activities that require them to think more critically, make more decisions, and practice these skills on a more frequent basis.

This study found that students with learning disabilities were more likely to have lower GPAs. These students also had poorer decision-making and problem solving skills and were less likely to have participated in work/volunteer activities. These students may not have confidence in themselves and may not have been taught or had the opportunities to practice and improve these skills. When students are living in impoverished environments, there may be less time to contemplate what will happen in the future. These individuals may be more concerned with the present issues, trying to make sure the immediate needs of food, clothing, shelter, and protection are being met. Even though setting goals for future education and employment is important, it is not necessarily deemed as imperative. Also these individuals may have less access to positive role models and may not necessarily be encouraged to leave the family for school or employment. This study also noted all of these factors were mostly significantly related; therefore, improvement in one area could possibly lead to improvements in other areas of importance.

In gaining a better understanding of factors that can negatively affect the career and workforce development of individuals with learning disabilities, it becomes easier to put into place programs, courses or activities that will counteract the problems that are present and assist in increasing the likelihood of these individuals finding gainful employment. In doing so, the overall quality and life work of these individuals can be improved and dependence upon welfare

is reduced. Numerous studies have found that students with LD can go on and successfully complete postsecondary education or find gainful employment if they have access to the appropriate training, assistance, and encouragement. Hicks-Coolick and Kurtz (1997) noted that it is possible for students with LD to successfully complete postsecondary education participate fully in life. Therefore, if we as educators, counselors and employers will allow students the opportunity to obtain and practice these skills early (elementary, middle, and high school), students with learning disabilities can be even better prepared to make the transition from high school to work or postsecondary education.

Agran, Blanchard, Wehmeyer, and Hughes (2002) found that students with intellectual disabilities could be taught problem solving skills and maintain performance levels of 100% after such skills had been learned. They noted that the most successful students are those who are motivated (goal orientation, self-discipline, willing to work hard), prepared (academic background, compensatory techniques, knowledge of learning style, time management skills) and are able to advocate for themselves (self acceptance, knowledge of laws, policies and resources, assertiveness skills, problem solving).

Individuals with learning disabilities could be considered an amenable, possibly untapped resource for workforce development. Even though great strides have been made in ensuring that these individuals have equal rights to employment, they are still oftentimes unemployed or underemployed. This group of individuals has a great wealth of skills and abilities that could be put to use that will help to promote and increase the overall productivity and economy.

Recommendations for Future Studies

Replication of the study is recommended using a more diverse and larger population so that more individual and group characteristics can be analyzed in order to determine if the findings will be duplicated. Also, determining other factors that may help or hinder the career and workforce development of individuals with learning disabilities is important. The more factors that can be identified, the better able we are as educators, counselors and employers to put into place ways for these individuals to gain skills necessary for work success.

References

- Agran, M., Blanchard, C., Wehmeyer, M., & Hughes, C. (2002). Increasing the problem-solving skills of students with developmental disabilities participating in general education. *Remedial and Special Education, 23*, 279-288.
- Agran, M., & Wehmeyer, M. (1999). *Teaching problem solving to students with mental retardation*. Washington, DC: American Association on Mental Retardation.
- Badian, N. (1984). Reading disability in an epidemiological context: Incidence and environmental correlates. *Journal of Learning Disabilities, 17*, 129-136.
- Blair, C., & Scott, K. G. (2002). Proportion of LD placements associated with low socioeconomic status: Evidence for a gradient. *Journal of Special Education, 36*, 14-22.
- Bingham, G. (1981). Exploratory process in career development: Implications for learning disabled students. *CDEI, 4*, 77-80.
- Blair, C., & Scott, K. (2002). Proportion of LD placements associated with low socioeconomic status: Evidence for a gradient. *Journal of Special Education, 36*, 14-22.
- Blustein, D. L., Juntunen, C. L., & Worthington, R. L. (2000). The school-to-work transition: Adjustment challenges of the forgotten half. In S. D. Brown & R. W. Lent (Eds.), *Handbook of counseling psychology* (3rd ed.; pp. 435-470. New York: Wiley.
- Bolton, B. (1975). Preparing deaf youth for employment. *Journal of Rehabilitation for the Deaf, 9*, 11-16.
- Bullis, M., & Cheney, D. (1999). Vocational and transition interventions for adolescents and young adults with emotional or behavioral disorders. *Focus on Exceptional Children, 31*, 1-24.

- Conte, L. E. (1983). Vocational development theories and the disabled person: Oversight or deliberate omission? *Rehabilitation Counseling Bulletin*, 26, 316-328.
- Crites, J. O., & Savickas, M. L. (1995). *Career maturity inventory sourcebook*. Bridges.com, Inc.
- Cummings, R., Maddux, C., & Casey, J. (2000). Individualized transition planning for students with learning disabilities. *The Career Development Quarterly*, 49, 60-72.
- Curnow, T. C. (1989). Vocational development of persons with disabilities revisited. *Journal of Applied Rehabilitation Counseling*, 23(4), 7-13.
- Davidson, P. E., & Anderson, H. D. (1937). *Occupational mobility in an American Community*. Palo Alto, CA: Stanford University Press.
- Dillard, J. M. (1976). Socioeconomic background and the career maturity of black youths. *The Vocational Guidance Quarterly*, 25, 65-70.
- Drumm, P. (1996). Developmental changes in questioning strategies during adolescence. *Journal of Adolescent Research*, 11, 285-305.
- Erickson, E. H. (1963). *Childhood and society*. New York: Norton.
- Gottfredson, L. S. (1996). Circumscription and compromise. A developmental theory of occupational aspirations. *Journal of Counseling Psychology*, 28, 545-579.
- Grossman, R. (1983). In the field. *Journal of Learning Disabilities*, 16, 244-246.
- Hagner, D., & Salomone, P. R. (1989). Issues in career decision making for workers with developmental disabilities. *Career Development Quarterly*, 38, 148-159.
- Healy, C. C., O'Shea, D., & Crook, R. H. (1985). Relation of career attitudes to age and career progress during college. *Journal of Counseling Psychology*, 32, 239-244.
- Heppner, P. P., & Petersen, C. H. (1982). The development and implications of a personal problem solving inventory. *Journal of Counseling Psychology*, 29, 66-75.
- Heppner, P. P., & Baker, C. E. (1997). Applications of the Problem Solving Inventory. *Measurement and Evaluation in Counseling and Development*, 29, 229-241.
- Heppner, P. P., Witty, T. E., & Dixon, W. A. (2004). Problem-solving appraisal and human adjustment: A review of 20 years of research using the problem-solving inventory. *Counseling Psychologist*, 32, 344-428.
- Hicks-Coolick, A., & Kurtz, D. (1997). Preparing students with leaning disabilities for success in postsecondary education: Needs and services. *Social Work in Education*, 19, 31-42.

- Hitchings, W., Luzzo, D., Ristow, R., Horwath, M., Retish, P., & Tanners, A. (2001). The career development needs of college students with learning disabilities: In their own words. *Learning Disabilities Research and Practice, 16*, 8-17.
- Houser, B. B., & Garvey, C. (1983). The impact of family, peers, and educational personnel upon career decision making. *Journal of Vocational Behavior, 23*, 35-44.
- Humes, C. W., & Hohenshil, T. A. (1984). Career development and career education for handicapped students: A reexamination. *Vocational Guidance Quarterly, 34*, 31-40.
- Jagger, L., Neukrug, E., & McAuliffe, G. (1992). Congruence between personality traits and chosen occupation as a predictor of job satisfaction for people with disabilities. *Rehabilitation Counseling Bulletin, 36*, 53-60.
- Janiga, S., Costenbader, V. (2002). The transition for students with learning disabilities: A survey of college service coordinators. *Journal of Learning Disabilities, 35*, 462-479.
- Jordaan, J. P. (1963). Exploratory behavior. The formation of self and occupational concepts. In D. E. Super (Ed.), *Career development: Self-concept theory* (pp. 42-78). New York: College Entrance Examination Board.
- Kahn, S. B., & Alvi, S. A. (1983). Educational, social and psychological correlates of vocational maturity. *Journal of Vocational Behavior, 9*, 357-364.
- Kaplan, G., & Lynch, J. (1997). Editorial: Whither studies on the socioeconomic foundations of population health. *American Journal of Public Health, 87*, 1409-1411.
- Kraus, L. J., & Hughey, K. F. (1999). The impact of an intervention on career decision-making self-efficacy and career indecision. *Professional School Counseling, 2*, 384-390.
- Lawrence, W., & Brown, D. (1976). An investigation of intelligence, self-concept, socioeconomic status, race and sex and predictors of career maturity. *Journal of Vocational Behavior, 9*, 43-51.
- LDOnline. (2006). *LD basics. What is a learning disability?* Retrieved June 30, 2006, from <http://www.ldonline.org/ldbasics/whatisld>
- Loughlin, C. A., & Barling, J. (1996). Teenagers' part-time employment and their work-related attitudes and aspirations. *Journal of Organizational Behavior, 19*, 197-207.
- Luzzo, D. A. (Ed.). (2000). *Career counseling of college students*. Washington, DC: American Psychological Association.
- Luzzo, D. A., Hitchings, W. E., Retish, P., & Shoemaker, A. (1999). Evaluation differences in college students' career decision making on the basis of disability status. *Career Development Quarterly, 48*, 142-156.

- McMillan, I. (2006). Support for getting paid work not keeping pace with change. *Learning Disability Practice*, 9, 6.
- McGuire, J. (2001). What is problem solving? A review of theory, research and applications. *Criminal Behaviour and Mental Health*, 11, 201-235.
- McNair, D., & Brown, D. (1983). Predicting the occupational aspirations, occupational expectations and career maturity of Black and White male and female 10th graders. *Vocational Guidance Quarterly*, 32, 29-36.
- Murray, C. (2003). Risk factors, protective factors, vulnerability, and resilience: A framework for understanding and supporting the adult transitions of youth with high-incidence disabilities. *Remedial and Special Education*, 24, 16-26.
- Nelson, J. A. (1978). Age and sex differences in the development of children's occupational reasoning. *Journal of Vocational Behavior*, 13, 287-297.
- Newman, B. M., Lohman, B. J., Newman, P. R., Myers, M. C., & Smith, V. L. (2000). Experiences of urban youth navigating the transition to 9th grade. *Youth & Society*, 31, 387-416.
- O'Connor, S. & Spreen, O. (1988). The relationship between parents' socioeconomic status and education level, and adult occupational and educational achievement of children with learning disabilities. *Journal of Learning Disabilities*, 21, 148-153.
- Ochs, L. A., & Roessler, R. T. (2001). Students with disabilities: Are they ready for the 21st Century? *Rehabilitation Counseling Bulletin*, 44, 170-176.
- Ohler, D. L., Levinson, E. M., & Sanders, P. (1995). Career maturity in young adults with learning disabilities: What employment counselors should know. *Journal of Employment Counseling*, 32, 64-78.
- Osipow, S. H. (1976). Vocational development problems of the handicapped. In H. Rusalem & D. Malikin (Eds.), *Contemporary vocational rehabilitation* (pp. 47-62). New York: New York University Press.
- Powell, D. F., & Luzzo, D. A. (1998). Evaluating factors associated with the career maturity of high school students. *Career Development Quarterly*, 47, 145-158.
- Reiff, H. (1997). Academic advising: An approach from learning disabilities research. *Journal of Counseling and Development*, 75, 433-441.
- Roe, A. (1956). *The psychology of occupations*. New York: John Wiley.

- Rojewski, J. W. (1993). Theoretical structures of career maturity for rural adolescents with learning disabilities. *Career Development for Exceptional Individuals, 16*, 39-52.
- Schlossberg, S. M. (2001). The effects of a counselor-led guidance intervention on students' behaviors and attitudes. *Professional School Counseling, 4*, 156-164.
- Schulenberg, J. E., Vondracek, F. W., & Crouter, A. C. (1984). The influence of the family on vocational development. *Journal of Marriage and the Family, 46*, 129-143.
- Strohmer, D. C., Czerlinski, T., Menz, F. E., & Engelkes, J. R. (1984). Vocational indecision and rehabilitation clients. *Rehabilitation counseling Bulletin, 28*, 109-116.
- Wagner, W. G. (1996). Optimal development in adolescence. What is it and how can it be encouraged. *Counseling Psychologist, 24*, 360-399.
- Wiggins, J. D. (1987). Effective career exploration programs revisited. *Career Development Quarterly, 35*, 279-303.
- Wolffe, K. (1996). Career education for students with visual impairments. *Review, 28*, 89-93.