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EDUCATION OF THE VISUALLY IMPAIRED

Visual impairment presents significant barriers to living and learning. Those who are without any vision must learn through their auditory and tactical senses. Those with partial vision can use their limited vision to supplement stimuli received from their intact senses. The history of educating children and youth who are visually disabled, irrespective of the condition, followed a path from isolation—where they stayed at home; to segregation—where they were educated in special schools and/or classes; and, finally to integration, where they are taught with their sighted peers and are prepared as citizens and live in communities with the nondisabled.

Historical Development

Transitions from isolation to segregation for those who are visually impaired began in the early 19th century when students left their homes and lived as residents in schools. The oldest and best-known residential school is the Perkins School, started by Samuel Gridley Howe in the United States in 1821. Students were taught with others who were visually impaired. The first publicly funded residential school for the blind was started in Ohio in 1837, the same year that Louis Braille published his system of touch reading. Later, day classes were started in urban areas, sometimes in public libraries. Advocates then pushed for classes in public schools. The first was started in Cleveland, Ohio, in 1909.

The age at which a person becomes visually impaired has implications for that person's learning. When visual impairment is present at birth, children have a more limited understanding of their own surroundings than those whose onset occurs later. Also, the more severe the disability, the more challenging is teaching and learning.

Children and youth who are diagnosed as visually impaired may be legally blind or partially sighted. Their condition is based on visual acuity and field of vision limitations. Visual acuity is the ability to distinguish forms and to discriminate details. Acuity is typically measured using letters and symbols as presented on the Snellen chart, which is a device used by vision professionals to measure visual acuity. Normal vision exists when one can read a 3/8-inch letter at 20 feet. Those whose visual acuity is 20/200 or less in the better eye after correction are considered legally blind. Those whose visual acuity is no better than 20/70 in the better eye after correction are considered partially sighted.

In addition to the lack of visual acuity, one may be legally blind due to a restricted field of vision. With normal vision, objects can be seen within a range of about 160 to 170 degrees. But a person whose field of vision is restricted to 20 degrees or less is legally blind. Others are legally blind when their sight is restricted so that they cannot see objects in the center of their field of vision.

Fewer than 2 children in 1,000 are visually impaired, and about half of them have one or more additional disabilities. These children with multiple handicaps present unique challenges for teaching and learning. In recognition of these challenges, state and federal policymakers have long subsidized programs for preparing qualified teachers and related personnel. Through the availability of assistive technology, instruction and normalization for those who are visually impaired have improved. Assistive technology includes devices that are used to increase, maintain, or improve the functional capabilities of individuals who are visually impaired. Examples are low-vision aids such as: bold-line paper, Braille-writers, screen readers, Braille printers, and communication devices. Optical character recognition systems scan printed material and “speak” the text. And, Braille embossers create hard-copy Braille from text files. Assistive devices need not be high technology; for example, in 1932, under President Franklin Delano Roosevelt’s New Deal program, the Library of Congress made Talking Books, books read aloud on phonograph recordings, available without cost to any citizen who was legally blind. Technologically upgraded, the program continues to this day.

Recent Developments

Classes for those with limited sight were termed “sight-saving classes” and all instruction was conducted orally. It was not until the 1960s that research evidence established that children with low vision do not weaken their sight through use but, in fact, their vision improves with use.

Improved access to instruction occurred in 1951 when the Perkins Braille was invented. It was the first fast method for writing Braille. By the 1970s, assistive technology for teaching the visually impaired had become more available. For example, the Kurzweil Reading Machine, a text-to-speech optical scanning machine, provided access to print material not otherwise available for the visually impaired. It was the precursor for the current portable devices, including lightweight and portable scanners.

Educational organizations changed as technology and scientifically based information about visual impairment became available. Three distinct day school programs emerged: full-time special classes where students received all of their academic instruction; the resource room where the students were enrolled in regular classes where they were taught but, when needed, went to a resource teacher for special instruction; and the itinerant teacher plan where a specialist in teaching students with visual impairments travels from school to school and provides individual instruction to students who are enrolled in regular classes. These specialists also consult with regular classroom teachers as needed.

Remnants of these plans have continued but have been supplemented by adaptive technology; in particular, computer applications. These have made it possible for those who are blind or visually limited to function in the same environments as their sighted peers. Increasingly, adaptive technology has helped students to read with the use of text magnification and speech computer equipment. These require less specialized training of teachers and less instructional time than does Braille.

Movement from segregation to full integration has been spurred by research findings that demonstrated the efficacy of normalization; that is, the ability of those who are disabled to live in typical environments. This change occurred in tandem with the civil rights movement in the late 1960s

and early 1970s. First, organized parent advocacy groups pushed for permissive legislation that allowed public schools to educate children who were disabled. Later, federal legislation, Public Law 94-142, passed in 1975, required public schools to educate all children regardless of their physical, mental, and emotional conditions.

The 1975 legislation, named The Education for All Handicapped Children Act, is considered by advocates to be the most important law ever passed for children and youth with disabilities. It requires that each eligible student have a written individualized education program (IEP). Its successor, Public Law 101-476, Individuals with Disabilities Education Improvement Act, focuses on school programs that lead to postsecondary placements—both schooling and employment. Thus, the IEP became the “plan for adulthood” as an aid to prepare students with disabilities to live, work, and participate in their communities.

Challenges

This plan has special meaning for those who are visually disabled because their transition to adulthood is fraught with many obstacles. One barrier is the heavy reliance on Braille materials. Approximately 94,000 students in the United States need such material, but many public schools still cannot afford to employ Braille-qualified teachers, who are in short supply. In many instances, volunteers must be used to produce Braille texts.

Unemployment among adults who are visually impaired is high—only about 50% hold jobs. A contributing factor is the high drop-out rate from high school; only about 45% of adults who are visually impaired are high school graduates. Braille literacy is critical for employment; only one third of those who do not know Braille are employed.

Limitations of mobility present still another obstacle. Orientation and mobility instruction are critical to help normalize students and adults who are visually impaired. But there is a serious shortage of qualified instructors and few training programs. Other adults, not visually impaired but who also need orientation and mobility instruction, add to this shortage.

With full inclusion as a goal, secondary education presents a major dilemma for students who are visually impaired. As a group, they tend to

perform significantly lower on standardized tests than do their sighted peers. Students with visual impairments were placed in high school general education classes long before the 1975 law. Although most of them spend almost all of their time enrolled in regular classes, their achievement, on average, has been significantly below that of their sighted peers; about half fail at least one course in general education. Although full inclusion is the goal for students who are visually impaired, there is some movement away from total physical inclusion and toward meeting students' assessed needs using the same general curriculum.

Advocates for total physical inclusion argue that studies show that students who are full-time in such placements demonstrate higher achievement than do those with less time in general education classes. The weakness of this argument, however, is that such placement is typically based upon the readiness of students to succeed in the subject for which they are enrolled in general education. Since such placements are IEP initiated, it is reasonable to assume, pending research evidence to the contrary, that such placement is selective and based upon students' readiness to achieve in particular general education classes and subject areas. As a result, many special educators are increasingly more interested in providing these students with access to the general education curriculum rather than physical placement in general education classes. To achieve this end, such access is being gained through supplementing general education placement with resource room instruction, individual tutoring, and computer delivered instruction.

Teaching students who are disabled, including those who are visually impaired, had been based mainly upon learning through association until the 1970s when educators began using behavior modification principles in their instruction. With association, learning occurs when two events, not previously associated by the learner, are connected. Behavior modification gained much acceptance through the work of B. F. Skinner and his followers.

Skinner's research identified operant behaviors; these are not elicited by particular stimuli but are affected by the consequences that follow the behavior. In particular, feedback to students as to the quality of their responses has been shown to

be an effective way to facilitate learning. The wide use of feedback and knowledge of results laid the groundwork for cognitive theorists, who view learning as a reorganization of perceptions that helps develop new ideational relationships. Applications of cognitive theory have further advanced teaching and learning for those who are visually impaired. By melding the two, behavior modification and cognitive theory, cognitive behavior modification has emerged as both a teaching paradigm and a treatment for disordered thinking and beliefs. Cognitive behavior modification offers great promise for teaching all students who are disabled, including those who are visually impaired.

Conclusion

In the 21st century, the future of those who are visually impaired is much brighter than it has been. Enlightened policies, a better-informed population, and an increasingly rapid development of teaching technologies will help achieve their desire for learning and normal living.

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See also Ability Grouping; Alternative Assessment; Competency-Based Education; Differentiated Instruction; Educational Technology; Education of the Deaf; Gallaudet, Edward; Inclusion; Life Adjustment Education; Programmed Instruction; Special Needs Education

Further Readings

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