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Adults with Learning Disabilities: A  
Review of the Literature

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**Adults with Learning Disabilities: A  
Review of the Literature**

Volume 3: Chapter Three

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An emerging theme in professional development for adult literacy program staff over the past decade has been the topic of learning disabilities (LD). As adult educators have come to recognize that the effects of LD can play a significant role in the performance and retention of adult learners, many have sought answers to the following

questions: What are learning disabilities, and how do they affect adult learners? How can I determine which learners have LD? What strategies are most effective for teaching someone with LD? Interest in what it means to provide effective services for adult learners with LD has not always been this keen.

## **FRAMING ISSUES AND EVENTS IN THE STUDY OF LEARNING DISABILITIES**

The definition of LD, knowledge of its prevalence among adults, and acknowledgment and understanding of the connection between adult literacy and learning disabilities are works in progress. This first section of the chapter brings the reader up to date in each area and defines the parameters used in the authors' search of the literature, the results of which are presented in the balance of the chapter, along with implications for research, policy, and practice.

## **Definition of Learning Disabilities**

In the years following the 1975 enactment of the Education for All Handicapped Children Act, many special educators viewed LD as a developmental delay that would be outgrown as an individual matured. The field was too new at that time to benefit from longitudinal studies that followed students into adulthood. Similarly, the adult literacy field did not readily make connections between clients who seemed to have difficulty learning and existing research on the K-12 special education population. Some early articles (Bowren, 1981; Gold, 1981) questioned the incidence of LD among adult learners and debated appropriate practices for adults with LD. But adult literacy programs were for the most part not yet attending to LD in the design and delivery of services for learners or in staff development.

It is primarily in the past fifteen years that studies on adult populations have caused both the special education and the adult basic education (ABE) fields to acknowledge that LD represents a persistent challenge. An important benchmark in the growing recognition of LD as a lifelong condition was the establishment of the National Adult Literacy and Learning Disabilities Center (National ALLD Center) in 1993 with funds from the National Institute for Literacy. The center's goals were to raise awareness among practitioners, policymakers, and researchers about issues of LD in adults, to add to the knowledge base about LD in adults through a research and development effort, and to build capacity among literacy programs to enhance the quality of services provided for adults with LD. The center represented the first effort to bring together professionals in the fields of adult literacy and learning disabilities on a professional advisory board.

With the recognition of LD as a lifelong condition, new definitions have been crafted, making the important acknowledgments that LD affects individuals of all ages, can occur concomitantly with other disabilities, and can impede social skills. One widely accepted definition is that of the National Joint Committee on Learning Disabilities:

Learning disabilities is a general term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical abilities. These disorders are intrinsic to the individual, presumed to be due to central nervous system dysfunction, and may occur across the life span. Problems in self-regulatory behaviors, social

perception, and social interaction may exist with learning disabilities but do not by themselves constitute a learning disability. Although learning disabilities may occur concomitantly with other handicapping conditions (for example, sensory impairment, mental retardation, social and emotional disturbance) or with environmental influences (such as cultural differences, insufficient/inappropriate instruction, psychogenic factors), it is not the result of those conditions or influences. [1994, pp. 65-66]

Simply stated, LD is an umbrella term for a broad array of disorders in information processing, including disorders in one or more of the basic processes involved in understanding or using spoken or written language. Adults with LD are likely to experience

problems that significantly affect their academic achievement and their lives.

## **Prevalence of Learning Disabilities in Adults**

Literacy providers have questions about the prevalence of LD among adults and whether its prevalence in the general adult population is different from that in the population enrolled in adult literacy education. No one study has as yet determined a generally accepted prevalence rate among adults. Varying estimates for specific segments of the population do exist, but the estimates were obtained not through formal evaluation and documentation but through instructor observation, from administrators' educated guesses, and from client self-reports. For example, the U.S. Employment and Training Administration (1991) estimated the incidence of LD among Job Training and Partnership Act Title IIA recipients to be 15-23 percent. When Ryan and Price (1993) surveyed ABE directors

nationwide about the prevalence of adults with LD in ABE classes, estimates ranged from 10 percent to more than 50 percent. Other estimates have been proposed for various subpopulations, but all lack validation data. A reasonable estimate of the prevalence rate among the general adult population can be extrapolated from data on the incidence of LD among school-age children.

Data collected by the U.S. Department of Education for the 1998-99 school year indicates that 4.49 percent of the school population ages six to twenty-one have a primary diagnosis of specific learning disability (U.S. Department of Education, 2000). Many believe that this rate is an underrepresentation because operational definitions of LD vary from school system to school system. This may account for the discrepancy in the reported school-age identification rate and estimates derived from other sources. Research based on brain studies



supported by the National Institute of Child Health and Human Development (NICHD) indicates that 20 percent of school-age children may be considered reading disabled (Lyon, 1995; Shaywitz, Escobar, Shaywitz, Fletcher, & Makuch, 1992). Although not all children with reading disabilities have LD and not all children with LD have reading disabilities, the percentage of individuals with reading-related disabilities is higher than the standard school-based special education reports would lead us to believe. Given that recent studies point toward LD as a persistent, lifelong impairment, it is reasonable to accept a higher prevalence rate for the general adult population than is reported from special education data. For subsets of the general population, such as persons enrolled in adult literacy programs, we can assume a higher incidence rate (Reder, 1995). Although studies indicate that gender is not a determining factor—equal numbers of males and females

have learning disabilities-there is a gender bias in the identification of LD in school-age children, with four times as many boys as girls being so identified (Lyon, 1994; Moats & Lyon, 1993; Shaywitz, Shaywitz, Fletcher, & Escobar, 1990).

### **Selection Criteria for Publications Included in This Literature Review**

The initial computerized database search of Education Resources Information Center, Dissertation Abstracts International, Psychological Abstracts, and Sociological Abstracts yielded 485 references. The search of each database was inclusive of materials dated from January 1990 to October 1999.

Descriptors included the terms LD plus adults plus research, and each of the subtopics of this article: literacy, assistive technology, self-determination and self-advocacy, transition and employment, and screening and assessment. The following criteria were used to determine eligible references:

references had to be research-based, and all types of research were acceptable, including quantitative, qualitative, and results from literature reviews. Initially, seventy-three documents were identified as eligible for this literature review. References were added based on resources referenced in the identified documents or resources published after the computerized search was completed. Ultimately, this review was based on ninety-eight references published between 1989 and 2000 as well as selected references published prior to 1989 that supported background information. This literature review organizes the information into two broad categories: what we know about adults with LD and how we serve adults with LD.

## **WHAT WE KNOW ABOUT ADULTS WITH LEARNING DISABILITIES**

To determine what adult life is like for individuals with LD, we can look to

seven major studies. Five are follow-up studies, following cohorts of individuals into adulthood; one is a retrospective examination of successful adults with LD; and one is a national survey of adult literacy levels that includes persons with self-reported LD. Findings from these major research endeavors are consistent with those of less extensive investigations, which also are discussed.

### **Subjects Studied**

The seven studies sampled a wide range of individuals with LD. Across these studies, data represent individuals who attended public and private schools, both before and after the federal definition of learning disabilities, and who were from urban, rural, and suburban settings, from different socioeconomic levels and ethnic groups, and in different stages of adulthood.

Two studies of national scope are the National Adult Literacy Survey (NALS) and the National Longitudinal Transition

Study (NLTS). The NALS was administered to almost 25,000 randomly selected individuals age sixteen and above across the United States (Kirsch, Jungeblut, Jenkins, & Kolstad, 1993). As part of the NALS interview, participants were asked if they had a learning disability. There were 392 individuals (3 percent) who responded positively to this question (the validity of this self-identification has not been established). The NLTS (for example, Blackorby & Wagner, 1997; Wagner, D'Amico, Marder, Newman, & Blackorby, 1992) investigated a national sample of youth with disabilities zero to two years and three to five years after school exit. Data were compared with that from a sample of individuals without disabilities. Within this study, the postschool outcomes of 337 young adults with LD were examined.

Smaller-scale studies provided a more detailed longitudinal view. Spekman,

Goldberg, and Herman (1992) studied factors related to success and life satisfaction for fifty adults with LD, ages eighteen to twenty-five, who had attended the Frostig Center in Los Angeles. Forty-one individuals from this same group were followed up ten years later by Raskind, Goldberg, Higgins, and Herman (1999). Edgar (1995) collected data from two cohorts of students with and without LD who graduated from Washington State public schools in 1985 and 1990 for up to ten years after graduation. The Kauai, Hawaii, Longitudinal Study (Werner, 1993) began studying a multiracial cohort in 1955. Findings from this study compared life indicators for a subset of twenty-two individuals with LD who were assessed at ages one, two, ten, eighteen, and thirty-two against a matched control group.

Finally, Reiff, Gerber, and Ginsberg (1997) studied seventy-one individuals

with LD with an average age of 44.9 from twenty-four states across the United States and Canada who had been nominated as successful individuals in their fields. This sample was then divided into highly and moderately successful groups that were matched with each other on gender, race, severity, and types of learning disabilities, and parents' socioeconomic status.

### **Definition of Success**

To identify variables related to success, it is first important to define success. In the referenced studies, researchers attempted to make success as multidimensional as possible by collecting data on educational achievements, career and employment status, independent living, personal and social relationships, and social-emotional adjustment issues. When one cohort was studied over time, success was determined by movement toward acceptable adult behavior, achievements

in relation to society's norms, and developmental state. As a result, success for adolescents and young adults looked different from success for older adults. Nondisabled control groups helped determine if persons with LD were different from the norm for their peers. Another success indicator was participants' self-perceptions in relation to their achievements and their satisfaction with their achievements.

### **Consistent Findings**

Given the diversity of individuals studied, it is interesting to note the following consistent findings.

**ACADEMIC EXPERIENCE.** Academic difficulties faced by schoolchildren with LD persist throughout adulthood. Researchers who traced the academic profiles of persons with LD from elementary school into late adolescence and early adulthood found a consistent pattern of lower-than-expected academic



achievement (Spekman et al., 1992; Raskind et al., 1999). Vogel and Reder (1998), in reviewing follow-up studies, found that the high school graduation rate for persons with LD ranged from 32 percent to 66 percent. Ongoing academic difficulties can greatly affect participation and success in postsecondary education. Individuals with LD attend vocational and other noncollege postsecondary programs at a higher rate than their nondisabled counterparts, who attend college and university programs at a higher rate (Murray, Goldstein, Nourse, & Edgar, 2000). It is not surprising that these persons, whose ways of learning often do not match typical school conditions, would gravitate to less academic forms of education. The discouraging news is that they successfully complete these programs at a low rate (Murray et al., 2000; Sitlington & Frank, 1990; Wagner et al., 1991).

**EMPLOYMENT.** During the past fifteen

years, numerous studies have reported the employment status of persons with LD. Peraino (1992), in reviewing eleven follow-up studies of persons with LD, found an average employment rate of 70 percent, with some studies reporting similar employment rates up to five years after high school for persons with LD and their nondisabled peers (Blackorby & Wagner, 1996). Edgar (1995) found that the less-than-full-employment rate for nondisabled individuals zero to five years after high school was partially explained by their enrollment in postsecondary education programs and that individuals with LD engage in postsecondary education at a low rate. Persons with LD who obtain employment upon exiting high school often find themselves in low-wage jobs with little opportunity for advancement and often without health insurance and other benefits (Blackorby & Wagner, 1997; Edgar, 1995).

Reder and Vogel (1997), in a secondary analysis of the NALS data, compared responses of subjects aged sixteen to sixty-four with self-reported learning disabilities (SRLD) with those of subjects who did not report having LD. Persons with SRLD were less likely to be employed full-time (39 percent versus 51 percent) and more likely to be unemployed (16 percent versus 6 percent). They also worked substantially fewer weeks per year, for lower wages, and in lower-status jobs than those in the nondisabled group. Reder (1995) reported that 42.2 percent of families of adults with SRLD were living in or near poverty, compared with only 16.2 percent of the families of their nondisabled peers.

Positive outcomes have also been reported. Employment opportunities seem to improve over time for individuals with LD, with a trend toward higher employment rates the longer

youth are out of school (Blackorby & Wagner, 1997; Edgar, 1995; Frank, Sitlington, & Carson, 1995; Scuccimarra & Speece, 1990). Reiff et al. (1997) found that forty-three of forty-six highly successful adults with LD had an annual income of more than \$50,000, with twenty-one making \$100,000 or more.

**STRESS AND SOCIAL-EMOTIONAL ISSUES.** Living with a learning disability is a major life stressor that, for many, far outweighs other events or conditions (Raskind et al., 1999). The stress comes from a number of factors. For example, memory difficulties can result in many inconvenient and frustrating experiences, such as not being able to recall a person's name when making introductions or searching thirty minutes to find the car keys before leaving for work. Diagnosed adults have to decide whether to disclose their disability, and undiagnosed individuals have to decide if they are going to communicate to others their strengths and needs. Many adults report

hiding their problems with reading, writing, or math as they try to "fake it." Shessel and Reiff (1999) identified the "imposter phenomenon": even some successful individuals feel that they are making false positive impressions and have a fear of failure. These feelings of inadequacy often lead adults with LD to distance themselves from others to avoid being exposed (Spekman et al., 1992). Hoy and Manglitz (1996), in their review of literature on social and affective adjustment of adults with LD, found that adults with LD reported fewer social contacts and a higher incidence of emotional adjustment difficulties than their peers.

**PERSONAL SUPPORT.** One highly consistent finding from these studies is that support from a significant other is key to successful adult adjustment. Some individuals had family support that allowed them to access specialized services and take extra time to become independent (Spekman et al., 1992).

Others were supported by mentors who made them feel special and accepted them as they were. Adults often found support in either intimate or work relationships or both, which helped them gain needed confidence (Gerber & Reiff, 1994). Werner (1993, p. 23) described the impact of support: "The learning disabled youngsters who overcame the odds all had at least one person in their lives who accepted them unconditionally, regardless of temperamental idiosyncrasies, physical attractiveness, or level of intelligence."

### **TOLL OF MULTIPLE RISK FACTORS.**

For some individuals, LD is accompanied by one or more additional risk factors. Spekman et al. (1992) found that individuals who experienced the least success had required hospitalization or residential placement one or more times. In studying this same group ten years later, Raskind et al. (1999) found a small cluster of individuals who possessed characteristics that should

predict success but who had failed to develop an independent adult life. Upon examination, the researchers found that these persons all had developed an additional disability (for example, hearing loss, epilepsy, motor dysfunction). It appeared that this additional challenge affected their ability to become independent.

**GENDER.** Follow-up studies of individuals with LD during the initial postschool years consistently indicate that males with LD are employed at a higher rate than females with LD (Edgar, 1995; Sitlington & Frank, 1990; Wagner et al., 1992). Edgar's study of two cohorts of graduates from Washington State schools revealed that females with LD were employed at a lower rate than both males with LD and nondisabled females. This in part is explained by the phenomena of early parenthood: females with LD appeared to have children at a younger age and at twice the rate as nondisabled females and to receive

public assistance at a higher rate. Edgar (1995, p. 296) concluded that "females with LD are at risk for becoming mothers at an early age without benefit of a supportive partner or financial resources." The risk for females with LD is an amalgam of societal and disability factors. Although great strides have been made, females in general are still striving for career and income equity with males. This study points to the possibility that females may have greater difficulty finding supportive individuals to stand by them in adulthood, especially when they become mothers. The study also calls into question the availability of social contacts to provide childcare and leads into the job market. Because LD is identified at a lower rate in females than in males within the K-12 school system, females with LD who participate in follow-up studies may represent a lower-functioning group of individuals than their male counterparts. Females with LD may come to ABE programs with



more family life issues and with fewer supports than males.

**SELF-DETERMINATION.** The longitudinal research on the status of adults with LD connects well with the growing emphasis on self-determination in disability services. Self-determination, however, has received little attention heretofore in adult literacy.

In 1988, in an effort to improve outcomes for persons with disabilities, the U.S. Department of Education, Office of Special Education and Rehabilitative Services, began an initiative on self-determination that has yielded both conceptual and practical information for working with individuals with LD. Federally funded projects have demonstrated that self-determination skills can be taught (Ward, 1999). Self-determination is a goal for all adults, but it is particularly important for adults with LD because the nature of their disability puts them at risk for leading lives of

dependence and for trying to cope with feelings of failure. Guiding persons with LD to become more self-determined is one way to break the cycle of dependence that can be fostered by education, employment, home, and community environments.

Self-determination is both an attitude and a skill. Attitudinally, self-determined persons are positive about themselves; they are goal-directed, with a can-do frame of mind. Behaviorally, self-determined persons with LD have developed a range of competencies that are valued by society and can be used to offset their specific LD. Five factors contribute to self-determination: self-knowledge, the ability to plan, the capacity to act based on self-knowledge and planning, the ability to learn from experience, and the nature of the environment (Hoffman & Field, 1995).

**SELF-KNOWLEDGE.** Self-knowledge

means understanding one's learning disabilities, including specific information processing deficits (such as auditory processing, visual processing, attention, and memory) and how these deficits affect performance in daily life. This knowledge can lead to acceptance of one's disability-that is, the ability to view one's LD as limited or contained rather than all-encompassing. It is this internalization of information into a realistic self-appraisal that helps the individual make both the internal and external changes necessary to accommodate specific learning disabilities, ultimately resulting in a healthy sense of self (Thomas, 1991). Indeed, some highly successful adults with LD are able to move beyond understanding and acceptance to valuing their disability as something they can use to give themselves a competitive edge (Shessel & Reiff, 1999; Reiff et al., 1997).

**ABILITY TO PLAN.** Goal setting is the

basis for productive planning. Learning to differentiate between wants and needs, to make choices that match one's interests, preferences, and strengths, and to avoid one's areas of weakness is an important part of this process (Hoffman & Field, 1995). Goal setting and planning require organizational skills and the ability to follow a process-skills that can pose difficulties for many adults with LD who struggle with impulsivity, cause-and-effect thinking, and sequencing. Raskind et al. (1999) found that successful individuals with LD were able to use a step-by-step process to achieve goals, compared with unsuccessful individuals who did not identify goals or who reported goals that were unrealistic and grandiose for their current situations. Reiff et al. (1997) determined that a conscious goal orientation was often used to combat fear of failure and instill feelings of control. In a study of tutors and adult beginning readers who used learning contracts,

Ogle (1990) found that adults with learning contracts attended significantly more tutoring sessions and persisted in the program longer than learners without contracts. Tutors and learners alike agreed that involvement in planning instructional objectives and methods led to increased motivation. The process of focusing, setting goals, working toward one's goals, and meeting success feeds on itself: successfully achieving goals, no matter how small, sets the stage for more goal setting and more goal-directed behavior.

**CAPACITY TO ACT ON THE BASIS OF SELF-KNOWLEDGE AND PLANNING.**

When actions are supported by self-knowledge and planning, it is easier to persist and be successful, despite challenges. Successful adults with LD are proactive, fitting situations to their strengths while minimizing their needs. They learn to persevere despite challenges, and they learn to seek creative solutions to tasks at hand (Reiff

et al., 1997). In contrast, unsuccessful adults with LD often fail to recognize that they have power to alter situations and that there are many ways to achieve a final end (Raskind et al., 1999).

**ABILITY TO LEARN FROM EXPERIENCE.** When persons understand their strengths and needs, they are able to evaluate successes and failures in terms of acknowledged areas of ability and disability. When they meet with failure at specific tasks, they recognize that it is the LD that got in the way rather than viewing themselves as stupid, inept, or global failures. Moreover, they use the knowledge gained from experience to ensure that, in attempting the same tasks in the future, they will modify their approach and capitalize on their strengths to minimize the chance of repeated failure. Less successful adults with LD do not exhibit the same ability to learn from difficult situations (Gerber, Reiff, & Ginsberg, 1996).

## **NATURE OF THE ENVIRONMENT.**

Wehmeyer (1997) described three environmental components that support self-determination. First, individuals must be in situations that help them continue to grow and enhance their abilities. Persons with LD are particularly vulnerable in environments that are not in sync with the way they learn or function. Second, they must learn to use accommodations and supports that can transform challenges into learning and working conditions that set the stage for success. Finally, they must have opportunities to learn, to demonstrate competence, and to become part of the decision-making process that determines the ways in which the environment functions.

## **The Changing Workplace and Challenges for Persons with Learning Disabilities**

Teaching self-determination skills becomes increasingly critical when we consider today's changing workplace.

The interpersonal demands of the twenty-first-century workplace can be a challenge: employees are expected to assume greater responsibility, handle diverse tasks, and be team players. Some employees with LD may experience problems when working as part of a team; they may misunderstand oral directions or nonverbal social cues, or they may have difficulty communicating with supervisors or peers (Anderson, 1994; Brown & Gerber, 1994; Dowdy, Smith, & Nowell, 1992). They may have problems requesting and comprehending feedback or constructive criticism of their work performance (Ness & Price, 1990).

Technological advances have resulted in a workplace in constant flux (Dent, 1995). Brown (1997) described both advantages and challenges to persons with LD brought about by the proliferation of technologies in the work environment. Word processing features



such as spelling checkers and grammar checkers can help persons with LD with their writing, and automated calendars can help keep track of daily schedules. On the flip side, voice mail requires accurate auditory perception, which can present challenges for some persons with LD. Loss of support staff, as when secretaries and assistants are replaced by personal computers, demands higher literacy skills for all levels of workers (Brown & Gerber, 1994; Mikulecky, 1995). As the NALS indicated, few jobs do not require some reading and writing.

The workplace should be more disability-friendly since the 1992 implementation of the Americans with Disabilities Act (ADA), particularly Title I, which prohibits employment discrimination based on disability. But the workplace is still adjusting to the concept of hidden disabilities such as LD.

Under the ADA, employers are required to provide workplace accommodations, but only for disabilities that have been disclosed. Individuals have the right to determine whether, when, how, and to whom to disclose their disabilities, and many choose to keep their disabilities a secret. Murphy (1992) found that most people are reluctant to disclose that they have LD when they interviewed for jobs. Among the reasons cited were that most employers do not understand LD, that the information might be held against employees, and that most likely nothing could be done about their problems. These responses imply a need for increased knowledge on the part of persons with LD in the areas of self-awareness, civil rights, and the advantages of disclosure. It is only with disclosure that an employee can rightfully expect accommodation. Likewise, employers must understand that the purpose of providing accommodation is not to compensate for

lack of knowledge or skills but to help otherwise qualified employees compensate for disabilities as they perform essential job functions.

A model for employment success (Gerber et al., 1996) speaks to the process of reframing, or redefining, the LD experience in a positive light. It involves accepting and understanding one's disabilities and recognizing and valuing one's strengths and talents. It also requires a strong goal orientation on the part of the person with LD and an understanding that there must be a "goodness of fit" between the person's abilities and the work environment and responsibilities (Reiff et al., 1997). The model includes knowing how to request appropriate accommodation. Finally, an element critical to employment success is the formation of personal support networks, or "favorable social ecologies" (Gregg & Phillips, 1996).

**HOW WE SERVE ADULTS WITH**

## **LEARNING DISABILITIES**

There are several components to effective service delivery for persons with LD. Starting with the adult learner's entry into a literacy program, service delivery includes assessment of the learner's needs, interests, academic skill levels, and learning strengths and challenges. From assessment data, there evolves planning appropriate instructional interventions and selecting accommodations or assistive technologies, as needed. Central to effective service delivery is the professional development of instructional and administrative personnel to ensure they understand and employ best practices. Effective service delivery in literacy programs requires that personnel have an understanding of current reading research and a review of the literature on assessment, interventions, and assistive technology for adults with LD.

### **Reading Research**

The ability to read encompasses two distinct abilities: identifying words, or decoding, and comprehending words, sentences, and larger chunks of text. Many adults with LD can be considered to have a reading disability (RD), the general term used to identify individuals who read well below what would be expected for their age and intellect. This definition assumes that reading deficits are not caused by external factors (such as poverty or poor education) or sensory deficits (such as visual or hearing impairments).

Dyslexia is the term commonly used in the literature to denote a specific reading disability (Catts & Kamhi, 1999c). Research into the etiology and symptomatology of dyslexia tells us that specific word identification problems are at its root. Dyslexia is diagnosed by examining an individual's phonological processing abilities, including the processing, storage, retrieval, and use of

phonological codes in memory as well as phonological awareness and speech production. Phonological processing is based on an ability to identify, think about, and manipulate the forty-four English phonemes as sounds in individual words (Torgesen & Wagner, 1998). Dyslexia can present as a difficulty in learning to decode and spell printed words. This difficulty often leads to problems with reading comprehension and writing.

### **CAUSES OF READING DISABILITIES.**

The literature on causes of RD establishes a strong link between reading disabilities and developmental language disorders (Catts & Kamhi, 1999a).

Researchers have been able to trace developmental language delays in young children to subsequent reading deficits (Bishop & Adams, 1990; Catts, 1993).

With adults, however, the cause-effect relationship is more tenuous. Poor readers read less (and therefore have different language experiences) than able

readers, who develop vocabulary, background knowledge, and familiarity with complex syntax structures through reading rich and challenging textual material. Readers with deficient word identification and comprehension skills often find reading unrewarding, and this lessens their motivation to read.

Stanovich and West (1989) developed measures of reading volume for both adults and children and found that the amount of information read has an effect on important language abilities. Adults with reading disabilities can thus be expected to have less well-developed language skills either as a cause or as a result of reading deficiencies (Cunningham & Stanovich, 1998).

Catts and Kamhi (1999b) reviewed research on causes of reading disabilities and identified genetic, neurological, and cognitive-perceptual explanations. There is strong evidence to support dyslexia as a genetically transmitted disorder

(DeFries et al., 1997; Catts & Kamhi, 1999b; Light & DeFries, 1995). This means that adults with LD who have children may be trying to cope with their child's disability as well as their own. Some adults become aware of their disability as part of the process during which their child is identified as having LD.

A growing body of research indicates differences in brain structure and function between individuals with RD and normal readers, although with great individual variation (Catts & Kamhi, 1999b). Recent technologies, such as magnetic resonance imaging (MRI) and examination of blood flow in different regions of the brain, allow for noninvasive brain studies. This emerging area of research is too new to have direct application to the development of relevant educational diagnoses or interventions. Thus we are faced with a chicken-or-egg dilemma: are the



neurological differences between able and disabled adult readers the result of organic anomalies or of years of poor reading skills that have affected the brain?

### **ADULTS WITH READING DISABILITIES.**

Some adults with LD have reading disabilities and can be characterized as slow readers compared with their nondisabled peers. Slow reading rates can be caused by lack of skills needed for automatic word identification as well as by ineffective reading comprehension strategies or ineffective reading instruction (Bruck, 1992; Stanovich, 1986). There is convincing evidence that dyslexics' phonological processing deficits are not the result of developmental delays and that they continue into adult life. These deficits may represent an important barrier to the acquisition of fluent word recognition and consequently may affect reading comprehension.

In a recent synthesis of research on metacognition (the ability to monitor and reflect on one's thinking), Collins, Dickson, Simmons, and Kameenui (1998) identified a body of research indicating that individuals with RD can learn to become effective and active readers through instruction aimed at increasing such metacognitive skills as self-regulation. Self-regulation is the ability to use self-talk to engage in the cognitive activities needed to complete a challenging task. For example, self-regulated learners regularly stop during reading to covertly ask themselves questions to check on comprehension. Additionally, a self-regulated learner will actively try to figure out new vocabulary in a reading through a variety of means, such as using context clues; analyzing the word for meaning using prefixes, suffixes, and roots; or stopping to look up the word in the dictionary. It may be crucial for adult literacy programs to incorporate the direct teaching of reading

strategies in a way that helps adults with LD apply strategies to meet their specific reading needs.

### **Assessment**

An important question for literacy providers concerns the assessment process for learners suspected of having LD: How do I know if a learner has LD? Literacy practitioners report that it is not uncommon to find among their adult learners some individuals who seem to have great difficulty learning and retaining information. Most of these adult learners have never been diagnosed for the presence of LD (Riviere, 1998).

Vogel (1998) presents arguments both for and against formal diagnostic testing. Those who question the value of diagnostic testing suggest that the label LD may increase the adult's sense of inadequacy and further discourage risk taking (Alderson-Gill & Associates, 1989; Ross-Gordon, 1989). In addition, the cost of diagnostic evaluations can be

prohibitive. Literacy programs typically do not have access to free diagnostic testing and often refer learners to publicly supported diagnostic services, such as vocational rehabilitation. Eligibility criteria can be a barrier to services, particularly if the client is not looking for a job or for job advancement.

In addition, Ross-Gordon (1996) points out that the sociocultural dimensions of LD assessment for participants in adult literacy programs have largely been ignored. For example, the gender bias discussed earlier (Lyon, 1994) means that women are more likely to enroll in adult literacy programs undiagnosed. Culturally biased testing also can lead to over- or underidentification of cultural or linguistic minority students (Ross-Gordon, 1998).

Despite these arguments, Vogel (1998) points out that diagnosis is necessary for appropriate service delivery. A formal

diagnosis allows persons with LD to access those rights provided for by law, such as accommodations for General Educational Development (GED) testing as well as accommodations for instruction and the workplace. Some adults with LD have confirmed that a diagnosis helps lift some of their insecurity and sense of inadequacy (Hatt, 1991). As suggested in the self-determination literature, to act as their own best advocates, individuals with LD need an accurate understanding of their learning strengths and challenges; LD assessment can provide this understanding. Ross-Gordon (1998) suggests a middle ground: rather than referring all learners for diagnostic testing, literacy providers should refer only those learners for whom test results would yield a benefit that would not otherwise be obtained. The literacy provider should discuss advantages of diagnosis with the learner and then allow the learner to decide whether to seek

diagnostic testing (Fowler & Scarborough, 1993; Ross-Gordon, 1989).

Before referring learners for formal assessment, literacy programs have the option of conducting LD screening. Staff members should understand how LD screening fits into the overall assessment process. Its purposes are to determine if a learner is likely to have LD and to refer likely candidates for more formal diagnostic testing, as appropriate (Payne, 1998; National ALLD Center, 1999).

The advantages of LD screening are that it is inexpensive, quick, and appropriate for large numbers of persons, sometimes in a group setting, and that it does not require extensive staff training (Mellard, 1998). Screening provides a superficial assessment of several ability areas and can help determine the need for further assessments. Staff should know how to identify, select, and use screening tools and understand how LD screening results can affect programs and learners

(Mellard, 1998).

As part of the research and development on *Bridges to Practice: A Research-Based Guide for Literacy Practitioners Serving Adults with Learning Disabilities*,<sup>1</sup> the National ALLD Center (1999) conducted focus groups throughout the nation. The groups consisted of literacy teachers and tutors, administrators, and researchers in ABE, ESL, GED, and correctional education, as well as library literacy personnel. Participants were asked to share best practices in LD screening and instruction. Transcripts of focus group sessions were organized into a set of statements about screening and intervention, and this set of statements, in questionnaire form, was mailed to literacy practitioners nationwide (Sturomski, Lenz, Scanlon, & Catts, 1998). From the responses, ten standards were developed for selecting screening materials. The standards serve as

guidelines for making decisions and are essential for a complete evaluation of screening instruments. There are both administration standards, such as "Guidelines regarding whether to refer the individual for further testing are clear and reasonable," and technical development standards, such as "The screening material accurately predicts who may have a learning disability." The nationally validated standards were then applied to fourteen screening instruments with high frequency of use in literacy programs, and report cards were developed on each of the instruments. These report cards have been published in Bridges to Practice, Guidebook 2: The Assessment Process (National ALLD Center, 1999). The report cards can guide literacy program staff in selecting appropriate LD screening instruments. A literacy program that strives to be responsive to the needs of all learners will have a process in place for screening learners for LD and for making referrals,



as appropriate, for diagnostic testing.

### **Instructional Interventions**

There is a wealth of research on effective instructional interventions for school-aged students with LD. This abundance is in stark contrast with the paucity of research on instructional interventions for adults with LD. The bulk of the adult research has focused on instructional support interventions with college students (Scanlon & Mellard, 1997), whereas investigations of LD instructional interventions in ABE programs are mostly descriptive and lack experimental control. One reason for this is the lack of specialized services and personnel typically found in the college setting. This section of the literature review draws on research across K-12, college, and ABE programs, with an emphasis on interventions that could be offered by ABE teachers and tutors.

**INSTRUCTIONAL MODELS AND PRINCIPLES.** Research on instructional

variables positively associated with successful learning for students with LD strongly supports combining direct instruction with strategy instruction, two models that have much in common. Both are designed to teach a graduated series of steps or procedures and to provide ample opportunity for practice to promote overlearning, and they allow a teacher to closely monitor students' progress. Strategy instruction explicitly teaches covert mental processes through cognitive modeling and often incorporates a mnemonic as a way of remembering the steps of the cognitive task. For example, a simple three-step strategy for paraphrasing uses the mnemonic RAP (Schumaker, Denton, & Deshler, 1984). R stands for "read the paragraph." A stands for "ask yourself, what are the main ideas and details of this paragraph?" P stands for "put the main ideas and details in your own words." This three-step procedure is a strategy because it provides three

prompts to help learners engage in self-talk to determine what is important in a paragraph and to use their own words to remember what the paragraph is about. In teaching this strategy, an instructor would model the three steps of paraphrasing by thinking aloud and engaging learners in explicitly discussing the thinking processes used in each step.

Swanson (1999) reviewed 180 intervention studies and determined that a combination of both direct instruction and strategy instruction for students with LD produced a larger effect than either instructional method by itself. Swanson defined direct instruction as a bottom-up approach that teaches subskills as a way of mastering important basic skills, and strategy instruction as a top-down approach that emphasizes rules and procedures to be applied across settings. Swanson identified many commonalities between the two instructional models, given that each is focused on explicit

teaching: instruction in which the teacher describes and models a skill or higher-order thinking task and then provides the learner with multiple opportunities for practice.

Hughes (1998) reviewed research on college students and adolescents with LD and identified principles of effective instruction that support Swanson's findings. These principles, easily incorporated into direct and strategy instruction, and are listed in Exhibit 3.1.

Instruction is a means to two ends. One is the development of learner competence. The student learns the skill, strategy, or content that is the focus of instruction (for example, learning to read, learning information needed to pass the GED tests). The other is helping the learner become a more confident, knowledgeable, and self-sufficient learner. How intervention programs are

structured is a crucial variable affecting whether self-determination is promoted or hindered (Ryan & Deci, 2000).

**METACOGNITION AND SELF-REGULATED LEARNING.** In comparison with their peers, students with LD are less likely to identify and use effective strategies for learning (Swanson, 1999). While ABE researchers identify adults as self-directed learners (Merriam & Brockett, 1997), adults with LD often lack feelings of self-efficacy because they have a history of educational failure (Adelman & Vogel, 1991). They may be less willing to initiate, to become active partners in learning, and they may not possess the self-knowledge crucial for self-directed learning. Students with LD need instruction that helps them develop metacognition, or awareness of their own thinking processes (Borkowski & Muthukrishna, 1992). Metacognition can be divided into three parts: being planful before engaging in a learning task; being active and efficient during learning by

using strategies and monitoring comprehension and performance; and being self-aware-evaluating one's learning and making adaptations to increase success when faced with a similar task. Engaging in metacognition allows learners to become self-directed, self-regulated learners.

Instructors can help students become metacognitive by teaching them how to analyze tasks and to select from various strategies for accomplishing those tasks. Strategies for comprehending textbook chapters can be different from strategies for comprehending literature. Learners need a repertoire of strategies and then must be able to apply the most useful and relevant strategy to the task at hand. For example, in reading literature the reader may want to use visual imagery to picture characters and action. In textbook reading, headings, charts, pictures, and end-of-chapter questions may be used as guides for identifying important content.

Both strategies are important, but they must be applied to the type of reading task they are designed to meet. Self-regulation depends on prior beliefs and knowledge. Learners need to develop a repertoire of learning strategies from which to choose for various learning tasks, and they need to build an experience base of successful learning in order to believe that they can be successful. Successful learning is dependent on instruction that is offered at the learner's current level of performance. Models of instruction to develop metacognition are rooted in Vygotsky's (1978) concept of scaffolding and interactive dialogue between teacher and learner. Scaffolded instruction is based on what the learner already knows as a guide to determine the next step for instruction. Teachers model important cognitive processes and guide students as they practice and gradually learn these processes to the point of independent performance. Ross-Gordon (1998, p. 81)

contrasts adult basic education and special education teaching models as "placing the teacher at the side of the learner as a guide or facilitator rather than in front of the learner as director of the learning experience."

The principles of strategy instruction can be in direct alignment with adult learning principles. For example, Palincsar and Brown (1984) developed a reading comprehension instructional model called reciprocal teaching. In this model, the teacher is a facilitator who engages in collaborative problem solving with students to discuss, evaluate, and adapt strategies to achieve reading goals. Using principles from reciprocal teaching and other strategy instructional models, Butler (1993) developed a Strategic Content Learning model to tutor college students. Each student chose a task important to current or future academic work and then was tutored to help approach the task



strategically. Results from the six case studies provided evidence that students' performance on their chosen task improved and that they became more self-regulated in their learning. Pre- and post-data also indicated gains in metacognitive knowledge and increased perceptions of self-efficacy.

Highly structured reading instruction approaches are being used for adult students deficient in basic sound-symbol relationships. The Orton-Gillingham (Orton, 1966) approach to teaching reading has been used successfully with dyslexic students of all ages for more than thirty years. The Wilson Reading System (WRS) has incorporated Orton-Gillingham principles of multisensory, cumulative, and sequential instruction to teach analytic and synthetic reading skills. The program uses a highly structured form of direct instruction, which allows for individualized teaching based on continuous assessment of

student progress. Although no controlled studies of the WRS are available, program evaluation and descriptive measures such as retention rate offer an initial base of support for this program's effectiveness (Wilson, 1998).

In summary, effective instruction for adults with LD is a combination of keeping in mind the big-picture goal of developing self-determined metacognitive learners and of employing instructional models that guide interactions between teachers or tutors and learners to accomplish specific learning tasks. Effective instruction also includes understanding various assistive technologies that can help learners meet with success.

### **Assistive Technology**

Assistive technology (AT) refers to devices that can be used to compensate for disabilities. It is defined by the Technology-Related Assistance Act of 1988 as "any item, piece of equipment,

or product system acquired commercially off-the-shelf, modified, or customized, that is used to increase, maintain or improve the functional capabilities of individuals with disabilities." Persons with LD have deficits in the ways they process information; AT can provide a means of modifying the way they receive or express information in a manner that accentuates their strengths. Raskind (1994) points out that the purpose of AT is not to "cure" a learning disability but to help people work around their difficulties. Studies indicate that persons with LD can function effectively and enjoy greater freedom and independence using appropriate AT. Gerber, Ginsberg, and Reiff (1992) reported that highly successful adults with LD tend to use technology, and Raskind, Higgins, and Herman (1997) found that adults who used AT in the workplace attributed their achieving job independence, satisfaction, and success to their use of technology.

AT for persons with LD can include, but is not limited to, recorded books, computers, tape recorders, readers, spellers, calculators, organizers, and word-processing programs. Both high-tech devices such as optical character recognition (OCR) systems or speech recognition and low-tech tools such as organizers are referred to as AT. Several studies have found AT to be effective in addressing the language-based difficulties experienced by persons with LD. Elkind, Black, and Murray (1996) found that adults with dyslexia read faster and comprehended better using an OCR and speech synthesis system than when reading without this support. In addition, the use of systems such as OCR and recorded books open up a world of subject matter for the learner. This may be especially useful for GED test preparation as well as for acquiring strategies for future learning related to life and to work. Higgins and Raskind

(1997) found OCR and speech synthesis systems to be of greatest support to persons with severe reading disabilities. College students with LD have demonstrated improved writing performance with word processors (Collins, 1990; Primus, 1990). The use of organizer systems can help persons with LD to overcome some of the limitations associated with difficulties in memory and planning functions.

Raskind (1998, p. 261) stresses that "not all assistive technologies are appropriate for all individuals in all situations." Further, he suggests that in selecting appropriate technology for an individual with LD, four elements must be considered: the individual, the task and functions to be performed, the specific technology itself, and the specific contexts of interaction. The selection of an appropriate technology will depend on the individual's strengths and weaknesses in areas such as reading,

writing, math, spelling, listening, memory, and organization as well as on the individual's prior experience with and interest in using AT. The goal of using AT is to allow individuals with LD to function effectively in their various roles as family members, employees, lifelong learners, and citizens. The use of AT can make the difference between an individual's self-reliance and dependence on others.

## **IMPLICATIONS FOR RESEARCH, POLICY, AND PRACTICE**

It becomes apparent, in reviewing the literature on LD and adult literacy, that this is a field still in its infancy, with seemingly limitless opportunities for development and growth. This is at once discouraging and exciting: We want answers now about proven strategies for serving all adult learners, but we recognize and appreciate that we and our adult learners can have a hand in shaping future research, policy, and practice.

Few literacy programs now have comprehensive services for adults with LD, and not all current practices are grounded in research. There is a need for reliable, field-tested practices on assessment of adults with LD as well as on curriculum development, instructional strategies, and professional development of program staff. Although there exists an extensive research base on best practices for children and adolescents with LD, we cannot apply this information with confidence to adults until we have appropriate studies.

To serve adult learners effectively, first and foremost we need the increased knowledge that research can provide. Next, we need policy changes, both nationally and locally, to support improved practice. Finally, we need systemic program changes to ensure that services are responsive to persons with LD. Systemic reform is needed at every level of service delivery and, most

particularly, in the professional development of literacy program staff.

## **Research**

Research on adults with LD is perhaps the greatest and most immediate need; it should guide the profession of adult literacy education. From research flows the development of policy initiatives and improved practice.

**DIVERSITY ISSUES, INCLUDING GENDER, RACE, AND CULTURE.** We've learned from the literature review that issues of diversity (gender, race, culture) regarding adults with LD have received minimal attention from the LD field (Ross-Gordon, 1996). We've also learned that 43 percent of adults participating in the NALS with self-reported LD were at or below poverty level (Reder, 1995). And we've learned that females with LD are underidentified in school and consequently enter adult literacy programs undiagnosed (Lyon, 1994). Possible research questions include the



following:

- How do different minority groups construct the term learning disability?
- What types of instructional strategies, curriculum materials, counseling, and other support services are most appropriate, given specific cultural mores?
- What is the extent of gender, race, and primary language bias in the LD identification process?
- How do we appropriately identify LD in persons for whom English is not the primary language?
- What tests are valid and reliable for LD screening for native speakers of other languages?
- In the case of students in classes in English for speakers of other languages (ESOL), how can we know whether a student's difficulty in learning tasks is a result of LD or of language and cultural acquisition problems?
- Is there a difference in the instructional methods effective for persons with LD and those effective for persons with a history of low educational achievement as a result of poverty?

**ASSESSMENT.** The issue of when and for whom diagnostic testing is appropriate must be clarified for literacy providers. The question of how to fund the cost of diagnostic testing must also be addressed.

- What are appropriate uses of diagnostic testing

- and LD labeling of adults?
- Are there times when diagnostic testing is not appropriate?
  - When are learners' interests best served by identification?
  - Do models exist for obtaining diagnostic evaluations at reasonable cost for GED candidates and other learners?

**READING.** The NICHD has been investigating child reading acquisition and instructional interventions for the past several years. Current research on the K-12 population, if replicated with adult subjects, would provide new directions for the field of adult literacy education.

- What do we know about how adults with LD learn to read?
- What role does phonological awareness play in reading acquisition in adults?
- How effective is strategy instruction compared with other methods?
- How can assistive technology enhance reading instruction?

### **INSTRUCTIONAL INTERVENTIONS.**

There is a need to determine if the interventions that are effective for

children and adolescents with LD are effective and appropriate for adults.

- What instructional interventions are most effective for adults with LD?
- Do instructional interventions differ for different types of LD?
- What assistive technologies are most effective for adults with LD?
- What curricular materials are particularly effective for adults with LD?
- What research-based practices supported by the K-12 literature have the most promise for teaching adults with LD?

**EMPLOYMENT.** Few follow-up studies have followed persons with LD past early adulthood. Additional follow-up studies are needed to provide better information about the employment success of adults with LD.

- What is the long-term occupational, economic, and employment status of adults with LD?
- How do men and women with LD differ in these categories from the general population?
- How can we design programs to enhance employment success for persons with LD and, in particular, for women with LD?
- In what ways are persons with LD who disclose different from those who do not?
- What accommodations are most frequently

requested and which are most effective in enhancing job success?

- What are the differences in job success of employees with LD when employers are given awareness training?
- What are the most commonly reported problems and strategies used on the job by persons with LD?
- Are there model programs for incorporating preemployment skills and literacy skills for persons with LD?

**SELF-DETERMINATION.** We have seen that, more than any skill, the development of self-determination is critical to the success of the individual with LD, but we recognize that literacy programs are only now becoming aware of this fact.

- How does the typical functioning of an adult basic education program encourage and hinder the development of self-determination for persons with LD?
- How can professional development encourage teachers to infuse activities into the curricula that foster self-advocacy and self-determination on the part of learners?
- What effect do support groups have on the academic and employment success of adults with LD?
- What is the effect of literacy instruction that

incorporates the development of self-determination on the academic and employment success of adults with LD?

**PROFESSIONAL DEVELOPMENT.** Unless effective professional development is an integral part of a literacy program's plan, it is unlikely that the program will be able to meet the needs of all learners. Everyone who has an effect on the learning environment—from administrators to counselors and assessment specialists to teachers, volunteers, and support staff—must continually improve their knowledge, skills, and attitudes about LD issues.

Borkowski and Muthukrishna (1992) emphasize that instructors must be given time to develop their own mental models of effective instruction. Teacher beliefs about and experiences with instruction are powerful determiners in their readiness to incorporate research-based practices into their teaching. Until a research base on instructional models for

adults with LD is developed, appropriate instruction for students with LD can be based on the extensive literature from special education, reading research, and college support services. The challenge is not a lack of information on effective instructional models appropriate to the ABE setting but the lack of system support that allows for focused, sustained professional development opportunities for ABE practitioners. Providing professional development for this teaching force, largely composed of part-time professionals and volunteers, will be a challenge, but it can be the first step in building research-validated practices for teaching adults with LD in adult basic education programs.

- What models of professional development have the greatest effect on changed instructional practices for serving persons with LD?
- What difference have the Bridges to Practice materials (National ALLD Center, 1999) and training made in the design and delivery of program services for adults with LD?
- What difference have the program changes listed above made on learner performance and success?

**ROLE OF THE COMMUNITY.** It has long been acknowledged that adults with learning disabilities need a support system to help them realize their potential. It would be helpful to understand the extent and the nature of support that truly makes the difference between self-determination and dependence for persons with LD.

- What role does a community play in serving adult learners with LD?
- In what ways can a community help adults with LD on their journey toward self-determination?
- In what ways does community involvement make a difference in the adult education program's ability to serve adults with LD?

## **Policy**

State and federal governments need to become proactive in developing policy for adults with LD. A first priority is to promote high-quality professional development for literacy staff members. Another priority is to encourage publishers of textbooks and instructional materials to develop products that are

sensitive to the needs of persons with LD. Also, in recognition of the need for professional development of instructional, administrative, and support services staff, a third priority is for the establishment of a national professional development and resource center to provide continuing support to literacy programs serving adults with LD.

Research on participation and success rates of individuals with LD in all types of postsecondary education is discouraging. These findings bring into question how well our secondary schools are preparing individuals with LD for the range of postsecondary opportunities. Better communication between secondary education and ABE systems might influence secondary education programs' effectiveness in preparing students with LD to participate and succeed in postsecondary education. The poor success rate of persons with LD in postsecondary education and the lack of



research on this group in ABE point to the need for additional support services personnel, such as counselors, screening and intake specialists, diagnosticians, job coaches, and LD instructional specialists as an integral part of the adult literacy program. Although this may be an additional expense, such an investment may yield significant results in successful program completion.

In light of the requirements of the Workforce Investment Act of 1998, adult literacy programs have a mandate to prepare learners for the world of work. For learners with LD to be successful in obtaining and retaining employment, community agencies must integrate and coordinate services, including educational diagnostic services to identify the presence of LD and suggest interventions, counseling services, advocacy groups, job-training services, and educational services. This opens up the whole assessment issue: whether,

when, and to whom to refer learners for diagnostic evaluations for LD.

Instruction, job coaching, and other postplacement services may need to follow the learner into the workplace and continue until the learner has mastered the essential functions of the job.

Accountability measures may need to include postplacement follow-up to determine worker success after exiting an ABE program. Again, this calls for coordination among adult service agencies.

Education is needed to increase employer awareness of LD. It is likely that poor employee evaluations and job loss have often resulted because of employers' lack of knowledge about LD and appropriate job accommodations.

The attributes of persons with LD, including those of creativity, persistence, and willingness to work hard, if recognized and encouraged in the right environment, can make these individuals

valued and contributing employees. With the ADA, a mandate is in place. The appropriate implementation of this policy calls for a continued, concerted effort from governmental agencies, the business community, advocacy groups, educators, LD professional associations, and the media to help change negative perceptions and to recognize, support, and encourage the career development of employees with LD.

### **Practice**

Literacy programs have only recently begun to consider changes to enhance services to persons with LD. The Bridges to Practice materials (National ALLD Center, 1999) and training represent a first effort to encourage systemic reform of literacy programs and services, but resultant changes have not yet been measured across programs. Ways to build on the Bridges to Practice resources should be explored: every component of service delivery, from intake and assessment through planning

and instruction, must be considered for its responsiveness to persons with LD. Programs also must look beyond their walls to collaboration with other community agencies.

Coordinated local program efforts can enhance employment opportunities and job success for adults with LD among diverse service providers (such as ABE, vocational rehabilitation, public assistance). The literacy field would benefit from the dissemination of model demonstration projects on interagency coordination that avoids replication of intake, screening, referral, documentation of disability, and determination of eligibility across agencies.

Within ABE programs, allocation of staff responsibility should be examined to determine how screening for LD might best be accomplished. Because screening may lead to referral for further

diagnostic services, it is important for ABE staff to identify and establish relationships with organizations providing those services. Once an individual has a diagnostic profile, program staff need to understand how that information should inform instruction. Finally, when a person has documentation of LD, program staff should be skilled in helping the individual learn how to appropriately disclose the disability to employers, coworkers, and other educational program staff. Learning when and how to disclose one's disability is a complex issue that deserves attention and support from ABE programs.

The research reviewed herein has direct implications for how the adult literacy field defines its services. The development of self-determination, which can be fostered both directly and indirectly, is critical for many persons with LD. Demonstration projects (Ward

& Kohler, 1996) recommend the following strategies: direct teaching of self-determination, including problem solving, self-development, and self-advocacy; mentoring and modeling; and involvement in goal setting and planning. These projects reported that it was necessary to provide learners with multiple opportunities for practice and to allow learners to have a voice in choosing and evaluating learning goals. The K-12 literature indicates that there is a direct link between the development of self-determination and metacognition or, more specifically, between metacognitive deficits and reading problems. It is time for adult literacy programs to explore how to incorporate instruction in these areas and to evaluate their impact for both diagnosed learners and those with suspected but undiagnosed LD.

The issues identified here imply a need for ongoing professional development of

program administrative, instructional, and support staff. Ideally, professional development would include information not only about LD but also about the change process and strategies for initiating and sustaining change.

However, this may not be feasible for a number of reasons. First and foremost, adult literacy teaching and tutoring is for the most part a part-time venture. This often means that programs experience frequent staff turnover and may find it difficult to provide ongoing professional development beyond the basics. Typical professional development for new literacy providers generally covers such essential topics as adult learning, effective instructional practices, and use of selected instructional materials. It is only in recent years that some literacy programs have begun to include general information about LD in staff development workshops. In addition, many ABE instructors, teaching in churches, homes, libraries, community

centers, and social service agencies, work without the support of other teachers or staff nearby. Therefore, it may not be practical for many programs to include more in-depth professional development such as peer coaching and team teaching. And the addition of resource specialists to a program's budget means that resources and budget line items must be reallocated.

Each program must make decisions about how to deploy resources for the benefit of all learners, based on its history of financial and community support, level of involvement of community stakeholders in the program's design and delivery of services, and the program's vision and mission statement. A literacy program whose vision includes the concept of "success for all learners" cannot ignore the need to provide improved services to persons with LD and to help all learners reach their full potential.



## **Note**

1. A major accomplishment of the National ALLD Center was the research, development, and publication of *Bridges to Practice: A Research-Based Guide for Literacy Practitioners Serving Adults with Learning Disabilities* (1999), a series of guidebooks with accompanying video and professional development manual. The purpose of the program is to encourage systemic reform of literacy programs to enhance services for adults with LD.

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