

Issues in the Field of Blindness and Low-Vision, Kay Ferrell, Ph.D.

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Issues in the provision of special education and related services to infants, children, and youth with visual disabilities can be organized into the three broad categories of access, equity, and quality. But our perspectives on these issues differ somewhat from that of our colleagues in deaf education and severe disabilities. This paper was written to articulate the issues in the field of blindness and low vision, explain my perspective on these issues, and to promote understanding among our personal and professional communities.

Historical Trends

Lowenfeld (1981) wrote that people with visual disabilities were treated as defective, considered expendable, and sometimes killed in ancient times, because they could not contribute to the work of the community—which was, then, war and survival. The rise of monotheistic religions led to a belief that blind individuals needed to be cared for and sheltered by society. It was in this atmosphere of charity that blind people began to make strides in their own right. People like Thomas Blacklock (1721-1791), John Metcalf (1717-1810), Nicholas Saunderson (1682-1739), Francois Huber (1750-1831), and Marie Theresia von Paradis (1759-1824)—writers, scientists, civil engineers, ministers, musicians - achieved fame and notoriety because of their own achievements. Blind persons were thus among the first people with disabilities to be recognized as being able to benefit from education. Notably, this occurred largely because blind people themselves, without benefit of formal education and assistance from professionals, demonstrated that they could do the same things that sighted people did.

Schools for the blind were established in the United States during the first half of the 19th century not to segregate children who were blind, or to shelter them, or even to provide care for them. They were established with the belief that children who were blind and visually impaired were capable individuals who could become contributing members of society. Mandatory education was not universal at the time, and many children with and without disabilities were not attending school. Schools for the blind were thus affirmations of the potential of blind children in a society that had not yet come to adopt education as a social and political goal. Blind children had not been excluded from education in the same manner that other children with disabilities were; there was never a sense that education of students with visual impairments was a waste of time or money. Rather, time and money were an investment in the future.

Residential or specialized schools for the blind in the United States were modeled after the boarding schools of Europe (Irwin, 1955). Students were subject to the same academic curriculum standards used in the public schools. By the mid-20th century, residential schools for the blind were operated almost like private schools, envied for the quality of education they provided. Many of the U.S. schools adopted a cottage system of residential living, meant to duplicate home environments (Hatlen, 2000). Still, as early as 1871, the founder of the first residential school in the US, Samuel Gridley Howe, "deplored the social sequestration of residential schools" (Hatlen, 2000, p. 7). Public school classes for students with visual disabilities thus began in 1900, primarily in large cities, and by the 1930s residential schools were "mainstreaming" secondary students in local high schools, 40 years before the term came into the educational lexicon in 1974 (Merriam-Webster, 2001).

This orientation is critical to an understanding of our support of residential schools today. Because they were formed on principles of promise and potential, they are not viewed as symbols of oppression or charity. On the contrary, schools for the blind are centers of knowledge and expertise for teaching methodologies that circumvent visual processes. They were our first teacher training institutions, providing an apprenticeship model of training with experienced teachers and optimum immersion with students with visual disabilities. Thus, one of the primary differences between the field of blindness and low vision and other special education fields is that the residential school system was never intended to separate blind students from society. It was established to provide an education that would prepare children with visual disabilities to take their places in society, as employees, family members, and taxpayers. They grew up, graduated, and left the residential school. There was never an intent to create institutions that would isolate or stigmatize. The intent was the same as the purpose of all education—to produce good citizens who would contribute to society and the common good. Public schools, then as now, were simply unprepared to educate blind children and were somewhat ignorant about their potential.

The number of children with visual disabilities exploded in the 1950s, as large numbers of infants born prematurely survived (Hatlen, 2000). Many of these children developed retrolental fibroplasia (now called retinopathy of prematurity) and total blindness. The known count of children with visual disabilities in the United States grew 158% from 1950 to 1960, and another 50% from 1960 to 1970, after the rubella epidemic of the mid-1960s. But the interesting figures are the changes in the proportion of children with visual impairments educated in separate environments: from 88.4% in 1950, to 46.6% in 1960, to 31.5% in 1972 (Lowenfeld, 1981). In school year 1998-99, the proportion of children with visual impairments in separate school environments has dropped again to approximately 15% (American Printing House for the Blind, 2002; US Department of Education, 2001).

As these figures demonstrate, the residential school system in the United States was changing long before the mandates of the Individuals with Disabilities Education Act. In many states, residential schools have evolved from boarding schools to specialized resources for public schools. In other states, enrollment has changed from a largely academic population

to a population of students with severe multiple disabilities that may or may not include visual impairments. Some residential schools have closed. In some cases, children attend residential schools because the local public school is unable or unwilling to provide the educational supports needed for success (Huebner & Ferrell, 1989). In other cases, families have tried public schools but found them deficient and decided that residential schools do a better job at providing the necessary adaptations that support students to reach their potential (Corn, Bina, & DePriest, 1997).

Our history forms us. Residential schools in our history were liberating institutions, not institutions of oppression and suppression. As the social, political, and educational history of the country has changed, so has education of children with visual disabilities. And while many people believe that all children with visual disabilities are entitled to placement in neighborhood schools (Bassett et al., 1996; U.S. Department of Education 2000), just as many people, including many blind adults, support placement based on where individual needs can best be addressed (Huebner & Koenig, n.d.; U.S. Department of Education, 2000). As Huebner and Koenig (n.d.) state, The overriding emphasis on LRE [least restrictive environment] has put placement decisions in the foreground of debate rather than determination of: (a) each student's individual and unique needs, (b) how an individual's assessed needs can best be met, and (c) the educational setting where identified needs can be met.

The same issues raised by my colleagues Lewis Jackson and John Luckner apply to the education of students with visual disabilities: access, equity, and equality. Placement is not just an issue of providing supports, it is an issue of receiving equal access to the curriculum and to the academic and social life of the classroom. It is not just a question of having one's books and worksheets in braille, or a tactual map, or a computer with speech access software. It is also a question of the facial expressions that silently communicate expected behavior, the visual metaphors that have no reference point, the slides and videotapes and television that are truncated into auditory descriptions, the tactual models that are based on a visual representation, and the concepts that are not explained because they are assumed-not purposefully or with intent to harm, but harmful by omission nevertheless.

This failure to recognize that inclusion and access is more than print adaptation is an example of what I call "visual cultural imperialism," where vision is viewed as the standard and all other experiences are secondary to it, and where people with "normal" vision force their experiences, their perspectives, and their choices on others. Just as history is more than the experiences of white men with power in western civilizations, education is more than the experiences and opinions of sighted people. Visual cultural imperialism is equally oppressive, inherently unequal, and potentially damaging to the education and self-determination of children and adults with visual disabilities.

Still, the field of visual disabilities faces the future with unanswered questions about the efficacy of its practices. The vast majority of children have been educated in the public schools for over 40 years, yet today there are students unable to read (American Printing House for the Blind, 2002) and graduates who cannot obtain employment (Kirchner, Johnson, & Harkins, 1997). The high rate of un- and under-employment has remained fairly steady across the decades (Bassett et al., 1996), in spite of the advances brought about by the Individuals with Disabilities Education Act and the increasing use of technology. On the surface, the braille reading rate seems to show a marked decline over the years (American Printing House for the Blind, 2002; Shapiro, 1993), yet the field now serves such a wide array of children with multiple disabilities that these statistics are misleading. The explanations for the high unemployment and low reading rate are just one of many issues conflicting the field today. There are other issues, and brief introductions to some of the most pressing issues are included below. The Crumbling Research Base

The low-incidence nature of visual disability often limits the research designs that can be utilized and the conclusions that can be drawn. This has led to a research base characterized by single case studies, anecdotal reports, small and heterogeneous samples, and lack of replication. Perhaps because of these difficulties, educational research is notoriously underfunded (Corn & Ferrell, 1999; Mason, Davidson, & McNerney, 2000). Researchers available to design and carry out educational research are often limited to a small number of faculty in less than 30 universities nationwide, many of whom (particularly those in programs with only one full-time faculty member) find that their research program struggles for priority with their teaching, program coordination, recruiting, and service responsibilities. We are often left with best practices that are more philosophical than proven, more descriptive than empirical, and more antiquated than modern.

The No Child Left Behind Act (2002) requires the application of scientifically-based research to educational practice and defines it as "research that involves the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs," including research that: (i) employs systematic, empirical methods that draw on observation or experiment; (ii) involves rigorous data analyses that are adequate to test the stated hypotheses and justify the general conclusions drawn; (iii) relies on measurements or observational methods that provide reliable and valid data across evaluators and observers, across multiple measurements and observations, and across studies by the same or different investigators; (iv) is evaluated using experimental or quasiexperimental designs in which individuals, entities, programs, or activities are assigned to different conditions and with appropriate controls to evaluate the effects of the condition of interest, with a preference for random-assignment experiments, or other designs to the extent that those designs contain within-condition or across-condition controls;

(v) ensures that experimental studies are presented in sufficient detail and clarity to allow for replication or, at a minimum, offer the opportunity to build systematically on their findings; and
 (vi) has been accepted by a peer-reviewed journal or approved by a panel of independent experts through a comparably rigorous, objective, and scientific review. (20 USC 7801, Sec. 9101(37)(B))

While the research foundation is blindness and low vision can meet many of these criteria, we will have difficulty finding studies with large enough samples to give confidence to the statistical procedures, that have been subject to repeated testing, or that utilize random assignment and control groups. Many of the issues presented here can and should be addressed by a systematic program of research that incorporates qualitative and quantitative designs. That does not appear likely to happen soon, given that there are too few researchers with too little money to address too many questions. Until it is addressed, however, the research base will crumble away, bit by bit, resulting in little validation or support for the pedagogy of specialized educational practice for students with visual disability. Special Education

Early education. Families must receive support to help infants and toddlers with visual impairments learn in nonvisual ways. Psychologists estimate that over 90% of learning in infancy occurs through the visual sense (Kagan, 1971; White, 1973). "Current research on the influence of environmental experiences on a young child's brain, . . . provides empirical evidence that infants who have disabilities need early intervention" (Chen, 1999, p. 6). It seems logical to assume that infants with visual impairment have a very different early experience, simply because a major source of sensory information is interrupted or missing altogether. As Ferrell (1997) stated, Children with blindness and visual impairment learn differently, for no other reason than the fact that in most cases they cannot rely on their vision to provide information. The information they obtain through their other senses is inconsistent (things do not always make noise or produce an odor), fragmented (comes in bits and pieces), and passive (not under the child's control). It takes practice, training, and time to sort all this out. (p. v)

For years, developmental delays and gaps in conceptual development have been attributed to the impact of visual impairment. Recent research, however, suggests that visual disability itself may not play as large a role as once thought (Ferrell, 1998b; but see Hatton, Bailey, Burchinal, & Ferrell, 1997). Regardless, it seems critical that families receive the type of early intervention that can mediate children's experiences and provide new ways of learning (Chen, 1999).

Natural environments. Statutory language in the 1997 IDEA amendments defines early intervention services as services that "to the maximum extent possible, are provided in natural environments, . . . in which children without disabilities participate" (§632(4)(G)). While this language is similar in intent to the concept of least restrictive environment, many states are interpreting this language narrowly and suggesting that all early intervention services should be delivered by itinerant specialists (Vivian Correa, personal communication, February 4, 2002). While the importance of providing assistance to caregivers in their usual settings is incontrovertible, little attention has been given to the synergy that can be created by periodic visits to center-based programs when family members, infants and toddlers with disabilities, and early intervention specialists can interact and problem-solve together. The issue seems to be one of individualization—all infants and families do not require the same services at all points in time. Further, the interpretation seems to contradict the statutory requirement to consider family concerns, priorities, and resources, another tenet of early intervention. Interpreting natural environments solely as one type of environment eliminates any choices for parents and families.

Curriculum access. Curriculum access is more than placement and providing books and materials in tactual modalities. Students who are blind still miss out on demonstrations conducted visually, metaphors without experiences, and other forms of incidental learning that assume the ability to see. The problem extends to students who use print but whose vision still limits their ability to see at a distance or in detail. Tactual diagrams, while often developed with the best of intentions, often assume a cognitive mapping not usually within the experience of blind and low vision students. The emphasis on educational modifications and adaptations often ignores the more subtle interplay that occurs in the classroom.

But even in the best of classrooms, curriculum access will still be limited if books in alternative formats are not available. It is not uncommon to find blind children beginning the school year without textbooks (Dalton, 1998). Recent efforts to pass a federal law to designate a national electronic file format for publishers, such that alternative formats (braille, print, recordings) could more quickly and easily be produced, have been unsuccessful. Children with visual disabilities are entitled to their textbooks at the same time that all other children receive them.

Expanded core curriculum. There are many academic and living skills not included in the regular curriculum that are nevertheless needed by students with visual disabilities: Alternative academic skills, including communication modes; orientation and mobility; adaptive and assistive technology; leisure and recreation; social interaction skills; independent living skills; career education; and visual efficiency (Hatlen, 1996) are all critical to an individual's overall development. While these are skills that all students need, visual disability precludes their acquisition in the same way that children without visual disability learn them. Because of the emphasis on standards-based education, these skills are often underdeveloped in students with visual impairments when there is no time to work on them. This issue, too, is related to curriculum access and caseload size. Inclusion advocates often assume that adapted academic materials are all that is needed to educate students with visual impairments in the public schools. Unfortunately, such an approach ignores the many other skills that are not learned by osmosis. These skills are a natural part of the residential school experience,

where there is both time and opportunity to address them, but they are often given less status (or are missing altogether) in a child's individualized education program.

The importance of the expanded core curriculum can best be seen in the report of the Wagner et al. (1992) national transition study, where students with visual impairments spent the greatest amount of time in regular education classes, had higher graduation rates, had higher rates of post-secondary education, but had lower rates of competitive employment and higher rates of life skills training post-graduation. Students with visual impairments can be successful academically, but this may occur at the expense of other skills that facilitate integration into society.

Placement. Every student has the right to attend his or her neighborhood school. But, every student also has the right to learn. Public schools today, because of teacher shortages and misunderstandings about curriculum access, are often unable to provide the supports needed to facilitate learning by students with visual impairments. Unfortunately, there is little evidence that suggests that one setting is better than any other. The Secretary of Education made it clear that placement is the outcome of the IEP, not the starting point, and that placement can seldom be predicted: Before a disabled child can be removed from the regular classroom, the placement team . . . must consider whether the child can be educated in less restrictive settings with the use of appropriate supplementary aids and services and make a more restrictive placement only when they conclude that education in the less restrictive setting with appropriate supplementary aids and services cannot be achieved satisfactorily. . . . It is the child's IEP that forms the basis for the placement decision. . . . Some students have been inappropriately placed in the regular classroom although it has been determined that their IEPs cannot be appropriately implemented in the regular classroom even with the necessary and appropriate supplementary aids and services. . . . By contrast, there are other instances where some blind and visually impaired students have been inappropriately placed in settings other than the regular classroom, even though their IEPs could have been implemented satisfactorily in the regular classroom with the provision of appropriate supplementary aids and services. (U.S. Department of Education, 2000, pp. 36591-2)

Literacy. Much of the literature of the past decade has focused on braille literacy. Concerns have been raised that only 10-12% of legally blind students use braille as a reading medium (Schroeder, 1996; Shapiro, 1993). The concern, however, is misplaced. It is not braille literacy that is the issue, it is simply literacy. This issue is connected to issues of caseload size, teacher shortages, and the changing population of students identified with visual impairments, many of whom have disabilities in addition to blindness. Shapiro (1993) also suggests that part of the literacy issue is related to a growing reliance on technology, although technology may also be viewed as contributing to literacy. Some research suggests a link between post-school employment and braille literacy (Ryles, 1996; Schroeder, 1996), while other research suggests a relationship between hours of specialized instruction in braille and academic subject competence (Ferrell, 1993). Past discussions of the issue often deteriorate into emotional arguments, and more research is needed in order to identify both the factors that contribute to literacy and the source of statistics that seem to suggest the declining use of braille.

An equally compelling question is how literacy is taught in the 21st century. The methods utilized today to teach blind children to read are essentially the same as those used in the 1950s. But classrooms are different and still changing: The challenge facing America's schools is the empowerment of all children to function effectively in their future, a future marked increasingly with change, information growth, and evolving technologies. Technology is a powerful tool with enormous potential for paving high-speed highways from outdated educational systems to systems capable of providing learning opportunities for all, to better serve the needs of 21st century work, communications, learning, and life. (Thomas, 2003)

The National Center for Education Statistics' Early Childhood Longitudinal Study reports that 97% of kindergarten students with disabilities and 98% of first graders with disabilities use computers (Rathbun & West, 2003). Furthermore, Rathbun and West report that "children with disabilities were less likely to have access to home computers than children without disabilities" (p. x), although 87% of those who did used their home computers for educational purposes for an average of 3.5 days per week. In the classroom, children used computers most frequently to read, write, spell, learn math, and for fun. It appears that the future is here, but our teaching methodologies have not yet evolved.

Technology. Students with visual disabilities must have assistive technologies that facilitate curriculum access. Curriculum access can be addressed effectively and efficiently by assuring that students have the appropriate tools: Screen readers, screen magnification software, braille printers, personal digital assistants (PDAs) with and without braille displays and global positioning enhancements. But these tools are often expensive, and the expense cannot be distributed among several students because they are adapted to meet an individual's needs. "The hardest part of the technology puzzle has been simply to get new devices to the people who need them" (Shapiro, 1993, p. 229). Equally as hard, however, may be what Rathbun and West (2003) refer to as the "'digital divide' between those with computer access and skills and those without" (p. v). **Orientation and Mobility Services**

Orientation and mobility services should be provided early in a child's education. If typical peers can walk down the block to visit a friend's house, a blind child should be able to do the same. When typical peers walk to school with their friends instead of their parents, a blind child should be able to do the same. When typical peers drive to school or to after-school jobs, a blind teenager should be able to take public transportation or arrange a ride with others. All too often, these skills

are developed later or not at all, and they can sentence a child with visual impairment to a lifetime of dependency. Every child with a visual and/or multiple disability should at least be evaluated for orientation and mobility services.

While orientation and mobility is included in the definition of the expanded core curriculum, it is recognized by the Department of Education as essential to the education of students with visual disabilities. According to the Secretary of Education's Policy Guidance (U.S. Department of Education, 2000), orientation and mobility training "increases the likelihood that [students with visual impairments] can participate meaningfully in a variety of aspects of their schooling, including academic, nonacademic, and extracurricular activities" (p. 36586).

The 1997 IDEA amendments changed the definition of special education in the regulations to include "travel training" at 34 CFR § 300.26(a)(2)(ii):

Travel training means providing instruction, as appropriate, to children with significant cognitive disabilities, and any other children with disabilities who require this instruction, to enable them to-

- (i) Develop an awareness of the environment in which they live; and
- (ii) Learn the skills necessary to move effectively and safely from place to place within that environment (e.g., in school, in the home, at work, and in the community).

While physical education had long been a part of the definition of special education under IDEA, the 1997 amendments acknowledge the importance of travel training to the provision of a free appropriate public education (FAPE). Orientation and mobility services are specifically mentioned in the regulations as a related service provided by qualified personnel exclusively for students with visual impairments or blindness. (i) . . . to enable those students to attain systematic orientation to and safe movement within their environments in school, home, and community; and

(ii) Includes teaching students the following, as appropriate:

(A) Spatial and environmental concepts and use of information received by the senses (such as sound, temperature and vibrations) to establish, maintain, or regain orientation and line of travel (e.g., using sound at a traffic light to cross the street);

(B) To use the long cane to supplement visual travel skills or as a tool for safely negotiating the environment for students with no available travel vision;

(C) To understand and use remaining vision and distance low vision aids; and

(D) Other concepts, techniques, and tools.

(34 C.F.R. § 300.24(b)(6))

In his policy guidance, the Secretary of Education suggests a clear relationship between orientation and mobility services, participation in school, family, and community life, and employment outcomes. He stated, In some instances, blind and visually impaired individuals have felt discouraged from seeking employment opportunities because of their inability to get to the job or negotiate the work environment once on the job, or because of their fears that this will be the case. Still in other instances, some blind and visually impaired individuals have been denied access to employment opportunities because of employers' misperceptions that the individual will be unable to get around without sighted assistance. Therefore, acquisition of orientation and mobility skills, like the acquisition of other skills such as academic and social skills, is of great importance to the social and economic independence of blind and visually impaired persons. (p. 36590)

Thus, the provision of orientation and mobility services seems closely related to student and adult outcomes. Yet, even the Secretary is operating on opinion (however much we might agree) rather than scientifically-based research. The issues discussed elsewhere in this paper-the crumbling research foundation, the shortage of personnel, the subjugation of the expanded core curriculum within inclusion models-contribute to concerns about the provision of orientation and mobility services, particularly in times of budget shortfalls. The Secretary of Education (U.S. Department of Education, 2000) acknowledged that many children with visual impairments are not receiving appropriate orientation and mobility services and may not even receive an evaluation of the need for services. This problem is exacerbated by Mason, Davidson, & McNerney's (2000) assertion that 10,000 orientation and mobility specialists are needed in order to provide the level of service that would truly constitute FAPE, at a time when less than 150 individuals with orientation and mobility qualifications are being graduated yearly (see the six years of data on annual production of blindness personnel). Other Personnel Issues

Paraprofessionals. The role of paraprofessionals is to prepare materials and reinforce learning in students with visual impairments (Topor, Holbrook, & Koenig, 2000). Too often, however, paraprofessionals are being utilized as instructional stand-ins for specialized teachers. While role release may be appropriate in situations where other members of the team are prepared to take on the specialized teacher's responsibilities, Topor, Holbrook, and Koenig warn that role release should not be used to reduce the amount of specialized instructional time from a qualified teacher. While paraprofessionals may be very knowledgeable about the braille code, it does not imply skill in teaching reading and writing, particularly to children who learn non-visually. Of more concern, perhaps, is the assumption that paraprofessionals can mediate the environment and provide the necessary supports without the 12-24 months of graduate training received by specialized teachers. Too often, paraprofessionals' desires to help the student and do a good job can actually result in dependency and learned helplessness. When and how paraprofessionals are used to supplement services is critical to any measure of program quality.

Teachers. The United States produces only about 250 new educational personnel in visual disabilities every year. School districts are often unable to support students in general education because a teacher is not available to hire, or the expense of hiring a specialized teacher for one student is greater than sending that student to a specialized school. When so few new teachers are produced, teacher quality becomes less of an issue than teacher quantity: Mason, Davidson, and McNerney (2000) estimate that 10,000 new teachers and an equal number of orientation and mobility specialists are needed by 2010; at 250 a year, the shortage will not end any time soon. Over the past five years, some university programs have implemented a variety of distance methodologies to increase enrollment, but with little effect (see, for example, several years of enrollment and graduate data available elsewhere on this website). More than ten universities have closed their degree programs in visual disabilities since the 1980s (Corn, Ferrell, Spungin, & Zimmerman, 1996), and state budget shortfalls are likely to increase pressures on our teacher education programs to justify their existence.

It is this issue perhaps more than any other that illustrates the danger of a crumbling research foundation. Without a pedagogy grounded in research-based practice and without evidence that specialized methodologies result in better outcomes for students with visual disabilities, the case for specialized teachers becomes debatable. All teacher education programs face increasing scrutiny in the years ahead, and the specialized area of visual disabilities will not be immune.

Orientation and Mobility Specialists. We know little today about the number of orientation and mobility specialists providing services in the public schools. The Office of Special Education Programs requests information about the number of orientation and mobility specialists employed by the states only in relation to Part C, early intervention services for infants and toddlers. The most recent data available (U.S. Department of Education, 2001) report 457 orientation and mobility specialists in 1998 providing services to infants and toddlers nationwide. Yet, elsewhere in the report, 8,727 infants and toddlers are reported to receive vision services as part of their individualized family service plans. The numbers are staggering and raise more questions than they answer: (a) Are those 457 orientation and mobility specialists the only personnel providing vision services? (b) Do those 457 personnel provide services to older children as well? (c) What is the nature of the services they provide? (d) Can individual caseloads really comprise 19 or more children? (e) Can FAPE be guaranteed when caseloads are that large?

Orientation and mobility specialists have been recognized as part of FAPE for students with visual disabilities, yet the efficacy of their services remains more conjecture and opinion than evidence. We need more information about how orientation and mobility services are being delivered, how often, by how many personnel, and with what outcomes.

Caseload size. The National Plan for Training Personnel To Serve Children with Blindness and Low Vision (Mason, Davidson, & McNerney, 2000) recommends a caseload of 8 students for every itinerant teacher. Few teachers of students with visual disabilities can meet this ideal. In Colorado, for example, some teachers count 45 or more children on their caseload (Shepard, 1993). Problems of literacy, curriculum access, and instruction in the expanded core curriculum could be ameliorated if caseloads for itinerant teachers were more reasonable. Twenty students per teacher may be manageable in a single classroom, but travel between schools can take more time than instruction. One study found that itinerant teachers devoted about one-fourth of their time to travel between schools (Suvak, 1999). While travel time varied greatly, this suggests that a maximum of 30 hours per week are available for instruction. At a mean 2.28 hours of service per week per student (Suvak), a workable itinerant caseload may approximate only 13 students, if each student is visited only once. An increase in that number would suggest less service or less frequent service, and does not account for students who may need specialized instruction daily because they are learning to read, or students who need their classroom materials translated into another modality daily.

Spungin and Ferrell (1999) discuss the many roles that teachers of students with visual impairments must be prepared to assume. There is some evidence that the amount of individualized instruction a student receives is directly related to that student's competence in braille reading and writing, academic subjects, and orientation and mobility (Ferrell, 1994). All of this suggests that more attention should be given to how itinerant services are delivered and the amount of time devoted to specialized instruction.

School outcomes. Working-age legally blind adults, while quite successful in higher education (Wagner et al., 1992), still have a 60% unemployment rate (Kirchner, Schmeidler, & Todorov, 1999). The possibility exists that this is a byproduct of educational practice, perhaps due to inclusion, assumptions about curriculum access, and/or the lack of time to address components of the expanded core curriculum. For a population that pursues post-secondary education in far larger numbers than persons with other types of disabilities (Wagner et al.), the rate of unemployment suggests that the relationship between education and employment is a tenuous one. Some research suggests that employment is related to braille literacy skills (Ryles, 1996; Schroeder, 1996), and further study is needed to determine which factors contribute to successful post-school outcomes.

Who are Children with Visual Impairments? Almost all of the issues here relate at least in part to an understanding of

whom we are talking about. The federal Office of Special Education Programs collects an annual count of students served under the Individuals with Disabilities Education Act; it reports that 26,590 children with visual impairments and 1,845 with deafblindness (ages 6-21 years) were served in the 1999-2000 school year (U.S. Department of Education, 2001). The American Printing House for the Blind (2002), using the stricter criterion of legal blindness, reported 52,856 students in the same year (grades P-12). Kirchner and Diament (1999) discussed the discrepancies in the count of children with visual impairments and estimated that the number of children with visual impairments is closer to 93,600: 32,700 children with visual impairments; 50,100 with at least one additional disability; and 10,800 students with deafblindness. This number comprises .12% of the resident school age population in the United States, a figure much closer to the U.S. Department of Education estimate originally provided by Jones and Collins (1966). In contrast, the IDEA count comprises only .035% of the resident school age population. By the Department's own analysis, the count of children with visual impairments is an underestimate. (In the state of Colorado, for example, teachers licensed in Severe Needs, Vision serve three times more students than the Colorado Department of Education reports under IDEA. If other states have the same experience, then the true number of children with visual impairments is indeed closer to Kirchner and Diament's estimate.)

The Office of Special Education Programs (OSEP) has long recognized the inaccuracy of its count of deafblind children and has sponsored a separate count (Mason et al., 2000). It has not done so with its count of students with visual impairments, in spite of evidence that the count has steadily declined since the introduction of the category of "multiple impairments" (Ferrell, 1998a). The failure to acknowledge that the population of children with visual impairments includes a large proportion of students with additional disabilities leads to:

- Misunderstandings about the complexity of children's educational needs;
- Assumptions that the number of specialized personnel is adequate;
- Inadequate curricula for the preparation of teachers;
- Lowered priorities for federal funding of personnel preparation and research; and
- Misleading and inadequate research sampling.

Culture of Care. There is no cultural identity among blind and low vision persons analogous to that described by Professor Luckner in his deaf issues paper. There is, however, a strong belief that blindness is not cause for marginalization. Barton and Armstrong (2001) state, "The increasing struggle on the part of many disabled people and their organizations for participation, equity, and social justice in their lives is motivated by an informed recognition of the degree and stubbornness of disabling barriers within society" (p. 693). Perhaps because the origins of special education are in the curative or medical model, deeply entrenched in religious doctrine, there is a tendency among professionals to attend more to the problems associated with visual disability than to the possibilities. It is all too easy to fall into a belief system that infantilizes people with disability, even while teaching skills for independence. As Professor Jackson suggests in his severe disabilities issues paper, this culture of care-of "doing good deeds"-becomes the barrier to an inclusive society. Ultimately, . . . the relationship between professionals and disabled people is a reflection of the social structures, ideologies, and power relations that disable people with impairments. Disabled people are generating the impetus for fundamental change, but the focus for change is professional structures, policies, practices, and ideologies. . . . The challenge for professionals is that, from the experiences of disabled people, they have been part of the disablement of people with impairments. Central to a changing relationship is the changing paradigm from a medical to a social model of disability and, with this, possibilities for professionals to work for and with disabled people in confronting the barriers of institutional discrimination. However, many disabled people would agree with Mike du Toit, a South African disabled activist, that the movement does not reject the role of the professionals. What we reject is the inappropriateness of so much of the work that is being done, and the inappropriateness of their attitudes, and the complete inappropriateness of their seeking to represent us, (Coleridge 1993:77). . . the critique of professional power is pursued as a foundation for relationships in which . . . disabled people are in control rather than forced into dependency. (French & Swain, 2001, p. 751)

The field of blindness and low vision has been a leader in specialized education, inclusive practice, teacher training, technology applications, and in the struggle to develop exactly these types of relationships (Hatlen, 2000; Koestler, 1976). We are not always good at it (Omvig, 2002; Scott, 1991). In the 21st century and in spite of all of the other issues presented in this paper, this may be our biggest challenge. It may also be the foundation for solving the other issues, because Together we can do more. . . . References

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