This chapter has been written as if it were 20 years from today, looking into the future and attempting to outline changes that hopefully will have occurred in public schools, specifically in the area of the provision of support programs for students who have disabilities. It is predicted that the public school of the future will provide full accommodation, allowing students with disabilities a free, appropriate, and equal opportunity for education to the greatest extent possible. To facilitate this, educational administrators and public school teachers will work closely with rehabilitation counselors in developing curricula and assessing what kinds of accommodations can be made within the school. The chapter includes specific sections on future accommodations within the public schools, and the promise of assistive technologies. (Contains 19 references.) (GCP)
Support Programs for Students with Disabilities in the Public Schools

By

Leo M. Orange
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Together, we’ve begun to shift disability policy in America away from exclusion, towards inclusion; away from dependence, towards independence; away from paternalism, towards empowerment.

—President Bill Clinton
Statement to the National Council on Disability, April 16, 1993

This chapter has been written as if it were 20 years from today. We are looking into the future (as much as one can) and attempting to outline changes we hope will have occurred in public schools, specifically in the area of the provision of support programs for students who have disabilities. Our approach is most optimistic; this optimism is based, in part, on the successful passage of both the Americans with Disabilities Act of 1990 and the Individuals with Disabilities Education Act of 1990. The Americans with Disabilities Act was developed to end discrimination against people with disabilities in employment, public transportation, public accommodations, and telecommunications. The Individuals with Disabilities Education Act is an amendment and retitling of the Education for All Handicapped Children Act of 1975, which was originally stimulated by congressional concern for and dissatisfaction with the complete exclusion of millions of children with disabilities from the public school system and the inappropriateness of educational programs that were available for these students (Price-Ellington & Berry, 1999–2000; Rubin & Roessler, 2001).
One major emphasis of these education acts was the idea that school-age children must be placed in the least restrictive school environment possible. This resulted in a greater degree of mainstreaming and inclusion of children with disabilities into regular classrooms and schools to be educated with their nondisabled peers.

Our vision for all students who have disabilities in 2021 is based on four premises: (a) that every public school will have support services for students with disabilities; (b) that rehabilitation counselors will be available for these students in every school; (c) that architectural barriers that impede access for people with disabilities to move freely about their environment will no longer exist; and (d) that U.S. society will adopt a philosophy of total inclusion of people with disabilities in all aspects of life and living, including public education. This chapter, admittedly optimistic, foresees positive change for students and all people who have disabilities in American society.

The Future

We predict that the public school of the future will provide full accommodation, allowing students with disabilities a free, appropriate, and equal opportunity for education to the greatest extent possible. To facilitate this, educational administrators and public school teachers will work closely with rehabilitation counselors in developing curricula and assessing what kinds of accommodations can be made within the school. A rehabilitation counselor will be available for all students who have disabilities; each school will have a center for students with disabilities where students go to arrange reasonable accommodations when needed. The public school system will become an ideal setting for the education of children and youth who have disabilities. The goals of the 1975 Education for All Handicapped Children Act will be finally realized by the year 2021.

We are hopeful that the accommodations described later in this chapter will be established at the beginning of the twenty-first century, enabling inclusion of most students with disabilities to occur within every public school. Rehabilitation counselors will assist both students and schools in providing accommodations and permitting a free and appropriate education in the least restrictive environment possible. Examples of accommodations are provided in the next section.
Inclusion and Integration

_Inclusion_ is the activity of making individuals with disabilities members of a larger group (Rubin & Roessler, 2001). When full integration occurs, individuals with disabilities join other members of society in all aspects of education, employment, and leisure-time activities. Federal law mandates inclusion. The Individuals with Disabilities Education Act states that all individuals with disabilities have the right to a free and appropriate education in the least restrictive environment possible.

Federal law mandates integration. The Rehabilitation Act of 1973, the Rehabilitation Act Amendments of 1992, and the Americans with Disabilities Act of 1990 discuss the integration of individuals with disabilities into society. The purpose of each of these federal laws is to make the social environment accessible to individuals with disabilities. Once physical barriers are removed and accommodations made (ramps rather than steps, assistive technology for computers and telephones, interpreters, etc.), people with disabilities will be able to interact with other individuals within society.

Students with and without disabilities need each other in the educational environment (Hanley-Maxwell, Szymanski, & Owens-Johnson, 1998; Price-Ellington & Berry, 1999–2000). Studies show that when two different groups interact in a positive or beneficial way, attitudes of the people in the groups become more positive. Ideally, integration results in the development of ongoing personal interactions, which may range from casual acquaintances to intimate relationships. In our public schools of the future, we visualize inclusion of students with disabilities resulting in greater acceptance by nondisabled students of people who are different, leading to further inclusion of people with disabilities in all aspects of society. Along with this trend, we see a gradual diminishment of societal discrimination toward people with disabilities, leading to greater opportunities in education, work, and social activities.

Accommodation within the Public School

We now want to change focus to the theme of this chapter: a view of what public schools will look like in 2021 in terms of providing accommodations for students who have disabilities or chronic medical conditions. The public school of the future
will accommodate verbal communication limitations; visual communication limitations; stamina limitations; limited use of the upper and lower extremities; and cognitive limitations. Let us jump ahead to where the future is the present, to see what changes are in effect in public schools in 2021.

**Verbal Communication Limitations**

In 2021, computer technology is of great value for students with disabilities who either have limited verbal skills or are completely nonverbal. This includes students who have limitations of hearing, total deafness, or difficulty interpreting verbal information. Students in the latter category include those with learning disabilities, traumatic brain injury, cerebral vascular accident, mental retardation, and some types of neurological deficits. Through the increased use of written material and computer-based communication, the rehabilitation counselor and teacher, working together, have been able to mainstream into regular classes many children and youth with verbal communication limitations. This occurred early in the twenty-first century.

In the year 2015, basic sign language became part of the curriculum for all students. This functional language is presented to students in innovative and creative ways to stimulate an interest in learning; most students enjoy learning sign language because of the way it is presented to them. In developing this newly required language in the public schools, rehabilitation counselors stressed its importance not only to youth, but to all people as they become elderly. Hearing loss occurs to everyone as they age; by the time this occurs to most people, it is usually too late to learn alternative means of communication. For hearing-impaired and deaf students, each public school now has amplified telephones, telecommunication devices, audio loops, flashing lights and alarms, well-lighted areas, and, for individual students, vibrating pocket pagers. Since 2002, all public schools have had TDDs (telephone devices for the deaf). When needed by students for particular projects or activities, qualified interpreters are available (Brodwin, Parker, & DeLaGarza, 1996).

**Visual Communication Limitations**

Students with limitations of sight or total blindness have benefited from legislation and its application by rehabilitation counselors and by specialists in orientation and mobility. For
children and youth with residual vision, accommodations have included greater use of the other senses. Specialists in visual disabilities have assisted school administrators to use improved lighting and greater illumination in certain areas, and color and contrast in room design, space and arrangement, and size and distance. Closed-circuit television enlarges print electronically; personal computers and peripherals with large print magnification, speed output, and optical scanning are available at the office for students with disabilities, an office existing within all public schools.

Textbooks in Braille are ordered from the U.S. Library of Congress months ahead of when they are needed, so they arrive before the beginning of classes to give students sufficient preparation time. The combination of a scanner, speech synthesizer, Braille printer, and regular-print printer give students who are blind access to most of the information used in the classroom environment, and permit the student to produce a work product in a format accessible to everyone (Espinola & Croft, 1992).

Before school opens in fall for the academic year and on the first days of school, an orientation and mobility specialist helps any visually impaired students who are new to the school to navigate on campus. Other students participate in these activities to help them become familiar and comfortable with disability and to enable them to provide assistance as the academic year progresses. Administrators, teachers, and an orientation and mobility specialist work together to remove or minimize the impact of architectural barriers. Equipment and furniture is not moved about during the school year without blind students being fully informed and oriented to any changes.

Stamina Limitations

Many disabling conditions and chronic illnesses, such as paralysis, multiple sclerosis, respiratory conditions, neurological diseases, and muscular dystrophy, can cause constant or intermittent problems with physical stamina, fatigue, and mobility. A significant problem encountered by people with severe disabilities concerns energy expenditures. The development of home-based education through use of the Internet and closed-circuit television, allowing the individual to be "part of" the classroom, has helped students with stamina limitations.

The home-based program is designed to allow students with
these and similar problems to take work home and maintain full class participation through closed-circuit interactive television, computer modems, and the Internet. The system allows for seeing, hearing, and interaction as if the individual were actually in the classroom. In fact, when the younger students are initially introduced to this, some feel that the student at home is actually in a room adjacent to the classroom instead of at home. Several of the younger students go as far as looking around the area adjacent to the classroom to find the student who, in reality, is at home.

Limited Use of the Upper Extremities

This limitation of function may be caused by paralysis, paresis (partial paralysis), severe incoordination, an absence of one or both upper extremities, congenital deformities, and certain neurological conditions (e.g., cerebral palsy). Because of the wide range of possible limitations, there are many potential accommodations. Custom-designed prosthetic and orthotic devices help maximize a student’s ability to grip, pinch, and hold objects, and extend the joints through a normal range of motion (Brodwin et al., 1996). The devices selected allow for easy functioning by the individual, and take into consideration his or her highest level of capability. Almost any part of the body that has voluntary control can operate some type of computer interface. Sensors can detect the slightest movement if the person lacks the strength to operate a switch on a computer. Many people with disabilities can effectively and efficiently use a standard computer keyboard with a single finger, mouth stick, or head pointer.

Limited Use of the Lower Extremities

Some disabling conditions, such as spinal cord injury, amputation, other permanent injuries of the lower extremities, polio, cerebral palsy, and multiple sclerosis, can cause difficulty in ambulation and mobility. Full accessibility for wheelchairs on campus has occurred within the first two decades of the twenty-first century. Rehabilitation counselors and school administrators prompt attendance at classes. Power wheelchairs and small motorized vehicles allow for easy ambulation on campus. Parking spaces close to buildings are available for students who drive to school. Rehabilitation counselors work with school staff to minimize walking distances and ambulation for students with limited use of their lower extremities or those who are easily
fatigued (Crewe & Krause, 1987; Temkin, 1996).

**Cognitive Limitations**

Intellectual functioning limitations and learning deficiencies may cause deficits in many areas or in one specific area, such as language or mathematics, depending on the individual (Brodwin et al., 1996). Through advances in medicine and medical treatment, many of these limitations have been minimized or resolved. Advances in computer technology have allowed professionals to become adept at developing individualized programs to maximize the potential of individuals who have some form of cognitive impairment. Caring, involvement, and understanding among all school staff have decreased the emotional impact of these conditions, both on the person with a disability and on others. Mainstreaming—full integration whenever possible—and acceptance by nondisabled students have created an atmosphere “near normal” for all individuals within the school. School staff is made aware that there can be occasional emotional volatility, and each person is sensitized to this possibility and informed on how to react if such problems occur. Assistive technology has helped students with limitations of cognitive-intellectual functioning. Computer software technology has enhanced written language skills, and the advances in artificial intelligence have minimized limitations of many students. Word processing, spelling- and grammar-check programs, and the development of “thinking” computers have become valuable assists to students with limitations in cognition. Supercomputers help with learning, making associations and inferences, and decision making. Availability of information has been greatly enhanced since the turn of the twenty-first century.

**Attitudes: Acceptance, Inclusion, Independence, and Empowerment**

Disability has broad sociocultural implications that go beyond physical, mental, and emotional limitations. Public school personnel now realize that sociocultural considerations include discrimination in education and employment. Although schools in the twenty-first century are fully inclusive, some employers still discriminate against people who have disabilities, regardless of the individual’s knowledge and abilities to perform the particular job. In the past, and still in the present, social and psychological reactions of employers and the sociopolitical
structure of society have created a “disabling environment” that has resulted in significantly diminished job and career potential. People with disabilities often have found themselves unemployed or underemployed, earning salaries significantly less than nondisabled workers. Although society has been changing, residuals of discriminatory behavior have remained, especially in the area of employment. Students with disabilities are taught to advocate for themselves, especially when apparent discriminatory practices exist, and nondisabled students are encouraged to advocate for their disabled peers when they see discrimination occurring (Brodwin et al., 1996; Maki & Riggar, 1997; Orange, 1995).

A great advance in the arena of attitude is that schools have been teaching students to view disability-related functional limitations as located within the environment, not within the person with a disability (Hahn, 1982, 1988; Orange, Brodwin, & Johnson, 1993). In this model, the architectural barriers of the past and the negative attitudes and behaviors of society, rather than the disabilities themselves, are seen as the cause of any limitations persons with disabilities have. When the barriers in society no longer exist, disabilities will be minimized.

Within the early twenty-first century, we have seen the removal of many architectural barriers, allowing people with disabilities greater access to education and employment, as well as social and leisure-time functions and activities. This, along with the changing attitudes of society, has helped people with disabilities become more included in daily life. No longer perceived as being outside the minority group model, the 43 million people with disabilities in the United States are now afforded all the rights and privileges of other minority groups. The civil rights movement and consumerism movement for persons with disabilities were given strength by the Americans with Disabilities Act of 1990. Unemployment for people with disabilities has decreased and underemployment has diminished. Although opportunities and salaries for people with disabilities are not yet equal to their nondisabled peers, the gap has narrowed, and opportunities continue to grow.

**Assistive Technology**

We are in an age of rapid technological change. No sooner is a personal computer introduced than an even more technologically advanced model replaces it. Legislation of the
1970s mandated strong support for people who have severe disabilities and chronic illnesses, and with it developed a national focus on meeting these individuals’ independent living needs, including their educational achievement. The successful inclusion of students with disabilities requires that public school curricula become fully accessible to all students—regardless of the severity of the student’s physical, emotional, or intellectual limitations—whenever possible. Technology can be a valuable and practical assist for inclusion of students with disabilities into the mainstream of education. The use of the microcomputer in education is a vital assist to students with disabilities in their educational achievement, as well as in other areas of daily living and independence. Use of technology to its full potential requires public school administrators, teachers (including those in special education), and rehabilitation counselors to become even more aware of and adaptable to the uses of technology in the school setting by individuals with disabilities.

In 2021, with the increased and evolving presence of technology in the classroom and at home, and the infusion of technology into the curriculum, accessibility is immediately enhanced, and solutions are only a keystroke, mouse click, or Internet “surf” away. All too often, technology has been viewed as a stand-alone classroom component, a place where students go when they have completed all of their required assignments, or where they can prepare their practice activities and homework. Technology is a powerful vehicle for instruction, curricula access, and accommodation if that technology is used within the curricula and not viewed as an adjunct to teaching and learning activities. Computer technology in 2021 is seen as a tool, much like paper and pencil, and students are encouraged to learn and use advanced technology across all learning activities, both within and outside the classroom.

In an inclusive setting, the use of technology has become a device for learning and providing access to the curriculum. Infusing educational curricula with technology occurs at the lesson- or unit-planning phase of curriculum development. Thereby, it becomes an integral and integrated part of the educational process. Once the curriculum is developed, methods are explored to provide accommodation for students with disabilities, thereby allowing them to achieve their maximum potential in the least restrictive environment possible.

In becoming productive, independent, and able to assimilate into and achieve within society, people with disabilities must
overcome numerous obstacles. To maximize vocational potential, the individual needs a quality and comprehensive education. Technology of 2021 allows students access to an equal education, whether it is within a regular school environment or, for those with the most severe limitations, at home or in an institution.

Assistive technology has helped provide persons with disabilities greater independence in the areas of social, educational, vocational, and leisure-time pursuits. Two major drawbacks of assistive technology are its expense and the rapid obsolescence of equipment. In working with students, rehabilitation counselors attempt to locate funding sources that have the means to purchase the needed assistive technology for the student.

The microcomputer as assistive technology has had tremendous impact on the lives of people with disabilities. These computers have become readily portable and fully accessible; a laptop version is used in the classroom. The student can use the computer both as a conversational and as a classroom aid. The various interfaces (standard keyboard, mouse, touch-key switches, and sensors) allow students with disabilities to operate computers effectively and efficiently. Since the beginning of the twenty-first century, with government support and incentives, electronics companies have been designing computers and peripheral equipment with the needs of people with disabilities in mind. With the use of modern assistive technology, individuals who have disabilities are on an equivalent playing field in this information age.

**Career Counseling and Employment**

Legislation that passed in the 1990s ensured that students with disabilities would be provided equal opportunities to participate in the decision-making process; this included career planning and employment. As has always been the case for students who do not have disabilities, the thought of going to work in the future is instilled beginning in kindergarten. In the past, poorly developed self-concepts, ambivalence about obtaining meaningful employment, and limited information about occupations have been obstacles to employment for people with disabilities; in 2021, these problems have been replaced with strengthened self-esteem, the concept of working as a reality, and the provision by counselors of sufficient occupational information to make informed choices. Disempowerment has
been replaced by mainstreaming in education, inclusion in all aspects of society, and self-empowerment.

The American with Disabilities Act of 1990 went far in helping diminish discriminatory practices in the workplace. Today’s employers concentrate more on an individual’s abilities, rather than his or her limitations. With the more progressive philosophy of career development for students with disabilities, teachers and counselors look at careers and career paths for these students, instead of looking at low-paying jobs with little probability of advancement. Employers are more knowledgeable and cooperative than they once were in offering advancement and career path positions. The words of Kosciulek (1998, p. 114), “The goal of empowering people with disabilities to live independently, enjoy self-determination, make choices, contribute to society, and pursue meaningful careers should be a common one for all professionals serving individuals with disabilities,” have now become a reality and a part of everyday practice.

The empowerment philosophy emphasized by Emener (1991) has been adopted by our public school systems. Paraphrased, the four tenets of this philosophy are the following:

1. Each individual is of great worth and dignity.
2. All people have equal opportunities to maximize their potential and are deserving of help from society, whenever necessary, to achieve this potential.
3. People strive to grow and change in positive ways.
4. Individuals are free to make their own decisions about managing their lives and futures.

Career counseling is no longer done to the student; the student is an active participant in all phases of the process. Professionals have learned through experience that active involvement of the person with a disability is one of the essential elements to successful career counseling interventions. Computers have enhanced the career counseling process for all students. Students with disabilities have benefited from the latest in computer technology and access, and can be instructed to guide much of this process independently. Processing of information has become simpler; students can now access information on careers from their homes and spend as much time on it as they feel they need.
Conclusion

The future for inclusion of people with disabilities in all aspects of American society is an outcome that would have a most positive impact on this country and its citizens. Through mainstreaming and inclusion, students in our schools will have greater opportunities to become productive members of our society. Legislation occurring just before the turn of the century paved the way for these changes. The Individuals with Disabilities Education Act and the Americans with Disabilities Act produced change in two most important areas: education and employment. These legislative acts and others, with the current removal of architectural barriers and the positive change in attitudes that has been occurring, prompted us to take an optimistic approach when looking toward the future.

We believe that all public schools of the future will have (a) ready access to a rehabilitation counselor, and (b) a wide range of support services for their students who have disabilities. Although persons with disabilities currently show higher rates of unemployment and underemployment, the gap is narrowing, due in part to the Americans with Disabilities Act and also to a gradual change in employer attitudes toward workers who have disabilities. We believe that future changes within the educational system will provide for greater inclusion of students with disabilities in the public schools. With more positive societal attitudes, full accessibility in a barrier-free environment, and uses of computer technology, much that we have written within this chapter will come to fruition by the year 2021. The words of President Clinton at the beginning of this chapter provide a most positive vision of the future for persons with disabilities: "Together, we've begun to shift disability policy in America away from exclusion, towards inclusion; away from dependence, towards independence; away from paternalism, towards empowerment."

References


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