

Research Document

A Two Hundred Year History of Learning Disabilities

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## Abstract

The purpose of this paper was to track the history of learning disabilities and collect intervention theories which might be helpful for adult college students suffering from any number of learning disabilities (LD). There is a vast difference between a learning difficulty and a learning disability; an individual with learning difficulty can learn using conventional teaching techniques while LD requires specialized interventions which depend on the type of disability. The most common forms of LD are dyslexia-also known as word blindness, dyscalculia, dysgraphia, and short term memory dysfunction. LD can result from injury; it can be hereditary; it can come in many forms. Although it is no longer considered a form of mental retardation, it is now known that true LD is directly related to some type of brain malfunction. The study of LD did not originate in the 1960s-as some people believe-but actually spans the time from Napoleonic reign to space age exploration. Scientists, researchers, and educators know quite a bit about LD now, but they still do not know nearly enough to help the multitude of individuals afflicted with those conditions.

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## A Two Hundred Year History of Learning Disabilities

Educators have been perplexed for generations by the inability of some students to succeed in, or even comprehend, assigned classroom studies. Some students do well in academic studies, while others must struggle to achieve even mediocre success. Some students find schoolwork assignments easy to complete, while others find the experience to be a nightmare. Some students are successful in elementary and secondary educational levels and proceed on to higher degrees of education; others become frustrated with a public school system that constantly fails them and drop out at the earliest possible moment, simply to end the painful experience. Although many explanations can be offered to explain why some students do not perform satisfactorily, an underlying learning disability (LD) is often the culprit. The most common forms of LD are dyslexia, dyscalculia, dysgraphia, and short term memory dysfunction.

Although the United States federal government became involved in LD through task forces, legislation, and funding during the 1960s and 1970s (Hallahan & Mercer, 2001), LD is not a new concept involving scholastic difficulties; its roots can be traced back to the early 1800s. The earliest believed recognized case of LD occurred in 1802 when Franz Joseph Gall—a German-French anatomist and physiologist and Napoleon's surgeon—recognized an association between brain injury in soldiers and subsequent expressive language disorders. In 1822, Gall published a book entitled *Sur les*

*Fonctions*, in which he outlined his belief the brain was divided into twenty-seven separate "organs," each corresponding to a discrete human faculty. He believed one of

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those separate organs controlled the memory of things; the memory of facts; educability; perfectibility. Therefore, any imperfection in those processes must be due to a cranial fault (Who, 2005).

In 1877, Adolph Kassmaul-a German physician-coined the phrase *word blindness* for loss of ability to read (Hagw & Silver, 1990). The phrase, which is still used today to describe a form of dyslexia known as alexia, refers to a neurological disorder characterized by loss of the ability to read or understand the written word, either totally or partially. Partial word blindness permits the individual to recognize letters, but read only certain types of words (Miller, 2002).

A German eye doctor named Rudolf Berlin actually initiated the use of the word dyslexia as it pertains to the ability to read, but it was John Hinshelwood-an ophthalmologist-and W. Pringle Morgan-a general practitioner-who took Kassmaul's work on LD further into scientific research. In 1896, Hinshelwood noted the difference between alexia-complete word blindness-and dyslexia, which is a partial impairment (Christenson, Griffin, & DeLand, 1988). They both speculated that difficulties with reading and writing were due to congenital word blindness. Nevertheless, the dominant view for several years to come stressed the difficulties were caused by visual processing deficiencies. There remains continuing interest in the role of visual factors in the etiology of dyslexia, especially in the low level of impairments of the visual system.

Later research would discount that connection and adopt the view that dyslexia is a verbal deficit (BMJ, 1996).

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Two decades into the twentieth century, American psychologists and researchers began to notice work done by their European counterparts who had been focusing on brain-behavior relationships, as well as learning disabilities exhibited by both children and adults (Hallahan & Mercer, 2000). As a result, the Americans began to zero in on language and reading disabilities, placing importance on perceptual, perceptual-motor, and attention disabilities. The phenomenon of learning disabilities, then called the invisible handicap, was first noted by Dr. Kurt Goldstein in the late 1920s. Samuel Orton, Grace Fernald, Marion Monroe, and Samuel Kirk were just four researchers during that era that made substantial headway on understanding some of the more common forms of LD.

Samuel Orton teamed with his wife, June Orton, to study the field of language disabilities. Together they conducted research, trained educators and therapists, and treated individuals with reading and writing difficulties. Educational historians state they were two of the most important individuals in the history of dyslexia (Columbia, 2003).

Orton attended Ohio State University, the University of Pennsylvania School of Medicine and Harvard University. Along with Anna Gillingham, he studied pathology at Boston City Hospital in 1905-1906. He initiated a successful remedial reading training system program based on visual-auditory-kinesthetic linkages. In 1925, he published a paper detailing his version of word blindness (Lloyd, 2005).

Because earning a degree did not guarantee a career in academic psychology for women, many opted for therapeutic and other nonacademic positions. Therefore, Grace Fernald joined William Healy's Juvenile Psychopathic Institution in Chicago in

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1909. She developed her own kinesthetic method of teaching spelling and reading. She used her finger to trace in the air words that gave her students difficulty; thus incorporating visual aid into the learning process. She became famous for her teaching methods and students having difficulties were frequently referred to her by academic diagnosticians (Barchas, 1998). She maintained extensive records on the progress of her students, and in 1921 published a paper on her style of kinesthetic method's effects on word recognition (Lloyd, 2005).

Marion Monroe was a former research assistant of Orten, prior to moving to Chicago where she worked at the Institute for Juvenile Research. In her work she stressed the phonetic approach to reading and the importance of providing students exhibiting reading difficulties with intensive instruction. Utilizing the experimental research method, she analyzed groups and students and instituted new educational techniques. She also introduced the discrepancy concept as a way of identifying students with reading disabilities (Hallahan & Mercer, 2001).

Samuel Kirk worked with Monroe at the University of Chicago, where he earned his master's degree, and was very much influenced by her work in phonics. During this time he became acquainted with a young boy, labeled by the establishment as word blind. After working with the lad for some time he developed and refined an assessment approach for pinpointing specific learning disabilities in children. He was

directly responsible for the creation of the Illinois Test of Psycholinguistic Abilities (ITPA) which assesses specific psycholinguistic abilities and disabilities in young children

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(Hallahan & Mercer, 2001). This test also facilitates an assessment of a child's abilities for purposes of remediation, and evaluates his/her cognitive and perceptual abilities in communication. In 1936, he co-authored the book *Remedial Reading Drills* with T. G. Hegge, and W. D. Kirk (Lloyd, 2005).

During this same time frame, several European researchers immigrated to the United States to continue their work because of political unrest in their homelands. They conducted research into the perceptual, perceptual-motor, and attention disabilities of adults with brain injuries (Hallahan & Mercer, 2001). Kurt Goldstein, Alfred Strauss, Laura Lehtinen, and Newell Kephart were just a few of the immigrants playing major roles in those areas of study. Strauss, Lehtinen, and Kephart worked closely together; ultimately they recommended a distraction-free environment, thus placing a heavy emphasis on the remediation of perceptual disturbances which they believed would aid students with LD.

Kurt Goldstein, native of what is now Poland, was educated at Breslau and Heidelberg; he became interested in aphasia when he studied under Carl Wernicke. He collaborated with Adhemar Gelb on visual agnosia-which they called mind blindness. The papers the two submitted for publication attributed mind blindness to problems with Gestalt formation of visual images. After writing his famous book, *The Organism*, in 1933, he immigrated to American because of anti-Semitism.

Goldstein had a holistic theory of the human organism, one that challenged reductivist concepts and approaches that deal with localized symptoms. He greatly influenced many researchers in the field of Gestalt psychology (Duchan, 2001).

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Strauss, along with Lehtinen and Kephart created the diagnostic category of minimal brain damage in children. He presumed that children with LD, who were not mentally retarded, hearing impaired, or emotionally disturbed, had minimal brain damage (Duchan, 2001). In 1943, he published his research conclusions which were entitled *Diagnosis and education of the cripple-brained, deficient child* in the Journal of Exceptional Children. His identification of behaviors, exhibited by minimally brain damaged children, became known as the Strauss Syndrome. In 1949, he founded the Cove School in Racine, Wisconsin which was established as a residential school for brain injured children. He remained the school's president until his death in 1957.

Laura Lehtinen, a teacher originally from Germany, worked with Strauss at the Wayne County School at Northville Michigan during the mid 1940s (Audiblox, 2000). They believed that a student's academic learning skills would be improved if their perceptual skills could be developed. In 1947, they published *Psychopathology and education of the brain-injured child* wherein they recommended specific instructional approaches related to perception. Lehtinen believed factors such as bulletin board displays and teacher jewelry were distractions that interfered with the children's ability to think and learn. She also recommended avoiding references to the letters *b* and *d*, because a contiguous use of those letters was confusing to the student (Friend, 2005).

Kephart worked with Strauss at the Cove School during the late 1940s and 1950s. At this time, they expanded the study of brain injury to include children of normal intelligence. They argued that perceptual-motor, cognitive and behavior problems found among children with mental deficiencies were also found in children with normal

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intelligence. Thus, they concluded that children of normal intelligence exhibiting those problems were also brain damaged; this led them off track because of an error in deductive reasoning, and that error would influence their work for some time (Hallahan & Mercer, 2001). They were greatly criticized for their deductions, because there was no scientific evidence that brain damage existed, and their reasoning was based only on the children's behavior. Nonetheless, their path of study was followed by many others.

Kephart continued research into stages of perceptual development that evolved into a perceptual-motor development theory named after him. He believed that development of motor behaviors arose from a hierarchy of motor achievements. The central idea of the theory concluded that motoric responses to a child's environment are the central core to all behavior. He was one of the first researchers to incorporate neurological networks into his theory of development, and he concluded that discovery by a child of how certain movements can affect their environment; such as eye-hand coordination, substantiated his theory. Because he believed all perceptual development rises from a hierarchy of motor skills, he deduced that learning disabilities must arise from a general slowdown of achievement in motor development and cause a breakdown of that achievement at some point (Perception, 1995).

In spite of the inability of researchers to prove LD was caused by neurological dysfunction, middle-class parents during this zeitgeist welcomed the explanation of why their child was experiencing such difficulty in school. Prior to the 1960s, those children were frequently described as *dumb*-even though they were smart in other ways; they often tried very hard and the parents believed they would learn, if only they could.

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Those same children were often labeled *mentally retarded*-a label they would wear for the rest of their lives (Duchan, 2001). The parents of those affected children clung to the concept of a neurological dysfunction being the cause of their child's problems like a drowning person would cling to a lifeline thrown from a sinking ship.

Many changes took place between 1960 and 1975; not only in research that changed the scientific views of LD, but the general public's awareness of LD improved dramatically. The federal government even became involved and established resources and guidelines to assist the public school systems in dealing with LD issues. It was during this time period that the term *learning disabilities* was first introduced, the federal government included learning disabilities on its agenda, parents and professionals founded organizations for learning disabilities, and educational programming for students with learning disabilities blossomed-with a particular focus on psychological processing and perceptual training (Hallahan & Mercer, 2001).

Joseph Wepman, a former Director of the Aphasia Center, conducted research in auditory and visual perception, aphasia, and psycholinguistic processing. He not only developed various methods of standardized measures of auditory perception, in 1960 he-in collaboration with Lyle Jones, a research professor of psychology at the University

of North Carolina-developed the psycholinguistic model as a way of conceptualizing various difficulties associated with aphasia (Duchan, 2001).

Samuel Kirk continued to be heavily involved in research aimed at understanding the conflicting variables that continually arise with individual students. He is officially credited with coining the term *learning disabilities*. In 1963 he used it as a means to

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identify groups of what he called perceptually handicapped children. This term became the most frequently used label in special education. Parents and advocates used the term as a central theme in their efforts to organize and gain services for LD students. As a result, major organizations began to surface; such as the Division for Children with Learning Disabilities of the Council for Exceptional Children and the Association for Children with Learning Disabilities. In 1965, Barbara Bateman-a student of Kirk-reintroduced Monroe's discrepancy model for the identification of students with LD (Hallahan & Mercer, 2001).

The federal government defined LD in their own terms as a guideline that public schools could follow to establish student eligibility for government funded support services. In general, the US federal code states a disorder is one or more of the basic psychological processes involving language, spoken or written, that manifest itself in an imperfect ability to think, speak, read, write, spell, or to do mathematical calculations, including conditions such as perception disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The code further states that the term LD does not include learning problems that primarily are the result of hearing, or motor disabilities, mental retardation, emotional disturbance, or of environmental

economic disadvantage (Lloyd, 2005). Although the federal government had good intentions when they established the above guidelines, they left interpretation of the code up to individual states. This created inconsistencies regarding which students qualified for special assistance, and the result was frustrated parents and students from coast to coast.

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The Children with Specific Learning Disabilities Act, passed by Congress in 1969, was enacted to create support service programs for students with LD. In 1970, Public Law 91-230 consolidated the Education of the Handicapped Act with other programs on the education of children with disabilities. This legislation included authority for the United States Office of Education to award discretionary grants for LD to support teacher education, research, and model service delivery (Hallahan & Mercer, 2001).

In 1968, Kirk published a revised edition of his ITPA testing guidelines, and although the ITPA suffered from a lack of support by other professionals, it reinforced the idea that children with LD have intra-individual differences and it underlines the concept of diagnostic-prescriptive teaching. For the following eight years, numerous researchers and educators devised a variety of remedial techniques they perceived as visual and visual-motor educational tools. Even though those techniques were found to be ineffective in addressing the academic problems of LD students, it indicates that scientists and educators were taking the problems seriously.

Barbara Bateman, a nationally recognized leader in special education law, worked with Kirk during the 1960s; together they published *Diagnosis and remediation of*

*learning disabilities in exceptional children*. During that time, social and environmental issues were seldom taken into consideration when educational programs and teaching methods were devised. It was simply accepted that students from lower social and economic environments would not do well in the schools. After reading reports of successful case histories involving dedicated teaching methods during the early 1970s,

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Bateman realized that teachers often underestimate the importance of their role in determining a child's future success. She suggested that the term *learning disabilities* be replaced by the term *teaching disabilities* (Audiblox, 2000).

As far as LD is concerned, the period from 1975 to 1985 remained fairly stable as researchers and educators moved toward a consensus on the definition of LD and the methods that should be used to identify afflicted students. In 1975, Congress passed Public Law 94-142, the Education for All Handicapped Children Act (NIC, 1997). With this law, learning disabilities finally achieved official status as a category eligible for funding for direct services (Hallihan & Mercer, 2001). Even though the federal government continues to use the definition outlined in that law, other groups-parent groups, organizations and research groups-adopted their own individual definitions. In 1977, the federal government issued regulations pertaining to the identification of students with LD that incorporated the idea of an ability-achievement discrepancy.

The U. S. Office of Education funded five research institutes in 1977 which were intended to focus on a variety of LD issues. This action propelled researchers toward developing educational methods for students, since remedial techniques to address visual and visual-motor disabilities were ineffective. The institutions involved in this

funding were: Columbia University-information processing difficulties; University of Illinois at Chicago-social competence and attributions about success and failure; University of Kansas-educational interventions for adolescents; University of Minnesota-decision making process related to identification and curriculum based assessment; and

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the University of Virginia-children with LD who also had attention problems and providing strategies for direct use of academic tasks (Lloyd, 2005). The work of these institutions remains influential in terms of theory and practice.

In the mid 1970s, Sigfried Engelmann, along with several of his colleagues, developed a series of Direct Instruction (DI) programs for language, reading, and mathematics, which emphasized the systematic teaching of language sub skills and their integration into broader language competence (Mac Iver & Kemper, 2004). Several large scale studies later found DI to be highly effective (Lloyd, 2005).

From 1980 to 1985, researchers and educators raced from one project or technique to another in search of ways to aid students suffering from LD. Numerous new theories were bandied about until the field began to solidify in the late 1980's, except for one major problem; the number of students identified as having LD doubled to over 2.8 million students. That huge increase in the numbers caused some to wonder if students were being misdiagnosed; data indicated that LD was responsible for over half of the disabilities suffered from students (Hallahan & Mercer, 2001). There was apparently not much consideration given to the possibility that a large number of students with LD had been misdiagnosed previously.

From the later part of the 1980s, into the turn of the twenty-first century, ongoing research projects showed that students with LD are capable of learning task-appropriate strategies that enable them to succeed in school. A great deal of work focused on phonological processing to help students read more efficiently. Many studies confirmed earlier conclusions that LD may be the result of neurological dysfunction and that

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heredity is implicated frequently in the varying learning disabilities. Modernistic and post modernistic supporters of special education squared off in a long lasting battle regarding the effectiveness of differing treatment methods. Modernists believe that special education should use instruction to enhance the functioning, knowledge, skills and socialization of individuals with disabilities. Postmodernism views LD as a social construction that is based on incorrect and immoral assumptions about difference; that view focuses on changing social constructions that limit the success of individuals with disabilities (Hallihan & Mercer, 2001).

Attitudes and understanding of learning disabilities have changed dramatically over the past two hundred years. It has not been that long ago that many educators believed there was no such thing as a learning disability, that the child was either lazy or just plain stupid. Although no educator would subscribe to that concept today, many LD individuals do see themselves in that light (Sharma, 2004).

It is now known that a learning disability is not connected to mental retardation; LD sufferers frequently have high IQs. It is also not a single disorder, but includes disabilities in any of seven areas related to reading, language, and mathematics; these include seven different forms of reading LD-dyslexia, as well as dyscalculia for

mathematics, and short term memory disorders. Identifying and diagnosing children with LD is a tremendous challenge for counselors and educators, however it is crucial that the challenge be met at the earliest possible period of development. Not only must the afflicted child be identified as having LD problems, the specific type of LD must be

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determined accurately or efforts to help the child scale roadblocks that threaten to hamper their success cannot be overcome. It is also just as important for an LD child to understand their disability as it is for a child suffering from any other disease or disability to understand their personal limitations.

The fact that the public school system frequently fails to adequately and correctly educate LD children should be no surprise. Even though the federal government backs many educational support services, individual states use their own interpretation of even what a learning disability is and strict criteria is used to determine eligibility for those programs. If a pupil does not meet every single element of the state's criteria for identification of LD, they are denied access to available support programs that could help them succeed academically. When this happens, the individual carries their resentment, frustration, and low self esteem into adulthood. They drop out of school at the earliest possible moment and end up in dead-end jobs that cannot support an individual, let alone a new family. In short, the public school system has failed them. This sad scenario does not need to futuristically continue generation after generation, as it has in the past.

Once LD has been properly identified, the next step is putting the proper intervention into action to help the student succeed. This requires a great deal of patience, time, and understanding of the student's particular LD problems-on the part of the educator, counselor, or tutor. For instance, using phonic interventions-which are effective in Phonological Dyslexia-for treatment of Literal or Neglect Dyslexia would not only be ineffective, but frustrating for an already frustrated student.

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Directing the student to efficiently utilize knowledge they are gaining toward use in areas for which they have an aptitude, is the next step in a successful program. This is particularly true for adults as they attempt to overcome obstacles-such as core classes required to obtain a college degree if the class covers areas directly affected by their LD ;i.e. a math class for a student with dyscalculia seeking a degree in computer repair. For this student to succeed they must be able to relate the mathematics to learning how to properly bill their customers, keep their own business accounts, or even conduct smart grocery shopping techniques. In short, they must be able to identify the mathematical problem to a real life situation-particularly theirs.

Changing the entire classroom structure to a more dynamic format would benefit all the students, not just those with LD. Past educational styles of lecture-test formats are not all that effective. Therefore, classrooms should be conducted under more dynamic styles to include more direct student involvement in the learning process. This is true for all levels of education, from elementary to post-graduate.

There are a multitude of individuals in our society suffering from some form of LD that sincerely wish to become productive citizens and to obtain financial security.

During the past two hundred years, understanding of the elements of different forms of LD has changed drastically. The road from the past to the present was not a straight and narrow path, but one that curved, twisted, and even reversed itself; even now we have not reached the end of the road. Creative educators and researchers are desperately needed to further advance the knowledge necessary to serve the student population of this country. Without caring and inquisitive people willing to seek out new

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horizons, there can be no new intervention theories. We've come a long way, but we're not there yet.

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