



Adults with Learning Disabilities in Postsecondary Education and the Workforce

Patricia Lerma^{1*}, Roy K. Chen¹

¹University of Texas Rio Grande Valley, USA

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ABSTRACT

The term “learning disabilities” refers to a number of disorders that may affect the acquisition, organization, retention, understanding or use of verbal or nonverbal information. Before the implementation of special education services in public schools, students with learning disabilities were too often regarded as slow learners, mentally disabled, or lazy. Few of these students graduated from high school or continued to postsecondary education. As a result, many adults with learning disabilities were never diagnosed and did not receive instruction that was appropriate for their disabilities. The result is a lack of training, self-confidence, and the ability to leverage strengths to increase the chances of success in the work place. The purpose of this literature review is to discuss recent information regarding the challenges adults with learning disabilities face when entering into the workforce.

Keywords: Learning disabilities, transition, post-secondary education, employment, vocational counseling

ADULTS WITH LEARNING DISABILITIES IN THE WORKFORCE

A learning disability is a neurological disorder that impedes an individual’s ability to store, process, or produce information (Falvo, 2018; Fletcher et al., 2018; Lerner & Johns, 2015). Learning disabilities may also involve difficulties with organizational skills, social awareness, social collaboration and understanding others’ viewpoints. People with learning disabilities have normal intellectual functioning, but they may have difficulty in reading, writing, spelling, reasoning, recalling, and/or organizing information if left to their own devices or if taught with conventional learning techniques (Cortiella & Horwitz, 2014). Some individuals, despite having average or above average intelligence, struggle to gain basic academic skills. Academic performance problems detected in children and adolescents with a learning disability may interfere with achievement at the college level and reduce employment options in adulthood (Cahan, et al., 2012).

In a 2014 survey of 1,980 adults in the United States, 12% of the respondents indicated having a learning disability themselves and 8% of the parents surveyed had a child with a learning disability (National Center for Learning Disabilities [NCLD], 2014). Learning disabilities are thought to be

diagnosed in the early school. Approximately 53% of parents surveyed stated that their child’s learning disabilities were diagnosed during 1st-4th grades. Nearly 23% indicated their children were diagnosed in kindergarten. In addition, 83% stated that early intervention could help characteristics of a learning disability in an individual, but over half incorrectly cited medication and mental health counseling as treatments. More than two-thirds of parents whose children had learning disabilities preferred talking to a teacher or pediatrician about their concerns (NCLD, 2014).

CAUSES OF LEARNING DISABILITIES

Medical and clinical experts have not been able to identify specific medical causes for learning disabilities. Learning disabilities are not caused by visual, hearing or motor disabilities, intellectual disabilities, or emotional disturbances (DSM-5, American Psychiatric Association, 2013). Some learning disabilities appear to be passed down from generation to generation. Occasionally, certain medical conditions, such as neurological illnesses or chronic childhood ear infections, may alter the neurological development or structure of the brain, creating a learning disability. Environmental factors such as cultural deprivation, poor nutrition, and exposure to toxins such as lead in water or paint, or parenting and teaching styles, may heighten the impact of a neurological deficit, but they are not the cause. Researchers do not know exactly what causes learning disabilities, but they appear to be related to dissimilarities in the construction of the brain (NCLD, 2014). These differences are present from birth and are often heredity or genetics. Sometimes, factors that affect a developing fetus, such as alcohol or drug use, can lead to a learning disability.

*Corresponding Author’s Email: patricia.lerma01@utrgv.edu

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Scientists have found that learning disabilities are related to areas of the brain that deal with language development and have used imaging studies to show that the brain of a person with dyslexia develops and functions differently from a typical brain (American Speech-Language-Hearing Association, 2012). Sometimes a person may develop a learning disability later in life. Possible causes in such a case include dementia or a traumatic brain injury (National Institute of Neurological Disorders and Stroke, 2012).

The learning and academic struggles that made school work so challenging as a child can show up again in adults in the workplace, in social situations, and in the activities of day-to-day life. Adults who suspect they have learning disabilities should seek out specialized professionals who have training or direct experience working with and evaluating adults with learning disabilities (NCLD, 2006).

Many individuals are not identified as having a learning disability until well into adulthood. These adults may face a number of challenges such as: (1) significant problems at work or school that prevent them from reaching their career and/or educational goals; (2) significant problems in daily life (e.g., relationships, managing finances, decision-making); and (3) low self-esteem or low expectations for themselves, few friends and colleagues, trouble with the law, and possible struggles with depression and anxiety (Klassen et al., 2011). These issues not only impact performance in post-secondary education and job performance but can eventually become internalized.

PREVALENCE AND CHARACTERISTICS OF LEARNING DISABILITIES

According to the 2010 U.S. Census Bureau Survey of Income and Program Participation, working adults ages 18-65 with learning disabilities were classified in the following categories: employed 46%; unemployed 7.9%; and not in the labor force. Male and female with learning disabilities accounted for 2% and 1.4% of the total survey participants, respectively. The percentage of those at the poverty level was almost twice as high as those above the poverty level: 2.6% of adults with learning disabilities lived in poverty while 1.5% of adults with learning disabilities lived above poverty.

The data revealed few differences by ethnicity of the white, black, and Hispanic populations reporting having a learning disability. White, non-Hispanic respondents accounted for 1.7%; black, non-Hispanic respondents accounted for 1.9%; Asian respondents accounted for 0.9%; multiple-race, non-Hispanic respondents accounted for 3.6% and Latino, Hispanic respondents accounted for 1.2% (U.S. Census Bureau, 2010).

Learning disabilities affect individuals throughout their lives. Adults with learning disabilities face challenges in finding the right post-secondary education avenue and achieving success succeeding, as well as challenges in preparing for and succeeding in the workforce and in social settings. There are many ways in which adults need to adapt effectively, such as those related to family, daily living routines, social and emotional behavior, occupation, community involvement, personal leisure, and post-secondary education (Getzel & Briel,

2006). In essence, there are numerous circumstances and outcomes in which adults must handle the successes and difficulties of having a learning disability as it manifests itself into adulthood.

A specific learning disorder is diagnosed through a clinical review of the individual's developmental, medical, educational, and family history, reports of test scores and teacher observations, and response to academic interventions. The diagnosis requires persistent difficulties in reading, writing, arithmetic, or mathematical reasoning skills during primary and secondary schooling. Symptoms may include inaccurate or slow and effortful reading, poor written expression that lacks clarity, difficulties remembering number facts, or inaccurate mathematical reasoning. Current academic skills must be well below the average range of scores in culturally and linguistically appropriate tests of reading, writing, or mathematics. The individual's difficulties must not be better explained by developmental, neurological, sensory (e.g., vision or hearing), or motor disorders and must significantly interfere with academic achievement, occupational performance, or activities of daily living (American Psychiatric Association, 2013).

COMORBID DISORDERS WITH LEARNING DISABILITIES

There is a continuum of neurological disorders that are frequently found together. The basic concept is that if something impacts on the developing brain, resulting in an area or system being wired differently, it is possible that other areas might be involved as well (Scanlon, 2013). These related disorders are referred to as comorbid conditions. These comorbid conditions include attention-deficit/hyperactivity disorder, specific difficulties with regulating emotions, tic disorders, bipolar disorders, and other problems primarily involving the cortex of the brain (Klassen et al., 2011).

COMMON TYPES OF LEARNING DISABILITIES

Learning disabilities are often grouped by academic skill set. The types of learning disorders that are most conspicuous usually involve reading, writing, or mathematics. When parents and school personnel were asked about different types of learning disabilities, 91% were familiar with dyslexia; however, two-thirds of people did not know what dyscalculia, dysgraphia, or dyspraxia are (NCLD, 2014).

Learning disabilities in reading (dyslexia): There are two types of learning disabilities in reading (Lerner & Johns, 2015). Basic reading problems occur when there is difficulty understanding the relationship between sounds, letters and words. Reading comprehension problems occur when there is an inability to grasp the meaning of words, phrases, and paragraphs.

Learning disabilities in mathematics (dyscalculia): Learning disabilities in mathematics vary greatly depending on the individual's other strengths and weaknesses. A person's ability to do mathematics is affected differently by a language learning disability, or a visual disorder or difficulty with sequencing, memory, or organization (Fletcher et al., 2018; Lerner & Johns, 2015). An individual with a mathematics-based learning disorder may struggle with memorization and organization of

numbers, operation signs, and number facts (e.g., $5+5=10$ or $5 \times 5=25$). People with mathematics learning disorders might also have trouble with counting principles (such as counting by twos or counting by fives) or have difficulty telling time.

Learning disabilities in writing (dysgraphia): Learning disabilities in writing can involve the physical act of writing or the mental activity of comprehending and synthesizing information (Falvo, 2018; Fletcher et al., 2018; Lerner & Johns, 2015). Basic writing disorder refers to physical difficulty forming words and letters. Expressive writing disability indicates a struggle to organize thoughts on paper.

Learning disabilities in motor skills (dyspraxia): Motor difficulty refers to problems with movement and coordination, whether with fine (e.g., cutting, writing) or gross motor skills (e.g., running, jumping). A motor disability is sometimes referred to as an output activity meaning that it relates to the output of information from the brain (Falvo, 2018; Lerner & Johns, 2015). In order to run, jump, write or cut something, the brain must be able to communicate with the necessary limbs to complete the action. Signs that an individual might have a motor coordination disability include problems with physical abilities that require hand-eye coordination, like holding a pencil or buttoning a shirt.

Learning disabilities in language (aphasia/dysphasia): Language and communication learning disabilities involve the ability to understand or produce spoken language. Language is also considered an output activity because it requires organizing thoughts in the brain and calling upon the right words to verbally explain something or communicate with someone else. Signs of a language-based learning disorder involve problems with verbal language skills, such as the ability to retell a story and the fluency of speech, as well as the ability to understand the meaning of words, parts of speech, and directions (Fletcher et al., 2018; Lerner & Johns, 2015).

Auditory processing disorder: Professionals may refer to the ability to hear well as auditory processing skills or receptive language (Falvo, 2018; Fletcher et al., 2018). The ability to hear things correctly greatly impacts the ability to read, write and spell. An inability to distinguish subtle differences in sound, or hearing sounds at the wrong speed make it difficult to sound out words and understand the basic concepts of reading and writing.

Visual processing disorder: Problems in visual perception include missing subtle differences in shapes, reversing letters or numbers, skipping words, skipping lines, misperceiving depth or distance, or having problems with eye-hand coordination. Professionals may refer to the work of the eyes as visual processing (Fletcher et al., 2018; Lerner & Johns, 2015). Visual perception can affect gross and fine motor skills, reading comprehension, and mathematics.

Although learning disabilities have been widely accepted as childhood conditions, it is crucial that such disorders be conceptualized and understood to affect children well into adulthood. Reports of learning disabilities throughout life provide irrefutable evidence that such conditions are lifelong and do not disappear upon leaving school. Studies have found prosperous adjustment among adults with learning disabilities

who have achieved a good quality of life, finding their calling by focusing on their strengths and compensating for performance difficulties (Denhart, 2008; DuPaul et al., 2015; Gerber, 2012).

A learning disability cannot be cured or remedied; it is a lifelong issue. However, many people develop coping techniques through special education services, tutoring, medication, therapy, personal development, or adaptation of learning skills. With the right provisions and strategic interventions, people with learning disabilities can succeed in school and go on to post-secondary education, and often have distinguished careers later in life (Banerjee & Brinckerhoff, 2010).

EMPLOYMENT OF ADULTS WITH LEARNING DISABILITIES

There are 4.6 million Americans with a learning disability—far more than the number who disclose their disability in college and the workplace (U.S. Census Bureau, 2010). In fact, data shows that within eight years of leaving high school, more than half of young adults with a learning disability do not consider themselves to have a disability. Two years after leaving high school, 52% of young adults no longer think so; after eight years it rises to 69%. Here is what life after high school looks like for adults with learning disabilities (U.S. Census Bureau, 2010).

Only 24% of young adults with a learning disability inform postsecondary schools about their needs. Seventeen percent get accommodations and support at the postsecondary level. Forty-one percent of young adults with a learning disability complete postsecondary education within eight years of leaving high school, as compared to 52% of young adults without a learning disability (U.S. Census Bureau, 2010). Forty-six percent of working-age adults with a learning disability report being employed, as compared to 71% of adults without a learning disability. Sixty-seven percent earned \$25,000 or less per year within eight years of leaving high school (U.S. Census Bureau, 2010). Nineteen percent say their employers are aware that they have a learning disability. Five percent have accommodations in the workplace (U.S. Census Bureau, 2010).

According to the Center for Education Statistics (2016), 11% of undergraduates in both 2007–08 and 2011–12 reported having a disability. In 2011–12, the percentage of undergraduates who reported having a disability was 11% for both males and females. However, there were some differences in the percentages of undergraduates with disabilities by characteristics such as military veteran status, age, dependency status, and race/ethnicity. For example, 21% of undergraduates who were veterans reported having a disability, compared with 11% of undergraduates who were not veterans. The percentage of undergraduates having a disability was higher among those age 30 and over (16%) than among 15- to 23-year-olds (9%) and 24- to 29-year-olds (11%). Among dependent undergraduates, 9% reported having a disability, which was lower than the percentages for independent undergraduates who were married (13%) or unmarried (14%). Compared to undergraduates of other racial/ethnic groups, a lower percentage

of Asian undergraduates (8%) had a disability. The percentage of post-baccalaureate students who reported having a disability in 2011–12 (5%) was lower than the percentage for undergraduates (11%) (U.S. Department of Education, National Center for Education Statistics, 2016).

CRIMINAL JUSTICE SYSTEM INVOLVEMENT

The available information on the prevalence of learning disability in the U.S. population provides evidence that learning disabilities affect individuals throughout their lives, with particularly high occurrence among those living in poverty. These challenges associated with poverty are likely factors in the high rate of involvement with the criminal justice system (Newman et al., 2011). Researcher found 84% of the public viewed learning disabilities as a growing issue in the U.S. Approximately, two-thirds of those surveyed (63%), know someone who has a learning disability (Newman, et al., 2011).

One in two adults (55%) with a learning disability reported having some type of involvement with the criminal justice system within eight years of leaving high school. One in three young adults has been arrested. According to the National Longitudinal Transition Study-2, 2011, 52% of young adults with a learning disability have been stopped by police for an offense other than a traffic violation; 32% have been arrested; 16% spent a night in jail; and 16% have been on probation or parole (Newman et al., 2011). When youth with learning disabilities are incarcerated, they may not receive educational services and supports. In addition, very few correctional facilities have formal career and technical education programs that provide offenders with marketable job skills and assistance in employment planning. Even when such career and technical education programs exist, youth with a learning disability are often excluded because they do not have a high school diploma, adequate reading skills or other prerequisite skills (Newman et al., 2011).

There is a need to train rehabilitation practitioners on how to implement disability-related programs when they are designed or in a way that is most effective for youth and adolescents with a learning disability and other special needs. Front-line youth service professionals in the juvenile corrections system face substantial challenges in supporting youth with complex needs and issues and must possess a broad range of knowledge, skills and abilities to serve incarcerated youth effectively.

THE LAW AND LEARNING DISABILITIES

Three federal laws protect the rights of people with disabilities, which can include people with learning and attention challenges. These laws must be enforced by local, state, and governmental programs, organizations, and agencies. The laws are the Americans with Disabilities Act (ADA), the Individuals with Disabilities Education Act (IDEA) and Section 504 of the Rehabilitation Act of 1973 (U.S. Equal Employment Opportunity Commission, 2011).

The ADA prohibits discrimination against children and adults with disabilities and applies to all public and most private schools and colleges, to testing entities, and to licensing

authorities, regardless of federal funding. Faith based educational institutions are exempt from coverage. The ADA applies to private employers with 15 or more employees and to state and local governments. In addition, the law prohibits employers from using unnecessary qualification standards to weed out applicants with disabilities, while not requiring employers to hire unqualified applicants with disabilities. Employers are banned from making mention of incorrect job descriptions to determine that an employee with a disability can no longer perform his or her job. Employers are also prohibited from failing to provide reasonable accommodations that do not cause undue hardship to them.

The IDEA, initially enacted in 1975, provides for special education and related services for children with disabilities who need such education and services by reason of their disabilities. The IDEA provides for a Free Appropriate Public Education (FAPE) and for an Individualized Education Program (IEP). Section 504 of the Rehabilitation Act of 1973 is a civil rights law that prohibits discrimination on the basis of disability in programs and activities, public or private that receive federal financial assistance. This law conforms to the definition of disability under the Americans with Disabilities Act Amendments Act (ADAAA). Section 504 does not provide funding for special education or related services, but it does permit the federal government to take funding away from programs that do not comply with the law. The Rehabilitation Act applies to public and private elementary and secondary schools and colleges that receive federal funding. It also applies to employers that receive federal funding. Children and adults with learning disabilities, in many cases, have been found to have an impairment that substantially limits learning. That substantial limitation means that these individuals have a disability under the Rehabilitation Act and ADA and are protected under these laws.

LEARNING DISABILITIES AND POST-SECONDARY EDUCATION

Students with learning disabilities represent the largest cohort of all students with disabilities served in special education programs throughout the United States (Gerber, 2012). In stark contrast to their peers that do not have disabilities, students with learning disabilities are much more likely to be held back by at least one academic year due to grades, low attendance, and higher disciplinary removals (NCLD, 2014). However, students with specific learning disabilities spend more time in general education classrooms: 66% of students with learning disabilities spend at least 80% of their day with more access to interventions and additional support, according to the Education Environments by Disability report. Sixty-eight percent of students with learning disabilities leave high school with a regular diploma while 19% drop out and 12% receive a certificate of completion (Gerber, 2012).

The rate at which students with a learning disability leave high school with a regular high school diploma has been steadily rising for a decade, yet still remains well below the graduation rate for students without special education status (Banerjee & Brinckerhoff, 2010). There was an 11% increase in proportion of students with LD who completed high school

with a regular diploma between the years 2002-2011. In addition, there was a 16% decrease in the proportion of students with a learning disability who dropped out of high school between the years 2002-2011. Twelve percent received a certificate of completion in 2011 versus 7% in 2002.

Increasing the graduation rate and reducing the drop-out rate for students with learning disabilities continues to be a high priority for parents and educators. Given all that is known about the importance of a regular high school diploma and the detrimental and lifelong effects of dropping out of school, efforts to implement effective drop-out prevention programs should be top priority. Postsecondary education is now a primary goal for 80% of secondary students with disabilities (Newman et al., 2009). As a result, larger numbers of students with a learning disability have taken academically challenging plans of study and are therefore more competitive in the college admissions process. Parents, advocacy groups, and secondary personnel are increasingly aware of college options for students with a learning disability and concurrently, some colleges and universities recognize students with a learning disability as an important group to recruit for admission (Brinckerhoff et al., 2002).

Additionally, the Individuals with Disabilities Education Improvement Act of 2004 (IDEA, 2004) mandates that postsecondary education must be considered as a goal for all students. As part of their state performance plans, state education agencies must report the percentage of students with disabilities who are enrolled in postsecondary education one year after high school graduation/completion (Madaus et al., 2011). These requirements compel secondary special education teams to carefully consider postsecondary education as a realistic goal for an increasing number of students with learning disabilities.

Another aim for the increased emphasis on transition to postsecondary education is awareness of the importance of postsecondary education on future employment rates and financial earnings. According to the Secretary of Education's Commission on the Future of Higher Education (U.S. Department of Education, National Center for Education Statistics, 2016), individuals with a bachelor's degree earn an average of \$2.1 million dollars over their lifetime, which is almost twice that of workers with only a high school education. Adults with a high school degree or less are unemployed at nearly twice the rate of those with a bachelor's degree or higher (College Board, 2006). The importance of college is also highlighted by research on 500 college and university graduates with LD that demonstrated levels of employment and earnings that were consistent with the American workforce in general (Madaus & Shaw, 2006).

Under the IDEA, students and families work with the IEP team to develop individualized academic programs that meets the specific needs of the students. These special education services end at graduation and are not required under Section 504 or the Americans with Disabilities Act. It is now up to the student to self-disclose his or her learning disability to the proper person at the college, to submit documentation that

meets the college's requirements to demonstrate a current and substantial limitation to learning, and to self-advocate to faculty and other college personnel as appropriate. Importantly, the process for self-disclosure and specific documentation requirements can vary from college to college (Government Accountability Office, 2009, Madaus, Banerjee, & Hamblet, 2010).

Colleges offer a range of services to students, depending upon their mission and other institution-specific factors. At a minimum, colleges must provide a disability contact person who can help the student arrange basic accommodations such as extended test time or auxiliary aids (e.g., note-takers). Some colleges offer specialized services that include trained staff to work with students and faculty and services such as counseling, coaching, and workshops in study skills (Government Accountability Office, 2009). However, it is important to understand that such services go beyond the requirements of Section 504 and the ADA, and as such colleges are allowed to charge additional fees (Government Accountability Office, 2009).

Careful transition planning from school to work or postsecondary education requires that the specific needs and functional skills of the student be assessed through individually appropriate transition assessments. This information should then be matched against the type of specific services offered at a range of institutions of differing characteristics (e.g., size, competitiveness, location, residential versus commuter). Banerjee and Brinckerhoff (2010) and Elksnin and Elksnin (2010) offer more specific guidance and tips for helping to search for an appropriate college and to navigate the specific support systems and admissions process.

Under special education law, the assistive technology needs of students must be considered for all IEPs (Banerjee et al., 2010). These technologies can serve as important equalizers for students to access the curriculum and demonstrate their knowledge. It is important to understand that assistive technology services provided at the secondary level may not be required or available at the postsecondary level. Careful transition planning from school to work or postsecondary education must evaluate the student's needs in this area and collect data (e.g., related to availability, skill in using, ownership of equipment and software) related to how these needs might be met in the postsecondary setting (Banerjee et al., 2010). Additionally, postsecondary education requires computer skills that go well beyond assistive technology. Instructional technology is increasingly being used to deliver and assess learning, and concurrently, students are using technology as part of social networking. However, research indicates that students with learning disabilities are less comfortable with instructional technologies (Parker & Banerjee, 2007), which could create new barriers to learning. Transition preparation must therefore consider skills in the area of instructional technology (Banerjee et al., 2010).

Despite these developments and the clear importance of postsecondary education, much still needs to be done. Students with disabilities still lag behind their peers in regard to college

access (45% compared to 53%), and retention of students with disabilities in college remains problematic. Only 18% of students with disabilities who are enrolled in a two-year college program and only 7.6% who are enrolled in a four-year program completed their studies (Newman et al., 2009). Students with disabilities are more likely to attend college part-time, or for part of the year (Government Accountability Office, 2009). Many students, including those with learning disabilities, enter college unprepared for the demands of college-level work, despite having met high school graduation requirements. In 2003-2004, 36% of all undergraduates nationally needed to take a remedial college course, most often in mathematics. Unfortunately, students with disabilities typically take more remedial courses than their non-disabled peers, which lengthens the time and cost to complete a college degree (College Board, 2006).

IMPACT OF LEARNING DISABILITIES IN ATTAINING WORK

For many young adults with disabilities, the complexities of entering the workforce challenge their self-confidence and their willingness to become employed. The late teens and early twenties are a significant time in life in which preparing mentally, emotionally, and physically to work is crucial in being independent and financially successful. There are a number of factors that may limit employment options for young adults with learning disabilities in these early professional years. These barriers include: (1) limited career goals and lack of work experience; (2) few established patterns of employment or volunteer work; (3) limited access to post-secondary education and job training; and (4) workplace discrimination (Lindstrom, Kahn, & Lindsey, 2013).

Furthermore, Repetto et al. (2011) conducted a study that found high school students with disabilities are less likely than their nondisabled peers to be placed into a structured work environment or hold part time jobs in high school. This may be attributed to lack of cooperative opportunities between local businesses and organizations or limited access to connecting agencies in the local area. Without early and direct work experiences, young adults may be unaware of the range of career opportunities available. In addition, career goals for young adults with disabilities are influenced by a number of variables such as achievement skills, expectations of parents and teachers, friends, and economic standing.

Sharfi and Rosenblum (2014) conducted a systematic literature review to understand activity and participation of adults with learning disabilities in various life domains based on the International Classification of Functioning, Disability and Health (ICF) concepts. The largest group of articles was classified into this domain and included 32 articles (51.61%) which related to educational life, work and employment and economic life. Exemplary positive results in the 'major life areas domain demonstrated that most adults with learning disabilities who participated in a 4-year college program experienced high levels of employment satisfaction and employment self-efficacy (Sharfi & Rosenblum, 2014).

Furthermore, graduates with learning disabilities achieved levels of full-time employment, benefits, and salaries that were competitive with statistics of the general American workforce population. Some important issues are noteworthy with regard to these successful adults with learning disabilities: (a) the implications of the learning disability on their work (i.e., difficulties with reading, writing, mathematics, memory) were present in spite of their general success; (b) they developed compensatory strategies in order to overcome their difficulties; (c) later on they recalled more difficult, less enjoyable educational experiences; (d) a high percentage of adults with learning disabilities who were integrated in competitive and satisfying employment still avoided disclosing their disabilities in their workplaces due to concerns about negative impacts on their relationships with supervisors or co-workers (Sharfi & Rosenblum, 2014).

Less optimistic results in the major life areas domain indicated that young adults with a learning disability were significantly less likely to attend 4-year college programs or to graduate from these programs if attending. Furthermore, significant differences existed between people with learning disabilities and their non-disabled peers in favor of the latter with regard to post-college employment outcomes. Within a few years in the workforce, the incomes of adults without disabilities exceeded those of adults with learning disabilities. Moreover, in a 20-year follow-up study it was demonstrated that the socio-economic-status of adults with learning disabilities was much lower than that of their parents.

The findings related to adults with learning disabilities who did not attend colleges appeared to be highly variable. The authors explained such educational and work employment outcomes by different personal and contextual factors. Overall, the ICF can be useful for further exploration of activity and participation characteristics of adults with learning disabilities in various life domains. Such exploration is required in order to gain a wider perspective of their functional characteristics and daily needs (Sharfi & Rosenblum, 2014).

COMMONLY USED STRATEGIES FOR TRANSITION

There are particular challenges for people with learning disabilities that cause continual pressure throughout their lifetime of career development. Studies on employment hardships for adults with learning disabilities frame on-the-job problems in terms of individual areas of needed improvement or alter the issues as a function of the significant societal barriers faced by those who do not fit the norm (i.e., biased attitudes, low expectations, or over-protectiveness toward persons with disabilities). Research on high school and college students with learning disabilities shows a multifaceted career development program is needed. Many young adults lacked a clear understanding of their disability and its impact on career choices and ability to perform a job; many in their late teens and early twenties had unrealistic or no career ambitions; and a large number were not actively engaged in career development and believed they had little control over career decision-making.

A model for career success for adults with learning disabilities comprises the following factors: internal decisions (i.e., powerful desire to succeed, clear sense of goal orientation, reframing the learning disability experience) and external manifestations (persistence, learned creativity, social network providing support). Practices to assist people with learning disabilities to gain and maintain employment are accurate self-knowledge; world-of-work knowledge; self-efficacy enhancement; self-advocacy skills; job search skills; and development of personal qualities.

Peterson et al. (2013) advocated an ideological shift from a focus on deficits to a belief in the gifts, capacities, and dreams of persons with disabilities; in other words, they believed in reframing the learning disability experience on the part of professionals. The following practices can be implemented within this framework; many are the same practices that would be used with people without disabilities, but they are adjusted to the needs of the learning disabled population: (1) accurate self-knowledge about skills, abilities, interests, and goals as well as knowledge of one's disability; (2) world-of-work knowledge acquired through career exploration, job shadowing, and appropriate work experience; (3) self-efficacy enhancement through attributional retraining, anxiety reduction, and reframing; (4) self-advocacy skills, including knowledge of civil rights, disclosure issues, accommodations, assistive technologies, and compensatory strategies; (5) job-search skills; and (6) development of personal qualities such as persistence, resilience, and the ability to build social support networks. Individualized transition plans should be developed as early as possible, be comprehensive, communicate high expectations, reflect the student's references, and be developed in cooperation with parents and social service agencies (Peterson et al., 2013).

VOCATIONAL COUNSELING FOR ADULTS WITH LEARNING DISABILITIES

Adults with learning disabilities have only recently become eligible for vocational rehabilitation services. The Rehabilitation Services Administration accepted specific learning disabilities as medically recognizable disabilities in January 1981 (Lindstrom et al., 2011). Vocational rehabilitation (VR) agencies have implemented their own definition and applied separate diagnostic and eligibility criteria relating to providing services to adults with learning disabilities. Although the VR definitions and eligibility criteria better suit the needs of the adult service agency, the different approaches may have further limited the services provided to this group of individuals (Lindstrom et al., 2011).

Furthermore, adults with learning disabilities even those who have successfully completed high school, some kind of post-secondary education, and found some form of employment still struggle to maintain their jobs, obtain leadership positions, and advance in their workplace. Although the numbers of students in special education with learning disabilities has risen sharply over the past several years, adults with this disability still make up a small percentage of persons receiving services from VR agencies.

Gerber et al. (1992) investigated adults with learning disabilities to determine the patterns of successful functioning that promoted high levels of vocational success. This area of study has been ignored in the developing research base on adults with learning disabilities. In this study of 46 highly successful and 25 moderately successful adults with learning disabilities using ethnographic interviews, it was found that the prevailing theme was control and that control was sought through the pursuit of two sets of themes—internal decisions and external manifestations. The difference between the high and moderate success groups again was clear. Members of the moderately success group set more short-term goals and appeared more easily diverted from their goals. Some were even much less goal-oriented than the high-success adults, and the goals set by the moderate group were much less ambitious.

The theme of control meant that adults with disabilities could have more successful outcomes in their jobs. These themes were common to the entire sample, and the clear difference between the groups was the degree to which the various thematic elements were achieved. These elements and themes were discussed in detail by Gerber et al. (1992), along with a model of successful vocational functioning.

The model suggests that success is a function of the degree of control attained. Success itself is depicted on a continuum from low to high. High success, for the purposes of this model, is defined as we have utilized it in this study (Gerber et al., 1992). That is, high success means having high levels in at least four of five variables—education, job satisfaction, eminence in one's field, income level, and job classification (the fifth variable cannot be considered low). Any individual, therefore, is potentially capable of achieving anywhere from a low degree of success (low across all five variables) to a high degree of success (four highs, no lows).

Overall, Gerber and his colleagues (1992) identified a model of success for adults with learning disabilities that has both internal and external features. In essence, there is a vigorous collaboration between the internal and external features that produced varying degrees of successful functioning for adults with learning disabilities. This finding recognizes that individuals with learning disabilities, like all individuals, can thrive best when they have a close connection to their environment and it is adopted in the workplace. This study also suggested that success in all forms has unique qualities to it. Thus, each of the participants studied had their own formula for success (in a wide variety of forms). There is no question that there are commonalities among all of the adults that pervade their success experiences.

CONCLUSION

Learning disabilities affect millions of Americans throughout their lives. The number of identified individuals is most easily determined for school-age children and, to a lesser extent, college-age adults. Studies indicate that few adults identify themselves as having a learning disability, making it difficult to establish whether individuals are advancing in key areas such as higher education, employment status and financial earnings (Repetto et al., 2011).

Furthermore, changes in the rate of learning disability assessment and identification during the past 10 years have varied across states, perhaps a reflection of the many different interventions and supports being implemented (Repetto et al., 2011). While an increasing percentage of students with learning disabilities receive most of their instruction in general education classrooms, it is difficult to determine whether this results in positive academic achievement. The performance of students with disabilities, including those with learning disabilities on achievement measures of mathematics and reading continues to show little improvement. Efforts to implement effective drop-out prevention programs and early warning systems that help schools identify and intervene with high-risk students should be a top priority in the nation's secondary schools (Repetto et al., 2011).

Moreover, to better facilitate moving successfully from school to college and the workforce, transition planning needs to be improved. A key provision of IDEA, transition planning activities must become a greater priority, with increased input from parents, and more direct involvement by students. Transition planning must reflect the post-high school goals of students in meaningful ways, and individuals from other agencies must be more frequently involved in transition planning for students with a learning disability, particularly disability support services personnel in colleges and universities (Repetto et al., 2011).

The current level at which young people with learning disabilities access and succeed in postsecondary education is unsatisfactorily low. The unemployment rate of Americans with only a high school diploma is twice that of those with a bachelor's degree; their weekly earnings are almost half. Adding to these pressing problems is the emergence of a host of new issues confronting those with learning disabilities, including significant changes in how a learning disability is identified, increased rigor of academic standards in our nation's schools and a rapidly expanding variety of ways to access education. All of these issues will need attention to ensure equal opportunities for students with learning disabilities and to assure that the rights of those with learning disabilities are upheld (Getzel & Briel, 2006).

As the nature of learning disabilities continues to be better understood and the particular needs of those with these neurological differences are better defined, success in all aspects of life should become more achievable for a larger number of Americans with learning disabilities. It is important to consider the well-being of individuals with learning disabilities as society changes, school transformation efforts are implemented, instructional technologies are adopted and assistive technologies are introduced. Each of these will influence the reality of individuals with learning disabilities, and the implications for research, practice and public policy must be considered from the perspectives of those who live with learning disabilities in an increasingly complex world (Denhart, 2008).

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