PSYCHOEDUCATIONAL ASSESSMENT OF STUDENTS WHO HAVE VISUAL IMPAIRMENT: PERSPECTIVES OF TEACHERS OF STUDENTS WHO ARE BLIND OR WHO HAVE LOW VISION AND SCHOOL PSYCHOLOGISTS

by

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ABSTRACT

Schoolchildren who have visual impairments (B/VIs) comprise the lowest incidence population in special education. They are referred for evaluation when they fail to achieve expected levels of development relative to peers in any of several domains. A majority of students with visual impairments are educated in public schools and are served by itinerant teachers of students who have visual impairments (TSVIs). When comprehensive evaluations are needed, they are performed by school psychologists who often have limited training and experience with this population and, consequently, must collaborate with TSVIs and other specialists across a number of different issues (e.g., presence of additional exceptionalities, need for test accommodations, and interpretation of test data). The assessment literature contains recommendations for collaboration among members of multidisciplinary teams that stress the importance of consultation when planning, conducting, and interpreting the results of assessment so that these issues will be addressed appropriately.

The current study surveyed 189 TSVIs and 63 school psychologists as to their perspectives of the frequency of occurrence of specific collaborative procedures recommended in the literature, selection of the most important elements of consultation, the knowledge base of both professional groups, and their levels of satisfaction with the process and product of evaluations. Groupwise and pairwise

comparisons were analyzed using Kendall's tau-b (groups) and Kendall's tau-pairs.

Data analyses revealed significant areas of disagreement between the two professional groups on the frequency of occurrence of a number of the elements of consultation but a high level of agreement on the most important elements. The groups differed in their levels of knowledge, with TSVIs having more knowledge of characteristics of the population and school psychologists having more understanding of principles of statistical validity. The groups also differed in their levels of satisfaction, with school psychologists expressing significantly more satisfaction and TSVIs expressing more satisfaction when they worked with specialists in this field than when they worked with general practitioners.

Dedicated to the memories of my mother, Rikki Braunstein Schuster, my brother, Michael Schuster, and my father, Jack L. Schuster, who always wanted me to finish what I started. Rest in peace.

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CHAPTER 1

INTRODUCTION

In his introduction to *The Core Curriculum for Blind and Visually Impaired Students, Including Those With Additional Disabilities*, Hatlen (1996) stated, "Some years ago, a reporter asked a prominent blind woman, 'What is it that blind people would want from society?' The woman replied, 'The opportunity to be equal and the right to be different'" (¶ 1).

Hatlen (1996) then asked and explored the following question: "What did this woman mean by two remarks that seem diametrically opposite?" He stated that for many years teachers of the blind and visually impaired (B/VI) believed and acted as though the only difference between sighted and blind students was the means of access to the core curriculum to facilitate learning in the regular classroom (Hatlen, ¶ 5). Hatlen added that research has taught that students with B/VIs who are educated only in academic subjects will find themselves unfit for life beyond the classroom, unable to care for themselves or their homes, travel independently in various environments, and find and keep productive work. The field of special education for students with visual impairments now acknowledges the importance of an expanded core curriculum to address the additional needs for specific education in areas that are learned incidentally by sighted students but that must be taught through direct purposeful instruction for students who are blind or

who have low vision (Huebner, 2002; Maggiore, 2005; Prause, 2005). Associated with these educational imperatives is a concurrent need to understand the most useful assessment practices for these students.

Hatlen (1996) recommended that students with visual impairments be assessed in all areas of the expanded core curriculum, an extension of the core curriculum of basic subjects and skills taught to all students. The expanded core curriculum for students with visual impairments consists of the following: (a) compensatory or functional academic skills, including communication modes such as braille and enlarged and magnified print; (b) orientation and mobility, including advanced travel skills; (c) social interaction skills; (d) independent living skills; (e) recreation and leisure skills; (f) career education; (g) technology, including access and skills; and (h) visual efficiency skills. The design of effective instruction is predicated on assessment in all of these areas.

Criterion-referenced, blindness-specific assessments are published for many of the areas needing assessment in the expanded core curriculum. These assessments are intended to be used by specialized teachers of students who have visual impairments (TSVIs) and orientation and mobility specialists. School psychologists working with students who have visual impairments are confronted with specialized assessment needs for these students and require specialized skills in order to provide valid and reliable assessment services. For areas not covered by the assessment tools designed for TSVI and orientation and mobility use such as cognitive, academic, adaptive, and behavioral development, school psychologists

must rely on instruments developed for the sighted population. This necessity presents major challenges, particularly in the area of psychoeducational assessment. Several books, book chapters, and articles contain recommendations for school psychologists conducting these evaluations in collaboration with TSVIs (Bradley-Johnson, 1995; Bradley-Johnson & Morgan, 2002, in press; Bradley-Johnson & Sorenson, 1997; Goodman & Wittenstein, 2003; Loftin, 1997, 2005; Loftin & Bulla, 2003; Sattler & Evans, 2006).

The purpose of this study was to survey TSVIs and school psychologists as to their perceptions of the importance and frequency with which the recommended assessment procedures occur in actual practice for students who have visual impairments. In order to fully understand the issues associated with psychoeducational assessment of students who are blind or who have low vision, it is important to understand the extent of the need for specialized assessments, to understand various aspects of vision and the visual system and their potential impact on assessment, and to appreciate a number of the more common etiologies, each with its own implications for visual functioning. The first part of this review provides a brief summary of prevalence and incidence factors, the visual system, and the various etiologies involved in visual impairment. The second part addresses specific issues and challenges in assessment of students with visual impairments.

Children With Visual Impairments

Definitions

The literature contains many definitions of visual impairment, low vision, and blindness that vary in their usefulness.

Visual impairment. Visual impairment is defined as any loss of vision that cannot be corrected to within the normal range with corrective lenses. Traditional parameters typically define impairment as acuity of 20/70 or less in the better eye with correction or a visual field of 140 degrees or less in the better eye with correction. The term *visual impairment* applies to all levels of vision loss, including blindness.

Legal blindness. The legal definition of blindness was developed for the purpose of determining eligibility for government benefits. *Legal blindness* is defined as distance central visual acuity of 20/200 or less in the better eye or a visual field of 20 degrees or less, with the best correction possible with glasses or contact lenses. This definition, however, lacks utility in terms of describing visual ability in any meaningful way. Legal blindness is a clinical rather than a functional definition. Better definitions incorporate descriptions of functional limitation. Many children who qualify as "legally blind" have a great deal of residual vision, especially at near point, use print for much of their learning, and, in many cases, may validly be tested using standard materials in the conventional way (J. B. Chase, personal communication, February 6, 2001).

Low vision. Individuals with low vision typically have sufficient vision for use in daily activities and for some or all of their learning. These individuals have what is referred to as a nonsevere functional limitation, and they describe themselves as having difficulty seeing regular print, even with correction.

Blindness. Individuals who are blind have either vision loss that is total or, more commonly, is so severe as to preclude the use of vision, requiring the use of other senses in most activities of daily living and for learning. These individuals have what is referred to as a severe functional limitation, and they describe themselves as unable to see regular print, even with correction ("Statistics and Sources for Professionals," 2006).

Prevalence

In 1998, it was estimated that approximately 93,600 school-age children (birth to 21) in the United States were blind or visually impaired and were served in special education programs ("Causes of Blindness: Multiple Impairment," 2005). Of these, it was estimated that 32,000 (35%) had an isolated visual impairment, 50,100 (53%) had at least one additional impairment other than deafness, and 10,800 (12%) were deafblind. Approximately 0.5% of school-age students qualified for services as students with visual impairments. The majority (approximately 70%) of children with visual impairments is educated in mainstream or so-called inclusive environments and served by itinerant teachers of the blind or in visual impairment-specific resource rooms. The U.S. government reports 25,000 children served in federal programs age birth to 3 years classified

as visually impaired, representing 0.4% of all children served and representing 0.1% of total enrollment (National Center for Educational Statistics, 2003). Approximately 90% of school-age children with visual impairments have some degree of residual vision (Kelley, Sanspree, & Davidson, 2001).

Incidence

Students with visual impairments are among the lowest incidence of students with all disabilities. They represent 0.45% of all children with disabilities (National Center for Educational Statistics, 2003). Visual impairments occur at a rate of 12.2 per 1,000 in children under the age of 18 ("Visual Impairments," 2004). When children with B/VIs are referred for psychoeducational evaluation, it is usually because of concerns expressed by classroom teachers, TSVIs, or parents about one or more aspects of their development and learning. Because of their low incidence relative to other disabilities among school-age children, school psychologists and other assessment personnel working in general education schools have considerably less experience with this population (Bradley-Johnson, 1994; Goodman & Wittenstein, 2003).

The statistics in the preceding paragraphs are not always clear; this lack of clarity may be explained by the federal accounting practices that allow each child to be counted in only one disability category. As noted above, a large number of students with visual impairments have multiple impairments and, thus, may be primarily classified with other disabilities. Kirchner and Diament (1999) reported that the Office of Special Education Programs has over a period of many years

consistently underreported the number of students with visual impairments. Because of these issues, an accurate count of students and, therefore, an accurate prediction of personnel needs are made very difficult. This situation is a serious problem in the field. It is estimated that for the approximately 93,600 children needing service, there are only 6,700 full-time-equivalent teachers of students who have visual impairments and 1,300 orientation and mobility specialists (Kirchner & Diament). Spungin (1997) stated that since most of the children with visual impairments are served through the itinerant model, where many of the teachers travel long distances to see students who are enrolled in their neighborhood schools, the time constraints imposed by this system severely limit the amount of instruction in the expanded core curriculum that can be provided (Spungin). Itinerant teachers have vastly excessive caseloads and serve an extremely diverse population of students with a full spectrum of ability levels. They have responsibility for assisting students with the most basic of functional skills up to advanced academic courses as well as a host of nonteaching activities (Griffin-Shirley et al., 2004). The combination of the teacher shortage and the travel demands of the itinerant model of service delivery have a direct impact on the ability of teachers to perform appropriate assessments, develop individualized education programs, and deliver competent instruction.

Sight and Vision

Dictionaries typically define sight as the faculty of seeing. Vision relies on light reflected by an object (Levine & Shefner, 1991). The sense of sight, the

ability to detect objects, is dependent on the structural soundness and health of the organs of vision.

Functional vision, on the other hand, is a set of skills developed through visual experience. Visual skill qualitatively shapes internal schema of the world, facilitates independent behavior, and, along with other abilities, provides an opportunity for learning to read print and participate in other academic activities. Specifically, vision helps individuals to (a) identify attributes of objects, (b) develop concepts of space and attributes of spatial relations, and (c) integrate parts into a coherent whole or gestalt (Freedman, Feinstein, & Berger, 1988). An understanding of the functional visual abilities of each child is critically important to the design of appropriate assessments.

Anatomy of the visual system. On a simplistic level, the eye is similar to a camera. Light enters at the front and travels through the transparent portions (i.e., cornea, aqueous, lens, and vitreous) to reach the retina. Impulses are then carried along the optic nerve to the primary visual cortex in the occipital lobe of the brain and from there to other areas of the brain where perception and interpretation of visual stimuli take place. It is crucial that all personnel involved in assessment understand the particular visual disorder of the student so as to assure that the instruments selected, modifications to materials, methods of presentation of stimuli, and environmental adjustments are appropriate for the child's access to the tasks.

Etiologies of Vision Loss

The visual system is complex. Each part is vulnerable to a number of sources of disease and injury; the number of different eye pathologies is vast, with an even greater number of functional implications. For this reason, several authors have pointed out the importance of knowing the medical history of the child when preparing for the assessment of a student with a visual impairment (Bradley-Johnson, 1994; Bradley-Johnson & Morgan, in press; Loftin, 2005; Sattler & Evans, 2006). A major purpose of assessment is to discover additional disabilities. Information about the specific etiology of vision loss may provide teams with the basis for a hypothesis as to the likelihood of the child having one or more additional disabilities.

When children are congenitally visually impaired, there may be developmental failure or damage to some part or parts of the visual system in the prenatal or perinatal period. In order to determine whether students with limited vision have further disabilities in addition to their vision loss, it is useful to examine etiology along the lines of ocular (or structural) causes as compared with those involving the brain. Children with neurological etiologies are more likely to have additional disabilities (Bradley-Johnson, 1994; Loftin, 2005). This likelihood is not to say that children whose etiologies are ocular cannot have additional disabilities; in fact, they can, but the additional disabilities are likely to be coincidental with rather than related to the vision loss.

For each child being assessed, all team members should be informed as to whether the etiology of the visual impairment is either central (neurological), arising in the posterior visual pathways and the visual portion of the nervous system, or peripheral (ocular), arising in the eye, the retina, or the anterior optic pathway (Sonksen & Dale, 2002). Some ocular disorders are a part of recognized syndromes and, therefore, have a higher likelihood of additional central nervous system disorders. When considering etiologies of visual impairment and their functional implications, it is necessary for practitioners to have this critical information about a student's eye condition and developmental history prior to beginning the process of assessment (Bishop, 1996; Bradley-Johnson, 1994; Bradley-Johnson & Morgan, in press; Goodman & Wittenstein, 2003; Loftin, 1997, 2005; Sattler & Evans, 2006).

History and Current Issues

The history of psychological testing with students with B/VIs includes attempts to develop measures specifically for children who have visual impairments as well as adaptations of existing tests. These efforts include a number of tests using tactile analogs of skills sampled visually on tests for sighted individuals. A number of adaptations have been made over the years of early versions of the Binet tests (Warren, 1994). The Binet Test for Blind Pupils was developed by Irwin and Goddard in 1914 (Koestler, 2005). In 1923, the Perkins School for the Blind published the Hayes-Binet Intelligence Scale for the Blind, which was said to reveal "that the intelligence of the blind population is no different from the

sighted" ("Historical Timeline," 2005, ¶ 12).

A later Binet adaptation, the Perkins-Binet (Davis, 1980), sought to incorporate tactile performance with verbal items. This test was hailed as having great potential at first but was later found to have technical problems such as poor correlations with other tests (Gutterman, Ward, & Genshaft, 1985) that later resulted in its withdrawal from the market (J. D'Ottavio, personal communication, May 13, 2005).

The Blind Learning Aptitude Test (Newland, 1971) was a key development. Warren (1984) described Newland's goal as differentiating between product (reflecting achievement) and process (reflecting psychological operations). The Blind Learning Aptitude Test tested the "ability to discover differences, identify commonalities, and extrapolate relationships among items" (Warren, p. 195). The Blind Learning Aptitude Test correlations were high with the Wechsler Intelligence Scale for Children and Hayes-Binet, and they were somewhat lower but significant with the Stanford Achievement Test. Despite the age of the test and its norms, a 1995 study of its validity found significant correlations between scores on the Blind Learning Aptitude Test and the Wechsler Intelligence Scale for Children—Revised (Wechsler, 1974) as well as on tests of achievement, braille oral reading speed, comprehension, age, grade, and years of blindness (Baker, Koenig, & Sowell, 1995). The Blind Learning Aptitude Test is no longer widely used because of (a) its age, (b) the fact that copies of the most recent (i.e., 1990) pressing were found to have errors in the tactile materials, and (c) the fact that it is no longer

available from the publisher, University of Illinois Press (L. Savage, personal communication, February 17, 2006). Copies of older pressings may still be in use in some places.

The most recent effort to develop a cognitive test for students who have profound vision loss or who are blind is the Intelligence Test for Visually Impaired Children (Dekker, Drenth, & Zaal, 1989). This comprehensive test incorporated both verbal and tactile performance scales. However, the verbal tasks were borrowed from other tests such as the Dutch translation of the Wechsler Intelligence Scale for Children—Revised (Wechsler, 1974) and other Dutch language tests translated into English or created to represent the primary factors of intelligence described by Thurstone (Warren, 1994). Although the Intelligence Test for Visually Impaired Children is available in English, it has not been widely adopted in the United States, presumably because of the translated verbal content, high cost, and reported reluctance of the Bartimeus Center, the publisher of the test, to license the tactile components for production in this country (V. Bishop, personal communication, August 9, 2000).

Currently, there are no nationally normed tests of cognitive ability available that have been designed for and standardized on children who have B/VIs despite the many aforementioned attempts to create such tests. Efforts to develop tests that address abilities and skills that are both relevant to this population and technically adequate have been hampered by the fact that children with visual impairments who are of school age are one of the smallest segments of the disability population.

The length of time that it takes to test a sufficient number of individuals who fit within test parameters renders much of the data as well as the item content outdated by the time it can be published (J. D'Ottavio, personal communication, May 13, 2005). The market for such tests would be limited; the tests would have to be extremely expensive to permit a profit for the publisher. The fact that many individuals with visual impairments have additional comorbid disabilities further complicates the problem (Flanagan, Jackson, & Hill, 2003; Goodman & Wittenstein, 2003; Loftin, 2005). Over the years, it has become apparent that "a *major* problem in assessing students who are visually impaired or blind, however, is that nearly all tests designed for this population of students fail to meet minimum standards for technical adequacy" (Bradley-Johnson & Morgan, in press).

Psychoeducational assessment of students with significant vision loss requires that school psychologists anticipate other issues in addition to those that apply to the assessment of children with sight. These issues include (Loftin, 2005) the need to prepare for assessment by consulting with teachers of the visually impaired to obtain information about the following areas:

1. The etiology of the student's vision loss
2. The effects of the student's vision loss on learning
3. Accommodations that may be needed during assessment
4. The need to carefully consider selection of instruments and appropriate methods of administration in terms of how performance may be related to the vision loss.

Another important issue concerns information about differences in development between children with and without vision (Warren, 1994). Unfortunately, little of this information has found its way into the general literature in psychology and, more importantly, the literature available to psychologists in training (Bradley-Johnson, 1994; Bradley-Johnson & Morgan, in press; Goodman & Wittenstein, 2003; Loftin, 2005; Sattler & Evans, 2006). Consequently, concern in the professional blindness field regarding appropriate methods of test selection and administration, conclusions drawn from assessment results, and programming decisions and placements based on those conclusions is widespread.

Assessment Recommendations

Each major author consulted for this literature review (Bradley-Johnson, 1994; Bradley-Johnson & Morgan, in press; Goodman & Wittenstein, 2003; Loftin, 1997, 2005; Loftin & Bulla, 2003; Russo, 2003) recommended that it is appropriate to administer portions of tests that use visual stimuli for students with low vision who use vision for some or all of their learning. However, they universally recommended that the data *not* be used to generate total or composite scores. Specifically, they suggested that visual items "should be used as a way of observing the process of problem solving rather than to obtain an actual IQ score" (Loftin & Bulla, n.p.). In most cases, the chief reason for administering visual portions of tests is "to demonstrate the extent to which performance declines when excessive demands are made on a faulty visual system" (J. R. Russo, personal communication, August 13, 1998). The performance of some will decline sharply,

whereas the performance of others will decline very little. Chase (1986) described specific limit-testing procedures for individuals with low vision. She pointed out that there might be difficulty distinguishing numerical details such as signs of operation, the cent sign, and exponents:

> If the psychologist notes difficulty, the item may be administered a second time with the question read to the youngster. As the repetition gives the subject an advantage, the change must be included in the written report. If it is observed that the child is better able to function under altered conditions, this gives school personnel important data about planning. (p. 62)

Chase also described limit-testing methods for timed tasks:

> Time limits are frequently the sole element contributing to low scaled scores on Wechsler tests. For the Coding subtest, where considerable refocusing is required, I always note where the child is at the two-minute time limit (without saying "Stop!" as directed) and let the child continue to the end. I can compare the number of completed figures for each minute of administration without giving the subject any clue that speedier behavior was desired. In interpreting the subtest, I can evaluate how long it took the child to memorize the key. The analysis also yields important information regarding use of a pencil and writing skills. I follow the same principle for Block Design. (p. 62)

Each author suggested that the psychologist's qualitative description of the child's visual functioning during the test session may contribute to the team's appraisal of the potential usefulness of the many types of accommodations and modifications available for the effective use of residual vision. Loftin (2005) recommended that school psychologists consider the following additional issues:

1. The need to interpret results of assessment appropriately in light of the effects of vision loss on development and learning

2. The need to use assessment results to identify additional disabilities and psychological conditions in students with visual impairments
3. The need to develop recommendations that will be helpful for students with vision loss, including those with additional disabilities.

For blind children, in the absence of any readily available "performance-type" test, there is currently no practical way to assess nonverbal intelligence. Some research has reported on the results of a study with blind adults using the Adapted Kohs Block Design Test, employing texture rather than color, as being important in vocational evaluation, since many employed blind adults are working in fields where they employ haptic skills (Reid, 2002). Despite the age of the test and its norms (and the fact that the scores, therefore, are inflated), the Blind Learning Aptitude Test (Newland, 1971) is sometimes employed as a way of observing the blind child's approach to tactile problem solving. It is necessary, therefore, to informally observe the blind child's practical applications of this construct in the use of tactile educational materials, mobility, and activities of daily living (V. Bishop, personal communication, August 12, 2000).

Key Developmental Characteristics

Bishop (1996) stated:

> Since vision, of all the senses, provides the most information to the brain, it is considered the primary sense. Even the combined senses of hearing, touch, taste, and smell do not provide the rich variety of information that vision does. If the sense of vision is impaired or lost, it is difficult to compensate for that reduction in information through the other senses. (p. 4)

Although there is some research comparing the development of children with B/VIs with that of sighted children across all domains of functioning (Warren, 1984), much of this literature was beyond the scope of this dissertation. However, the efforts made to highlight some of these differences have undoubtedly contributed to practices fostering optimal development in children who must rely on senses other than vision to experience themselves, others, and the larger environment. Briefly stated, without appropriate early intervention, congenital blindness or severe to profound low vision can be expected to result in significant differences in developmental trajectories in the areas of motor development; cognitive development; language development; emotional, behavioral, and social development; and self-help skills.

Assessment of Students With Visual Impairments

There are many reasons for referring a child with a known visual impairment for psychoeducational assessment (Bradley-Johnson, 1994; Goodman & Wittenstein, 2003; Loftin, 2005). These reasons include the following:

1. Establishment of a baseline of functioning in all domains, including cognitive strengths and weaknesses, and academic achievement at the time of classification
2. Determination of the presence of additional disabilities: an estimated 50% to 65% of those with congenital etiologies have additional disabilities (Bradley-Johnson & Morgan, in press; "Causes of Blindness: Multiple Impairment," 2005; Corn, Hatlen, Huebner,

Ryan, & Siller, 1995; Goodman, 2003; Hatlen, 1996; Kirchner & Diament, 1999); an estimated 75% of visual impairments involve anomalies of the central nervous system; and only 25% have their origins in disorders that are strictly ocular (Loftin, 2005)

3. Selection of interventions to maximize development across all domains
4. Selection of learning media.

Parents of and professionals who work with children with B/VIs are often skeptical about the advisability of submitting these children to psychoeducational evaluation. There are concerns about test selection, accommodations, modifications to administration procedures, and data interpretation, with sometimes potentially serious consequences. Errors that occur often in such evaluations and are observed by school psychologists and teachers of the visually impaired have included the following (Loftin, 2005):

1. Inappropriate reporting of scores on timed visual-spatial tasks, including reporting of composites and total scores, despite large discrepancies between those timed visual-spatial scores and verbal scores, resulting in underestimation of abilities of students and inappropriate placements
2. Assumption that only verbal portions of tests should be given to students with low vision, even to those who use their vision for a majority of their learning. Despite visual impairment, many students

have excellent functional use of their vision; much useful information can be obtained by administering those subtests. Some children with visual impairments have better-developed visual skills than they do verbal skills and, in fact, may receive higher scores on those subtests.

3. Assumptions that test results achieved in the early years are stable and more highly predictive of future achievement rather than using them to draft blueprints for remedial interventions. This practice results in lowered expectations, depriving students of educational opportunities.

4. Attribution of *all* learning and behavior problems to the vision loss, resulting in failure to identify comorbidities that require and benefit from additional interventions (e.g., learning and intellectual disabilities, emotional and behavioral disorders, and speech and language disorders)

5. Failure to appropriately attribute *any* functional problems to the vision loss, resulting in inaccurate assumptions of additional disabilities. The likelihood is that some problems may result from interactions between the vision loss and other concerns. In some cases, it may not be possible to "tease out" all the factors contributing to a particular functional difficulty.

Concomitant Exceptionalities Found in Students
Who Have Blindness and Visual Impairments

Loftin (2005) outlined cautions for identifying additional eligibilities in children with low vision and blindness. Problems are seen with the overidentification of some disabilities and the underidentification of other disabilities that are comorbid with vision loss. These errors occur because of a lack of familiarity with developmental characteristics of B/VI children. Two examples cited by Loftin of overidentification are (a) diagnosing autism in congenitally blind children because of the presence of some stereotypical movements and self-stimulating behaviors when other essential characteristics of the diagnosis are absent and (b) diagnosing a learning disability in a student who is experiencing progressive vision loss and is in the process of changing from print to braille as a reading medium. Examples of underidentification include (a) failure to recognize giftedness when procedures for admission to these programs rely on tests of visual and spatial abilities and (b) failure to diagnose learning disabilities due to reliance on discrepancy formulas when cognitive assessments are likely underestimates of ability in this population (Loftin). Similar concerns are seen in the processes used to identify visually impaired students with learning disabilities (Erin & Koenig, 1997). In each of these areas of exceptionality, it is possible to make an inaccurate diagnosis or, conversely, fail to make a diagnosis because of the inherent problems associated with standardized instruments not taking into account the confounding visual impairment variables. Prevention of these errors is critically important. Toward that end, the TSVI must be directly involved in the process. The TSVI

"plays an important collaborative role with other members of the student's assessment team" (Heinze, 2000, p. 29). Heinze went on to emphasize that high quality individual assessments require the participation of the TSVI at every point in the process of comprehensive assessment.

Best Practices for Assessment of Children With Visual Impairments

The National Association of State Directors of Special Education published formal guidelines for the psychoeducational assessment of students with visual impairments (see Appendix A) (Pugh & Erin, 1999). For school psychologists, the most salient recommendation contained in this document stated the following:

> Individuals involved in administering assessments to students who are visually impaired must be knowledgeable about the effects of a visual impairment on learning, *should work closely with personnel who are proficient in the student's reading and writing medium* [italics added] (braille, large print, or print with low vision devices), should assure appropriate and meaningful testing, and should report student results in accurate and useful ways. (Pugh & Erin, p. 54)

Schoolchildren are referred for individual psychoeducational evaluation when teachers or parents become concerned about development, learning, or behavior in school or home environments. These concerns may arise because of observations that suggest that a child is struggling as compared with peers or because of low scores relative to peers on classroom tests or standardized group assessments. After teachers have tried alternative approaches to instruction, they may discuss their concerns with parents and suggest testing to determine whether a student may have a disability affecting education that requires specialized

instruction. In the case of students with visual impairments, it is already known that the student has such a disability. If additional disabilities are not major and, therefore, obvious, concerns may arise when students are not making expected gains in academic, adaptive, and social skills. Purposes for assessment include diagnosing student problems, identifying student needs, documenting progress, and gathering data for research (Bradley-Johnson, 1994; Bradley-Johnson & Morgan, in press).

In addition, for the child with B/VIs, the selection of appropriate learning media for reading and writing is critical. Ultimately, the decisions made concerning learning media should allow individuals to acquire, process, and communicate information with optimal efficiency. The school psychologist can contribute to the decision-making process by making qualitative interpretations of the student's performance on visual portions of tests. For example, a student who cannot identify what is missing from a picture (e.g., the Wechsler Intelligence Scale for Children-Fourth Edition picture completion subtest [Wechsler, 2003]) but who also cannot correctly identify the picture may have insufficient vision for reading print. The critical nationwide shortage of teachers impacts the area of braille literacy, particularly for this last group whose needs for braille may be perceived as less than the needs of the totally blind because of the large caseloads of itinerant teachers (Koenig & Holbrook, 2000).

Selection and Use of Test Instruments

All of the authors cited above have recommended that the verbal portions of any of the major intelligence tests be used in assessments of students with visual impairments. They have also suggested that visual portions of tests may be used with students with low vision by using large print versions supplied by test publishers or by publishers of adapted test materials such as the American Printing House for the Blind or by using regular print with magnification. Students who are or will be readers of braille can be assessed using tactile stimuli that can be obtained from sources like the American Printing House for the Blind or made by collaboration between school psychologists and TSVIs to assure that the tactile stimuli conform to the intent of the items in the test and neither increase nor decrease the intended cognitive demand of the items.

Legal and Ethical Requirements for Nondiscriminatory Evaluation

Another important issue to consider is the expectation of careful selection of assessment instruments that conform to legal and ethical guidelines. Current legal requirements and ethical guidelines used by school psychologists mandate the use of appropriate measures with established reliability and validity for the purposes for which they are used. For example, the Individuals with Disabilities Education Improvement Act of 2004, Sections 614(b)(2) and 614(b)(3) (2004) require that assessments used in the evaluation of children with disabilities "use technically sound instruments that may assess the relative contribution of cognitive and

behavioral factors, in addition to physical or developmental factors" (Individuals with Disabilities Education Improvement Act of 2004, 614(b)(2)).

The Ethical Principles of Psychologists and Code of Conduct (2002) of the American Psychological Association stated:

> Psychologists use assessment instruments whose validity and reliability have been established for use with members of the population tested. When such validity or reliability has not been established, psychologists describe the strengths and limitations of test results and interpretation. (Section 9.02(b))

Similarly, the "Professional Conduct Manual: Principles for Professional Ethics" (2000) of the National Association of School Psychologists stated:

> Due consideration is given to . . . individual differences. . . . They select and use appropriate assessment . . . procedures, techniques, and strategies. Decision-making related to assessment and subsequent interventions is primarily data-based. (Section IV C.1)

These legal requirements and ethical guidelines imply that results of evaluations using instruments that have been designed for and standardized on the sighted population be interpreted with due sensitivity and professional knowledge. In order to make those interpretations properly, it is important to understand key points about etiological differences and the development of children with vision loss discussed previously.

Collaborative Assessment

The Individuals with Disabilities Education Improvement Act of 2004 requires that multidisciplinary teams assess students in order to evaluate all aspects of a student's functioning in a nondiscriminatory manner. In recognition of the fact

that assessment of the B/VI student often requires expertise in multiple areas, the American Foundation for the Blind published "Collaborative Assessment: Working With Students Who Are Blind or Visually Impaired, Including Those With Additional Disabilities" (Goodman & Wittenstein, 2003). This text sets forth a model of assessment in which all members of an assessment team would be trained with both general information regarding the development of children with visual impairments and information specific to the child, his or her vision disorder, and the developmental implications of that disorder. The book provides each team member (e.g., school psychologist, parent(s), TSVI, certified low vision therapist, orientation and mobility specialist, and speech-language pathologist) essential information with regard to specific effects of visual impairments on the development within each domain of functioning.

Ancillary examiner. In addition to those team members addressed by the Goodman and Wittenstein (2003) text, Jaffe, Evans, and Henderson (in press) stated that any examiner using braille stimuli should either know braille or use the services of a qualified ancillary examiner who does know braille. The ancillary examiner's role is twofold: (a) to assure that the student is reading on the right place on the page and (b) when written output is required to signal the examiner as to whether or not braille responses are correct so the examiner knows when a ceiling has been reached. The ancillary examiner should also keep a written record of the specific braille errors so that they can be written on the protocol later. This person can help in analysis of errors for interpretive purposes. An appropriate

person to select as an ancillary examiner would be a credentialed TSVI who is unrelated to the student. The examiner should discuss with this person the need to maintain confidentiality and the need to refrain from commenting on responses or in any way signaling the student as to whether his or her responses are adequate (Jaffe et al.).

In summary, each author cited in this literature review recommended that one or more of the following collaborative procedures be followed in the assessment of students with visual impairments:

1. School psychologists should familiarize themselves with the medical and developmental history of the child as well as with the results of the functional vision assessment and learning media assessment provided by the TSVI.
2. TSVIs and school psychologists should clarify the referral questions.
3. School psychologists should observe the student in a variety of settings.
4. School psychologists should interview the classroom teacher(s), TSVIs, and parents.
5. Screening instruments of social and emotional functioning should be used to identify problem areas that may require intervention.
6. Because a visual impairment may affect the ability of individuals to function independently, adaptive measures should be considered.

7. School psychologists and TSVIs should examine test stimuli to determine if adaptations are needed. Adaptations should conform to the intent of the items and neither increase nor decrease the cognitive demands.
8. TSVIs and school psychologists should consult together about any adjustments to the testing environment that are needed (e.g., lighting and furniture arrangement relative to light sources).
9. School psychologists and TSVIs should discuss the student's performance in terms of effects of the vision loss on the student's functioning.
10. Scores on verbal subtests should be interpreted with caution because many of the items sample concepts are learned incidentally through sight.
11. Performance on visual-spatial subtests should be administered to students who use their vision for much or all of their learning, but the results should be interpreted qualitatively for information on the effects of vision loss on the student's ability to function with visual materials and not for computation of full scale, composite, or other total scores.
12. The services of an ancillary examiner should be used when tests with braille stimuli or requiring interpretation of brailled responses are administered.

13. Teams should make a good-faith effort to reach consensus on the presence or absence of additional exceptionalities as well as on recommendations for programming to enhance the child's progress in all areas of both the general and expanded core curricula.

A thorough review of the relevant literature failed to yield any studies indicating the extent to which assessment personnel (i.e., school psychologists, TSVIs, and other team members) (a) are cognizant of the best practice literature, (b) are following the guidelines for collaboration among team members set forth in the literature, and (c) are satisfied with the process and outcomes of consultation. Two studies (Bauman & Kropf, 1979; Miller & Skillman, 2003) addressed the question of the frequency with which various cognitive measures are selected for use with this population and the level of satisfaction reported by the users. Both studies found little consensus about the best measures to use and that the Wechsler scales were chosen most frequently.

It is known that school psychologists are educated in the cognitive, adaptive, psychological, and social development of children, administration and interpretation of children's performance on standardized norm-referenced tests, and consultation. What is not known is the extent to which school psychologists are offered or required to take courses in the development and assessment of students with low-incidence disabilities such as visual impairments. Although TSVIs have a great deal of information on the development of students with visual impairments and in the administration of criterion-referenced, blindness-specific instruments,

what is not known is the extent to which they are offered or required to take courses in test and measurement theory and in the administration of standardized, norm-referenced instruments such as achievement tests used for determining learning disabilities.

It is clear from the research cited that collaboration between teachers of students with visual impairments and school psychologists requires that each develop a greater knowledge base and skill set than is generally required for the usual performance of their jobs as teachers and school psychologists. School psychologists need to know more about visual impairment than they typically learn in their graduate school programs, and TSVIs need to know more about the demands of standardized assessment than they may already know. First, both TSVIs and school psychologists need to collaborate with each other about the purposes of the assessment; clarify the referral questions; determine appropriate instruments or parts of instruments; and determine the need for adapted materials, methods of presentation, and test environments. Second, both TSVIs and school psychologists need to communicate with each other about observations of behavior and approaches to tasks. Finally, they need to come to a common understanding of the interpretation of the results of the assessment and to make meaningful recommendations for future programming.

Purpose of the Study

The purpose of this study was to determine the extent to which TSVIs and school psychologists report that they value and follow the collaborative assessment

practices recommended in the literature. The study focused specifically on the consultation dyad between TSVIs and school psychologists. Study participants were solicited from the membership rolls of the Association for the Education and Rehabilitation of the Blind and Visually Impaired (AER), an international organization of more than 4,000 professionals working in all areas of the field serving both children and adults. Each teacher respondent was asked to provide a parallel version of the survey to one psychologist with whom he or she currently works. Both TSVIs and school psychologists were surveyed as to their perceptions of the frequency with which consultation practices recommended in the literature occur, their levels of agreement across a range of professional assessment practices, and their general level of satisfaction with the process and outcome of consultation.

Research Questions

In addition to demographic information, the following research questions were addressed:

1a. What are the reasons given when B/VI students are referred for psychoeducational assessment?

1b. When learning disabilities are suspected in B/VI students, who administers the standardized test of academic achievement?

2a. How do teachers and school psychologists perceive their own and each other's adherence to the best practices for assessment as described in the published literature?

2b. Which of the components of the consultation process do the participants consider to be the most important?

2c. What is the state of knowledge of teachers and school psychologists concerning best practices in assessment of children in this population?

2d. How satisfied are teachers and school psychologists with the experience of collaborating with one another?

3. To what extent are teachers of students who have visual impairments participating in training (both pre-service and in-service) in test and measurement theory, administration of standardized norm-referenced instruments, and consultation?

4. To what extent are school psychologists participating in training (both pre-service and in-service) in the assessment of students with low-incidence disabilities, including visual impairment?

5. What do TSVIs and school psychologists believe are their needs for further training relating to assessment issues for children who have visual impairments?

CHAPTER 2

METHODS

This study's primary source of information relied on survey-based responses from TSVIs and school psychologists serving children who have visual impairments. Two versions of the survey were developed: (a) for TSVIs and (b) for school psychologists. A survey packet was initially sent to members of the AER International and specifically to members of Divisions 10 (Education Curriculum) and 16 (Itinerant Teachers) who are TSVIs. They were also instructed to give a second packet provided in the mailing to a school psychologist with whom they had worked on at least one evaluation.

Participants

The initial subject pool consisted of 579 members of Divisions 10 and 16 of AER and an approximately equal number of school psychologists with whom those TSVIs have worked. AER Division 10 (Educational Curriculum) consisted of 217 members, some of whom were TSVIs. Division 16 (Itinerant Personnel) consisted of 465 members, who were primarily itinerant TSVIs. Some members of AER belonged to both Division 10 and Division 16. The mailing lists were cross-matched prior to sending out the questionnaires so that each person would receive only one packet. The packets included two versions of the survey, cover letters

(see Appendix B) explaining the purpose and process of the survey, two preaddressed business reply envelopes, and two individually wrapped herbal tea bags.

Design

The primary method of investigation in this study used two parallel versions of a survey that was designed as outlined by Dillman (2000) and Patten (2001). Both authors recommended similar procedures for sample selection, construction of the questionnaires, incentives for participation, and secondary reminders to nonrespondents (Dillman; Patten). Surveys were sent to TSVIs and, through them, to school psychologists with whom they have worked. TSVIs and school psychologists responded to questions on the frequency of use of a number of consultative procedures in preparation for and execution of psychoeducational evaluations of students with B/VIs, their levels of agreement with a set of statements, and their levels of satisfaction with both the process and the product of the evaluations. In addition, comments made by respondents were reported and discussed.

Instrument

The surveys requested demographic information regarding setting, level of training, years of experience, and information concerning the reasons for which the students are referred for psychoeducational assessment (Dillman, 2000; Patten, 2001). The surveys also asked teachers and school psychologists to rate (on a

Likert-type scale) the frequency with which best practice procedures recommended in the literature are incorporated into evaluations of children with B/VIs. Both teachers and school psychologists were asked to respond as to their levels of agreement or disagreement with a set of hypothetical statements describing a variety of assessment practices and to comment about their general satisfaction with the experience of collaborating with each other (Evans, 2006a, 2006b).

After the initial questionnaires were developed, they were submitted to four recognized scholars in the blindness field who reviewed them: (a) Amato, Dominican College; (b) Bradley-Johnson, Central Michigan University; (c) Erin, University of Arizona; and (d) Dignan, Texas School for the Blind and Visually Impaired. These scholars received a copy of the questionnaire and a cover letter (see Appendix B) explaining the study and requesting their review of the survey through electronic mail; they were also informed that their responses would be used to help develop the final questionnaire to be used for this study. They were asked to identify (a) questions that might be ambiguous, (b) additions and edits that needed to be made for clarity, (c) any additions needed to expand the knowledge base, (d) any deletions that needed to be made, and (e) general suggestions for content and design improvement. In addition to their expert review, the print version of the teacher survey was examined by a TSVI who has low vision, and the accessible electronic version of the teacher survey was examined by a school psychologist who is totally blind. The final survey was developed from suggestions provided by all of these reviewers. A planned pilot study of the survey was not

performed because of time constraints leading up to the end of the school year, after which many of the intended participants would no longer be available.

Procedures

The AER International office was contacted with a request for permission to access membership rolls for the purpose of this study. Questionnaires were sent to all members of AER Divisions 10 and 16. Individuals who are members of both divisions were accounted for to eliminate sending duplicate surveys. Each envelope sent to TSVIs contained two surveys: (a) one marked TSVI Survey and (b) one marked School Psychologist Survey. The TSVIs were asked to give the second survey to a school psychologist with whom that person had worked. Each survey was attached to a separate self-addressed return envelope so that the respondents would be able to reply independent of one another and be assured that their answers would be confidential. An explanation of the study was attached to each survey booklet with a statement that completion and return of the survey would constitute consent for participation.

Mailings for this study were designed to conform to the tailored design method (Dillman, 2000). Each mailer contained a cover letter, instructions for completing the questionnaire, and a self-addressed business reply envelope for return. The surveys were printed with numbers keyed to the mailing list to facilitate checking off names when questionnaires were returned. The mailers also contained a small gift (a wrapped herbal tea bag) as a token of appreciation for completing the survey. Responses were coded and entered into a computer database

for summary and comparison.

A postcard was composed reminding survey recipients of the study and the survey they received, thanking those who had already completed and returned the questionnaire, and encouraging those who had not to do so promptly. These postcards were mailed several weeks after the original mailing to those in the original sample. Because some AER members have visual impairments, the instruction letter included an invitation to write to the investigator to request an accessible electronic copy of the survey by e-mail to use with a speech-equipped computer or other preferred electronic accessibility device. Participants who requested the accessible version completed it and returned it by e-mail.

Because AER was not able to sort the membership database by specific occupation to more accurately target the intended sample, the initial rate of return was smaller than had been anticipated. Additional participants were recruited from a sample of convenience, obtained at the 2006 International Conference of AER at Snowbird, Utah, July 14-19, 2006. An additional 67 teacher participants represented those individuals who are members of AER but who are not members of Divisions 10 and 16. The study closed on July 31, 2006.

Data Analysis

Data were coded and prepared for a statistical analysis software program. To ensure accuracy, all the surveys were double-checked against the database. Data gathered for this study were descriptive in nature. Chi-square, a nonparametric test of statistical significance, was used for analysis of dichotomous and nominal

demographic data. Chi-square is typically used to determine whether or not two samples are significantly different from one another (Connor-Linton, 2003). A variety of calculations were used to analyze the survey data, including percentages, means, medians, frequency counts, and correlations. Descriptive analysis was conducted using Kendall's tau-b for groups and tau-pairs for matched pairs. The tau is a rank correlation coefficient used to measure the correspondence between groups where data are ordinal. The coefficient has a range of values of –1 to 1, with 1 representing *perfect agreement* and –1 representing *perfect disagreement*. If the number is large in the positive direction, the significance of agreement is higher; if the number is large in the negative direction, the significance of disagreement is greater. This statistic is recommended more highly than *t* tests for analysis of Likert-type items (Clason & Dormody, 1994; Kendall, 1948).

Group comparisons were made between practices recommended in the literature and those that TSVIs and school psychologists reported as to frequency of occurrence. Comparisons were also made between the groups as to which five of those practices they considered to be the most important. In addition, frequency and importance comparisons were made between matched pairs of respondents. Differences between response patterns of the groups at large and between matched pairs were analyzed. It was important to analyze these data from both groupwise and pairwise perspectives for two reasons: (a) TSVIs who work in itinerant programs usually work with multiple school psychologists, and (b) only 28.0% of the TSVI respondents gained the participation of specific school psychologists with

whom they worked. Responses of both groups on the research questions and on their level of satisfaction with both the process and the product of the evaluations were analyzed. To assess the knowledge base of participants, comparisons were also made between the perspectives of both groups as to their levels of agreement and disagreement with a set of hypothetical statements. In addition, specific comments by respondents were summarized and discussed. Common themes for both teachers of students who have visual impairments and school psychologists were identified.

Demographic variables of interest were also summarized and reported, including location of primary workplace; educational levels and years of experience of respondents, including preparation in assessment for TSVIs; and training opportunities, including visual impairments for school psychologists, types of settings in which respondents work, number of years of experience in respondents' fields, and functional ability levels and age levels of students with whom respondents work.

CHAPTER 3

RESULTS

The first section of this chapter summarizes demographic characteristics of the two groups of survey respondents: (a) teachers of students who have visual impairments and (b) school psychologists. The second section presents results obtained from the two versions (teachers and school psychologists) of the survey and is organized by each research question.

Survey Respondents: Teachers of Students Who Have Blindness and Visual Impairments

Five hundred seventy-nine surveys (Evans, 2006b) were initially mailed to identified members of Division 10 (Education Curriculum) and Division 16 (Itinerant Personnel) of the AER. Fifty-two respondents opted out by e-mail messages or mail, leaving 527 possible TSVI respondents. One hundred eighteen surveys were returned from this group, representing an initial return rate of 22.4%. A review of the initial mailing list and feedback from a number of the respondents revealed that those divisions included many people who did not currently serve as teachers but who continued to maintain their AER memberships (e.g., people currently practicing as orientation and mobility specialists; program administrators in schools for the blind, public schools, and state agencies; university faculty involved in personnel preparation for the field; and retirees).

A second source of the teacher respondents included a number of people who read about the survey on the AER listserv and other blindness professional listservs to which the message was propagated by readers of the AER list. Several individuals requested a copy of the survey, which was sent as an attachment to electronic mail, yielding surveys completed by 4 teachers and 8 school psychologists. A third sample of 67 teachers was drawn from attendees at the biennial international conference of AER held at Snowbird, Utah, July 14-19, 2006. Most of these individuals stated they had not received the survey by mail; these individuals represented teachers who are members of AER but who are not members of either Division 10 or Division 16. These three sources yielded 189 surveys completed by teachers of students who have visual impairments. The final return rate for TSVIs was 35.8%. School psychologists who were dependent upon TSVIs to receive questionnaires returned 63 surveys for a final return rate of 12.0%. The number of participants (TSVIs and school psychologists) was 252.

Initial analysis of all three teacher samples across all demographic factors (including geographic location, years of experience, highest degree attained, title of assessment personnel, population served, setting, university and in-service training in test and measurement theory, standardized assessment, and multidisciplinary consultation; and usual administrator of standardized academic tests, state regulations for cognitive assessment, and reasons for referral) indicated no significant differences among the three samples, with the exception of geographic location and setting (schools for the blind or public schools). Individuals from the

western states and provinces (District 1) represented a significantly higher proportion of the conference sample, which is consistent with the location of the conference. In addition, a greater number of teachers from schools for the blind were in the conference sample than in the mail sample. Three more original print surveys were returned by mail following the conference prior to completion of data analysis and, therefore, were included. Thus, a combined total of 189 teacher respondent surveys were included in the data analysis.

Survey Respondents: School Psychologists

Sixty-three school psychologists responded to the survey (Evans, 2006a). Participation was solicited through teachers who had received packets containing both versions of the survey. Of those school psychologists responding, 53 were part of a pair matched with teachers of students who have visual impairments. Three school psychologists independently requested copies of the survey by e-mail as a result of a notice that was posted on the professional listserv of the National Association of School Psychologists. Seven school psychologists completed and returned mail surveys that had been given to them by teachers who did not themselves return their teacher surveys.

Participant Demographics

Setting and Location

Teachers. The majority (80.6%) of teachers responding to the survey reported working in public schools in itinerant programs. The largest number

(37.0%) came from District 1 (western United States and Canadian provinces) (see Figure 1).

School psychologists. As a consequence of the research design and the means used to disseminate the survey, the geographical distribution of the school psychologists was virtually identical to that of teachers. A minority of the school psychologists (19.4%) reported practicing in specialized programs at schools for the blind; the majority (79.4%) reported working in public schools. These figures are consistent with data that indicate the majority of B/VI students (an estimated 70.0%) is enrolled in public schools.

Education

Teachers. A substantial majority (85.1%) of teachers reported their highest degree attained as master's or educational specialist. The doctorate was attained by 2.1% of the TSVIs.

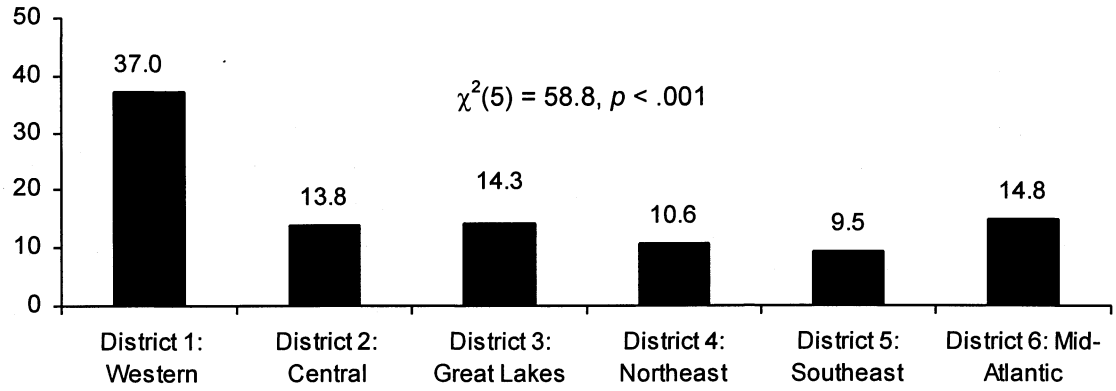

Figure 1. Percentage of teachers of students who have visual impairments (TSVIs) (n = 189) by the Association for the Education and Rehabilitation of the Blind and Visually Impaired district (U.S. states and Canadian provinces).

School psychologists. The highest degree attained by school psychologists was master's at 43.5%, educational specialist at 21.0%, and doctorate at 35.5%. Education data for both groups are summarized in Table 1.

Years of Experience

Teachers. The largest number of teachers (38.6%) reported having 20 or more years of experience as teachers of students who have visual impairments.

School psychologists. Unlike the teachers, the school psychologists' years of experience were more evenly distributed across the spectrum. Data on experience for both groups are summarized in Table 2.

Assessment Personnel

Teachers. The majority of teachers (91.5%) reported working with school psychologists rather than educational diagnosticians to assess the needs of their students. The majority of teachers (83.3%) reported working with general school psychology practitioners; only 14.5% reported working with school psychologists who specialize in assessment of students who have visual impairments. These figures are consistent with the estimated 70.0% majority of students who have visual impairments who are enrolled in public schools and served by itinerant teachers and school psychologists assigned to those schools.

School psychologists. The majority of those responsible for cognitive assessment (88.9%) reported their title as school psychologist; a much smaller number (6.3%) reported that they are educational diagnosticians or other (4.8%)

Table 1

Highest Degree Earned

	Bachelor's		Master's		Education specialist		Doctorate	
	n	%	*n*	%	*n*	%	n	%
Teachers of B/VI	24	12.8	153	81.4	7	3.7	4	2.1
School psychologists	0	00.0	27	43.5	13	21.0	22	35.5
Total	24	9.5	180	71.4	20	7.9	26	10.3

Table 2

Years of Experience

	< 1		1 to 5		6 to 10		11 to 15		16 to 20		20+	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
Teachers of B/VI	1	0.5	31	16.4	30	15.9	28	14.8	26	13.8	73	38.0
School psychologists	6	9.5	14	22.2	12	19.0	8	12.7	8	12.7	15	23.8
Total	7	2.7	45	17.8	42	16.6	36	14.3	34	13.5	88	34.9

(e.g., resource teachers or special education consultants). School psychologists were identified as either general practitioners or specialists in the assessment of students who have visual impairments by the teachers. The majority of school psychologists who were identified as specialists worked in schools for the blind.

Populations Served

Teachers. The majority of teachers reported working with multiple age groups and ability levels in multiple settings ranging from prekindergarten through all elementary and secondary grades, including academically capable students, those receiving resource services, and those with severe multiple disabilities in self-contained settings. This finding is consistent with the itinerant model of service delivery where teachers travel from school to school throughout the day working with a variety of students.

School psychologists. In a pattern similar to that of teachers, the majority of school psychologists (80.6%) reported serving students of all age levels (elementary and secondary) and abilities. This finding suggests that in many localities school psychologists have responsibility for providing services in multiple schools.

Research Questions

Group Comparisons

Research Question 1a. What are the reasons given when B/VI students are referred for psychoeducational assessment? Research Question 1b. When learning

disabilities are suspected in B/VI students, who administers the standardized test of academic achievement? On the two general questions concerning assessment, teachers and school psychologists were in agreement.

Standardized tests of academic achievement. Both groups reported that the person who usually administers these tests is the TSVI. Of teachers, 92.1% had taken some sort of training in the administration of standardized tests either during their university preparation, or by in-service training, or both.

Both groups had similar distributions across reasons for referral. The reason for referral occurring with the highest frequency was to determine the level of intellectual functioning. Referrals for giftedness occurred with the lowest frequency (see Figure 2).

Research Question 2a. How do teachers and school psychologists perceive their own and each other's adherence to the best practices for assessment as described in the published literature? Sixteen questions were asked of both groups to rate the frequency with which a variety of research-based best practice procedures occur in their consultation with one another and then to choose 5 of the 16 procedures they consider most important. Frequency designations used a 5-point, Likert-type scale labeled *never*, *rarely*, *sometimes*, *often*, and *always*. The data were analyzed along levels of agreement and disagreement between the two groups of respondents. Table 3 summarizes the data from this analysis. Comparisons were based on two specific analyses: The first analysis (group) compared responses of all TSVIs with all school psychologists. The second

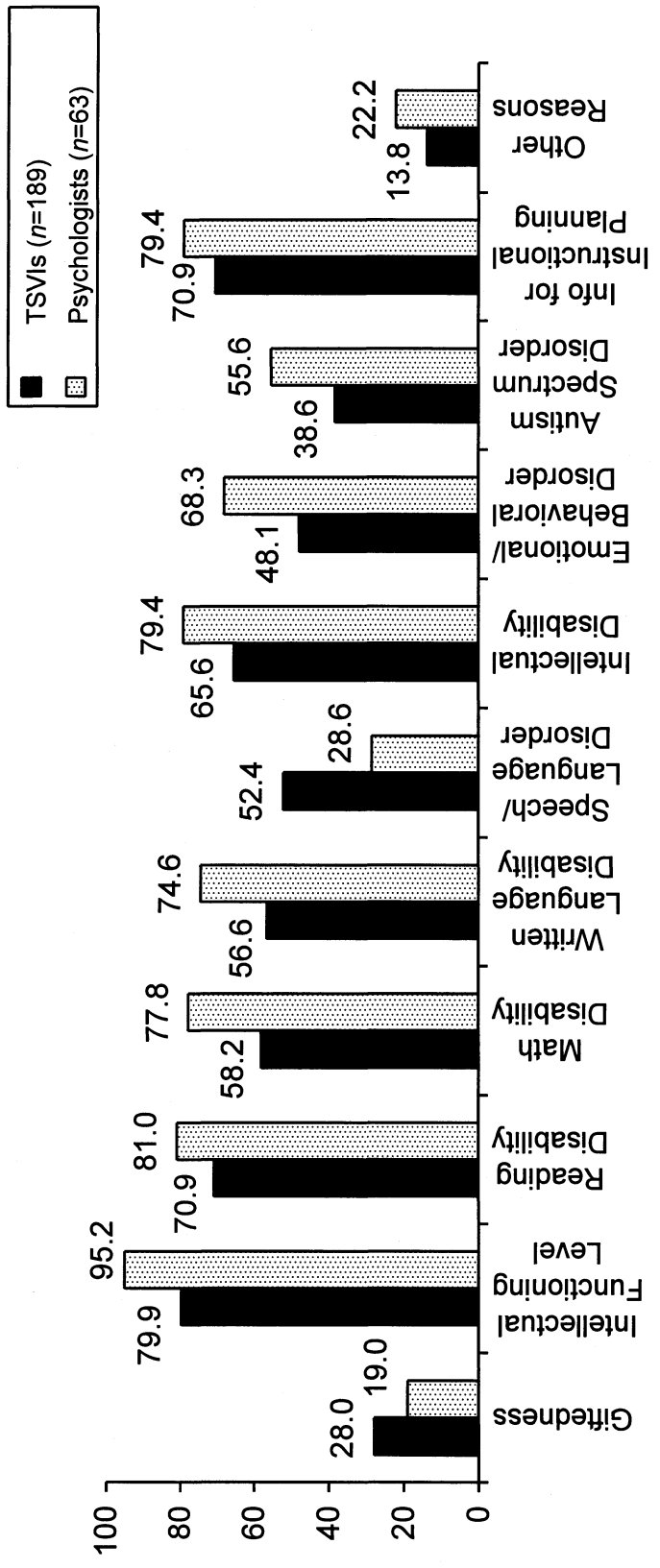

Figure 2. Reasons for student referral reported in percentages by teachers of students who have visual impairments (TSVIs) and school psychologists.

Table 3

Comparisons of Agreement Between Teachers of Students Who Have Visual Impairments (TSVIs) and School Psychologists by Groupwise and Pairwise Analyses

Statement	Comparison by	
	Group	Pairs
The teacher reviews the medical eye report and history with the school psychologist.	$\tau_b = .001$ $p = .98$	$\tau_{pairs} = .211$ $p = .07$
The teacher provides a functional vision assessment report/learning media assessment to the school psychologist.	$\tau_b = -.011$ $p = .85$	$\tau_{pairs} = .331$ $p < .01$**
The teacher and the school psychologist consult on the educational implications of the functional vision report/learning media assessment.	$\tau_b = -.091$ $p = .11$	$\tau_{pairs} = .314$ $p < .01$**
The teacher and the school psychologist discuss and clarify the referral question(s) as they relate to the student who has been referred.	$\tau_b = -.147$ $p < .01$**	$\tau_{pairs} = .183$ $p = .12$
The school psychologist observes the student in more than one school setting.	$\tau_b = -.087$ $p = .12$	$\tau_{pairs} = .231$ $p = .05$
The school psychologist interviews the classroom teacher.	$\tau_b = -.223$ $p < .001$***	$\tau_{pairs} = .161$ $p = .20$
The school psychologist interviews the teacher of students who have visual impairments.	$\tau_b = -.253$ $p < .001$***	$\tau_{pairs} = .066$ $p = .59$
The school psychologist interviews parents for a medical/developmental history.	$\tau_b = -.022$ $p = .72$	$\tau_{pairs} = .222$ $p = .06$
The school psychologist interviews parents for an adaptive behavior measure.	$\tau_b = .019$ $p = .74$	$\tau_{pairs} = .215$ $p = .08$
The school psychologist administers a social/emotional screening instrument (e.g., Achenbach Scales [Achenbach & Rescorla, 1991] and Behavior Assessment System for Children [BASC-2] [Reynolds & Kamphaus, 2004]).	$\tau_b = -.043$ $p = .47$	$\tau_{pairs} = .384$ $p < .01$**

Table 3 (*continued*)

Statement	Comparison by	
	Group	Pairs
The teacher and the school psychologist consult about the potential need for adaptation of test materials (e.g., review test stimuli to determine if adaptation is needed).	τ_b = -.193 p < .001***	τ_{pairs} = .061 p = .62
The school psychologist uses adaptations recommended by the teacher.	τ_b = -.188 p < .01**	τ_{pairs} = -.046 p = .72
The teacher and the school psychologist consult about adjustments to the testing environment (e.g., lighting).	τ_b = -.126 p < .05*	τ_{pairs} = .345 p = < .01**
The school psychologist makes adjustments to the testing environment recommended by the teacher.	τ_b = -.185 p < .01**	τ_{pairs} = .068 p = .58
The school psychologist and the teacher discuss the effects of the student's vision loss on test performance.	τ_b = -.222 p < .001***	τ_{pairs} = .227 p = .07
The teacher, school psychologist, and other team members reach consensus on the question of identification of any additional exceptionalities and on recommendations for instructional planning.	τ_b = -.276 p < .001***	τ_{pairs} = -.071 p = .58

Note. Group, n = 63 school psychologists, n = 189 teachers of students who have visual impairments; pairs, n = 53.

analysis compared pairs of respondents (i.e., a TSVI paired with a school psychologist with whom he or she actually works). Kendall's tau (τ_b and τ_{pairs}) was the statistical test used for these comparisons.

Table 4 indicates that teachers and school psychologists were not significantly different as to the frequency with which they reported that the following consultative procedures occur:

1. Review of medical eye report and history
2. Provision of functional vision and learning media assessments and discussion of the educational implications
3. School psychologist observation of the student in more than one school setting
4. School psychologist interview of parents for medical/developmental history
5. School psychologist interview of parents for adaptive behavior measure
6. School psychologist administration of social/emotional screening instrument.

Nevertheless, there were several areas wherein the groups of teachers and school psychologists significantly disagreed with one another. These groups are presented in temporal order according to the sequence in which they would usually occur in the course of an evaluation. There was a high level of disagreement on questions pertaining to school psychologists' interviews of classroom teachers and

Table 4

Percentage of Teachers of Students Who Have Visual Impairments (TSVIs) and School Psychologists Selecting Most Important Elements of Consultation

Statement	TSVIs	School psychologists
The teacher provides a functional vision assessment report/learning media assessment to the school psychologist.	Rank = 5 37.0%	Not in top 5 28.6%
The teacher and the school psychologist consult on the educational implications of the functional vision report/learning media assessment.	Rank = 2 45.0%	Rank = 4 33.3%
The school psychologist interviews the teacher of students who have visual impairments.	Not in top 5 18.5%	Rank = 5 31.7%
The teacher and the school psychologist consult about the potential need for adaptation of test materials.	Rank = 1 49.7%	Rank = 2[a] 34.9%
The school psychologist and the teacher discuss the effects of the student's vision loss on test performance.	Rank = 4 40.2%	Rank = 1 36.5%
The teacher, school psychologist, and other team members reach consensus on the question of identification of any additional exceptionalities and on recommendations for instructional planning.	Rank = 3 40.7%	Rank = 2[a] 34.9%

[a]Tied ranking.

Note. Group, $n = 63$ school psychologists, $n = 189$ teachers of students who have visual impairments (TSVIs); pairs, $n = 53$.

teachers of students who have visual impairments. Two questions explored this area.

The school psychologist interviews the TSVI. The initial conversation between the two parties is the setting in which most of the other elements of consultation take place. The difference between the two groups was significant. None of the school psychologists reported this *never* occurs, only 12.7% stated that it *rarely* occurs, and 20.3% of the teachers stated this occurs *never* or *rarely*. Only 45.4% of the teachers stated this *often* or *always* occurs, but a large majority (79.4%) of school psychologists reported this occurs *often* or *always*. (τ_b = -.253, $p < .001$). Figure 3 illustrates these findings.

The school psychologist interviews the classroom teacher. The classroom teacher is the individual who spends the most time with the student and, therefore, can provide the most information about classroom performance and behavior.

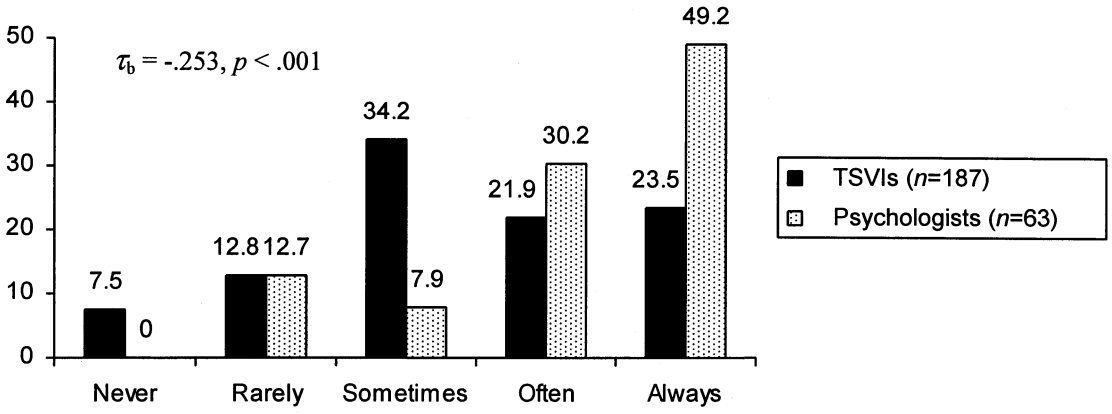

Figure 3. Percentage of teachers of students who have visual impairments (TSVIs) and school psychologists by ratings for "The school psychologist interviews the teacher of students who have visual impairments."

Significant differences were found between the two groups. Ratings of *often* and *always* were given by only 53.6% of the teachers but by 77.4% of the school psychologists. No school psychologists reported this *never* occurs, only 4.8% stated this *rarely* occurs, and 18.6% of teachers stated this occurs *never* or *rarely* (τ_b = -.223, p < .001) (see Figure 4).

The teacher and the school psychologist discuss and clarify the referral question(s). A significant level of disagreement was also seen between the two groups on the frequency with which they discuss and clarify referral questions. Only 9.6% of the school psychologists reported this *never* or *rarely* occurs, and 22.8% of the teachers reported this level of infrequency (τ_b = -.147, p < .01) (see Figure 5).

Adapting the test materials was another area of significant disagreement between the two groups of respondents. This standard reflects the fact that if materials are not accessible to the student, resulting scores are invalid and useless.

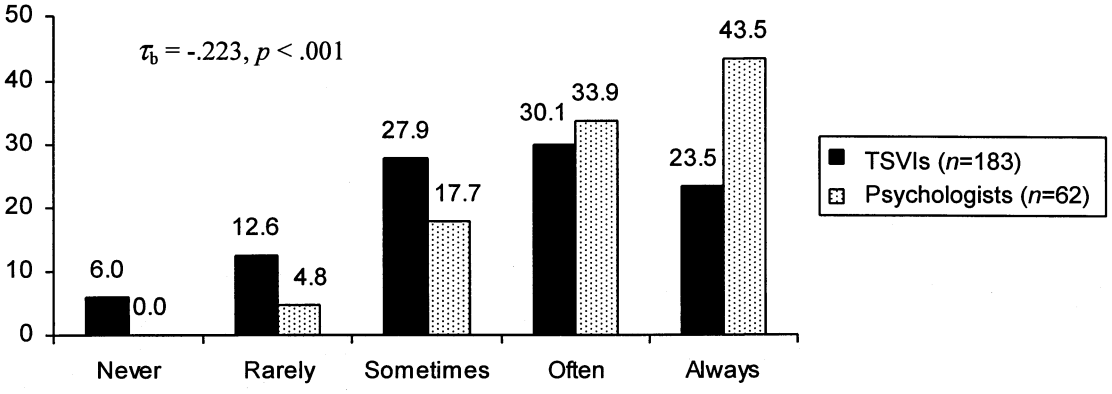

Figure 4. Percentage of teachers of students who have visual impairments (TSVIs) and school psychologists by ratings for "The school psychologist interviews the classroom teacher."

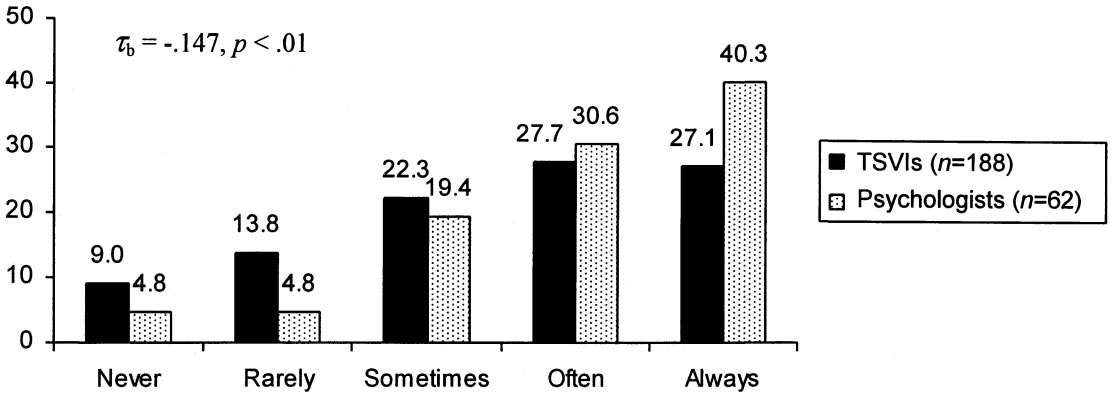

Figure 5. Percentage of teachers of students who have visual impairments (TSVIs) and school psychologists by ratings for "The teacher and the school psychologist discuss and clarify the referral question(s) as they relate to the student who has been referred."

Two questions explored this area.

The teacher and the school psychologist consult about the potential need for adaptation of test materials. Substantial differences between TSVIs and school psychologists were evident: 53.7% of the teachers and 74.6% of the school psychologists reported this *often* or *always* occurs. At the other end of the spectrum, 24.5% of the teachers and 9.5% of the school psychologists reported this occurs *never* or *rarely* (τ_b = -.193, p < .001) (see Figure 6).

The school psychologist uses the adaptations recommended by the teacher. Consultation is of value only to the extent that the appropriate adaptations are actually implemented. Only 67.8% of the teachers and 84.1% of the school psychologists reported this *often* or *always* occurs. Conversely, 14.8% of the teachers reported this *never* or *rarely* occurs, and only 4.8% of the school psychologists stated this *never* or *rarely* occurs (τ_b = -.188, p < .01) (see

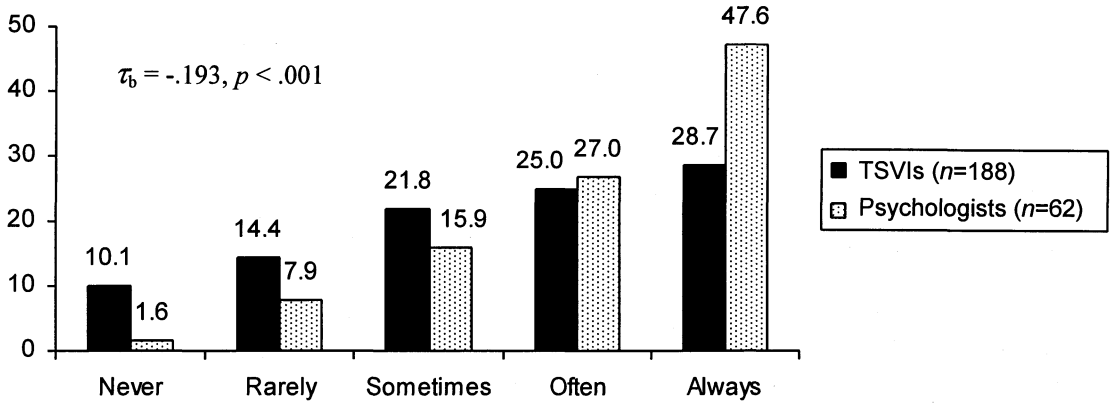

Figure 6. Percentage of teachers of students who have visual impairments (TSVIs) and school psychologists by ratings for "The teacher and the school psychologist consult about the potential need for adaptation of test materials (e.g., review test stimuli to determine if adaptation is needed)."

Figure 7).

Adjustment to the testing environment was also somewhat uncertain across both groups. Failure to make needed adjustments to test environments (e.g., lighting and arrangement of the room) will compromise the students' ability to perform optimally. Two questions explored this area.

The teacher and the school psychologist consult about adjustments to the testing environment. This question addresses concerns similar to the needs regarding materials adaptation. A majority of the school psychologists (66.6%) but only 48.9% of the teachers reported this *often* or *always* occurs (τ_b = -.126, p < .05) (see Figure 8).

The school psychologist makes adjustments to the testing environment recommended by the teacher. Again, consultation is of little use without implementation. Of the teachers, 61.0% reported this *often* or *always* occurs, and

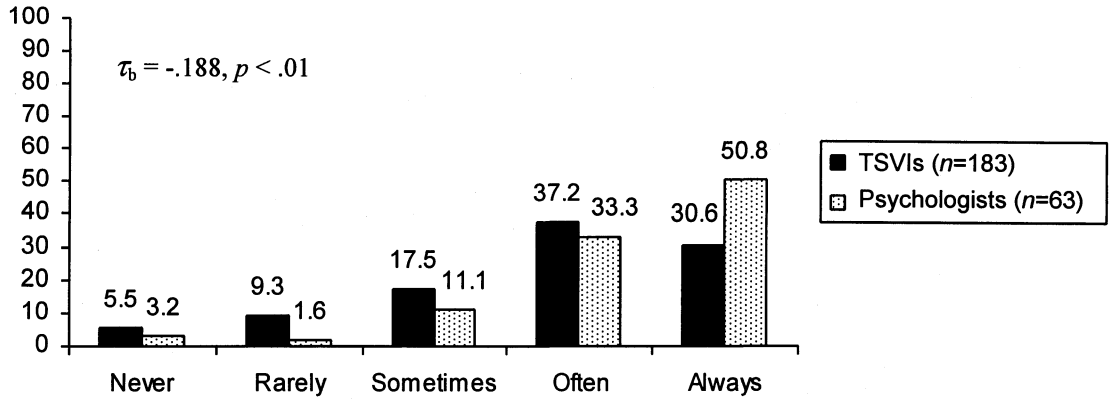

Figure 7. Percentage of teachers of students who have visual impairments (TSVIs) and school psychologists by ratings for "The school psychologist uses the adaptations recommended by the teacher."

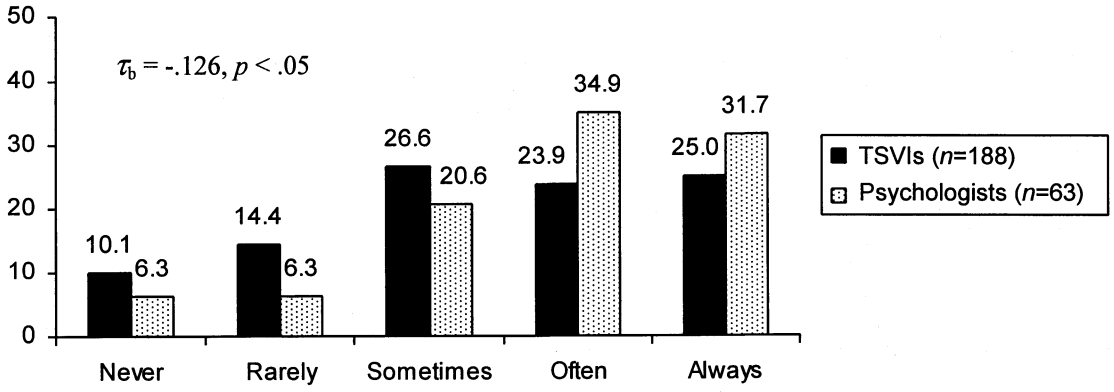

Figure 8. Percentage of teachers of students who have visual impairments (TSVIs) and school psychologists by ratings for "The teacher and the school psychologist consult about adjustments to the testing environment (e.g., lighting)."

82.6% of the school psychologists reported this *often* or *always* occurs (τ_b = -.185, $p < .01$) (see Figure 9).

The school psychologist and the teacher discuss the effects of the student's vision loss on test performance. Of the teachers, 57.9% stated this *often* or *always* occurs, and of the school psychologists, 80.6% stated this *often* or *always* occurs. Of the teachers, 20.7% stated this *never* or *rarely* occurs, and only 3.2% of the school psychologists stated this *never* or *rarely* occurs (τ_b = -.222, $p < .001$) (see Figure 10).

The teacher, the school psychologist, and other team members reach consensus on the question of identification of any additional exceptionalities and on recommendations for instructional planning. None of the school psychologists reported this *never* occurs. Only 1 stated this *rarely* occurs, and 12.3% of the teachers stated this *never* or *rarely* occurs; 70.0% of the teachers and 88.9% of the school psychologists reported this occurs *often* or *always* (see Figure 11).

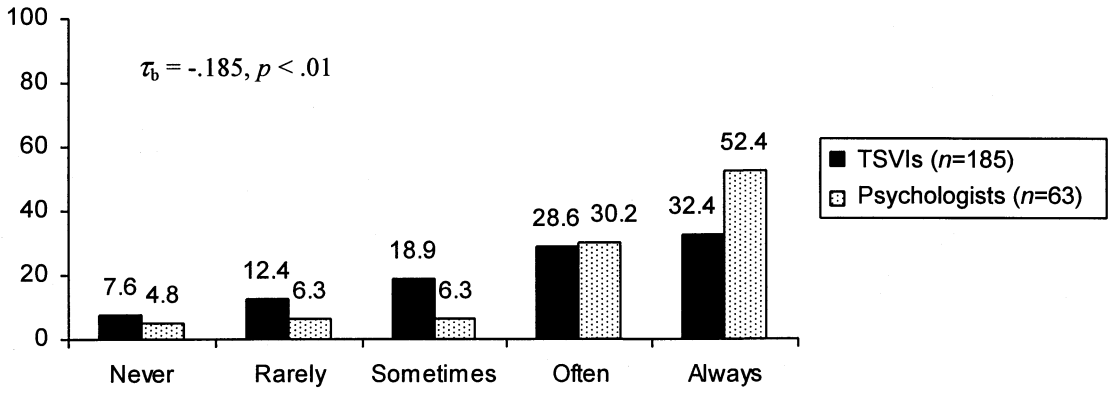

Figure 9. Percentage of teachers of students who have visual impairments (TSVIs) and school psychologists by ratings for "The school psychologist makes the adjustments to the testing environment recommended by the teacher."

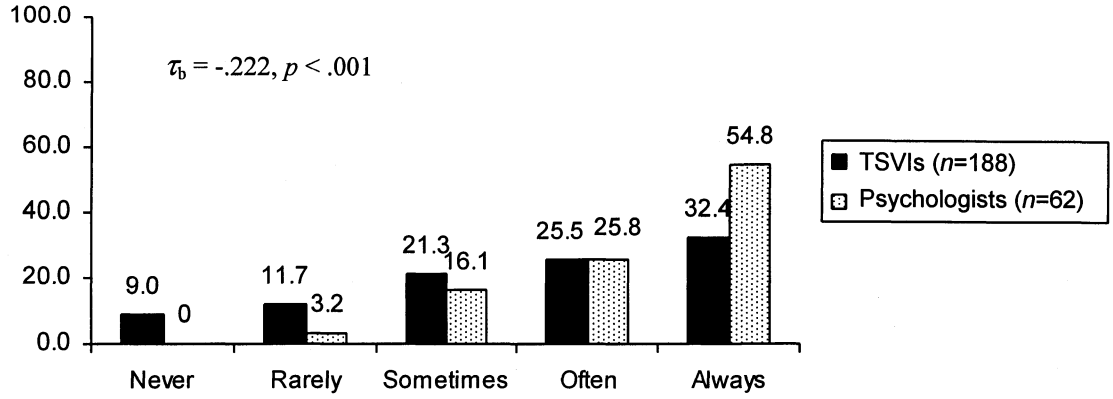

Figure 10. Percentage of teachers of students who have visual impairments (TSVIs) and school psychologists by ratings for "The school psychologist and the teacher discuss the effects of the student's vision loss on test performance."

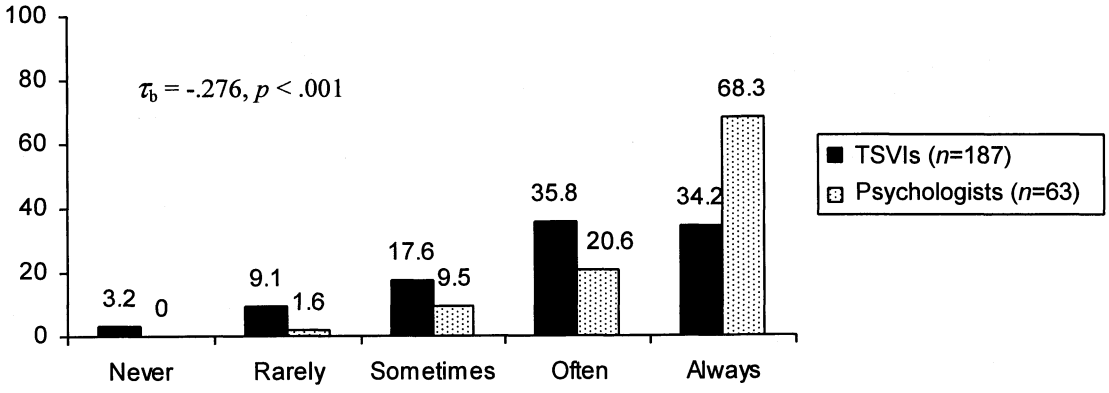

Figure 11. Percentage of teachers of students who have visual impairments (TSVIs) and school psychologists by ratings for "The teacher, the school psychologist, and other team members reach consensus on the question of identification of any additional exceptionalities and on recommendations for instructional planning."

Pair Comparisons

Comparison of matched pairs of TSVIs and school psychologists across the frequency questions revealed no significant differences between pairs for any of those questions. In fact, there was significant positive agreement on 4 of the 16 questions, including: The teacher provides a functional vision assessment report/learning media assessment to the school psychologist ($\tau_{pairs} = .331$, $p < .01$). The teacher and the school psychologist consult on the educational implications of the functional vision report/learning media assessment ($\tau_{pairs} = .314$, $p < .01$). The school psychologist administers a social/emotional screening instrument (e.g., Achenbach Scales [Achenbach & Rescorla, 1991] and Behavior Assessment System for Children [BASC-2] [Reynolds & Kamphaus, 2004]) ($\tau_{pairs} = .384$, $p < .01$). The teacher and the school psychologist consult about adjustments to the testing environment (e.g., lighting) ($\tau_{pairs} = .345$, $p < .01$).

Research Question 2a. Which of the components of the consultation process do the participants consider to be the most important? Teachers and school psychologists were asked to select 5 of the 16 consultation components they considered the most important in the assessment process. Six of the 16 components emerged as the 5 most important to one or both of the groups. These components are listed in the order in which they were presented on the survey (see Table 4).

The four items of greatest importance to both groups were the following:

1. The teacher and the school psychologist consult about the potential need for adaptation of test materials.

2. The school psychologist and the teacher discuss the effects of the student's vision loss on test performance.
3. The teacher, the school psychologist, and other team members reach consensus on the question of identifying any additional exceptionalities and on recommendations for instructional planning.
4. The teacher and the school psychologist consult on the educational implications of the functional vision assessment report/learning media assessment.

Research Question 2b. What is the state of knowledge of teachers and school psychologists concerning best practices in assessment of children who are blind or who have visual impairments? This question was addressed by asking participants in both groups to respond to seven hypothetical statements concerning assessment practices discussed in the existing literature by rating their levels of agreement. Five of these questions dealt with students who are considered to have low vision and use their vision for some or all of their learning. The remaining two questions dealt with students who are considered blind and use senses other than vision for most of their learning. Agreement levels were on a 5-point, Likert-type scale labeled *strongly disagree*, *disagree*, *neutral*, *agree*, and *strongly agree*. Responses to each of these items are summarized below.

Statement 1. Only verbal subtests of cognitive (IQ) tests should be given to students with low vision. A majority of both groups (73.4% of the teachers and 65.1% of the school psychologists) responded they *disagree* or *strongly disagree*

with this statement. When compared across specialized and public school settings, these proportions were consistent.

Statement 2. Visual-spatial items (i.e., items requiring access to visual stimuli [pictures] or constructional tasks [blocks and puzzles]) should be given and used to calculate cognitive scores for students with low vision. Teachers and school psychologists sharply disagreed on this item. More teachers (40.2%) responded they *agree* or *strongly agree* with this statement than *disagree* or *strongly disagree* (28.0%) with it, and more school psychologists (58.8%) stated they *disagree* or *strongly disagree* with this statement. These proportions were consistent across both specialized and public school settings.

Statement 3. Full scale, composite, or other total scores on cognitive (IQ) tests can be valid for students with low vision. Slightly more teachers reported they *agree* or *strongly agree* (43.4%) than stated they *disagree* or *strongly disagree* (36.0%) with this statement. This finding held true across both specialized and public school settings. However, significantly more school psychologists stated they *disagree* or *strongly disagree* (47.6%) than they *agree* or *strongly agree* (33.4%) with this statement. When teacher responses were compared across specialized and public settings, the same proportions held. When comparisons were made across school psychologists in both types of settings, however, substantially more of those practicing in specialized schools for the blind (66.7%) responded they *disagree* or *strongly disagree* as compared with only 8.3% who stated they *agree* with this statement.

Statement 4. It is best to describe performance on visual-spatial items qualitatively for students with low vision. When presented with this item, however, a substantial majority of teachers (76.5%) and school psychologists (84.1%) in all settings responded they *agree* or *strongly agree*.

Statement 5. Use of visual items can contribute to learning media decisions for students with low vision. A majority of teachers (68.9%) and a substantial majority of school psychologists (90.4%) in all settings stated they *agree* or *strongly agree*. The last two statements dealt with the question of the creation of tactile stimuli as analogs for visual stimuli contained in tests designed for sighted students.

Statement 6. The teacher version of the survey stated, "I am able to produce tactile materials that conform to the intent of test items for the school psychologist to use for students who are blind." The school psychologist version of the survey stated, "The teacher is able to produce tactile materials that conform to the intent of test items for me to use for students who are blind." Teacher and school psychologist responses to this item were distributed bimodally, with few *neutral* responses. Slightly more teachers (41.7%) responded they *agree* or *strongly agree* as compared with 34.8% who stated they *disagree* or *strongly disagree*. Slightly more school psychologists (43.5%) stated they *disagree* or *strongly disagree* as compared with 33.9% who said they *agree* or *strongly agree*. No significant difference was found between teachers at schools for the blind and teachers in public school settings; more teachers in both types of settings expressed

confidence in their ability to provide tactile analogs of visual stimuli in such a way as to preserve the intent of test items. School psychologists in both types of settings, however, disagreed with this statement, indicating that teachers are able to provide appropriate tactile analogs of visual stimuli, with 43.5% responding they *disagree* or *strongly disagree*.

Statement 7. It would be preferable to obtain tactile testing materials from a publisher of adapted materials (e.g., American Printing House for the Blind) for students who are blind. The overwhelming majority of both groups (90.3% of the teachers and 74.6% of the school psychologists) in all settings responded they *agree* or *strongly agree* that it would be better to have standard tactile stimuli for use with students who are blind. Table 5 summarizes these results.

Research Question 2c. How satisfied are teachers and school psychologists with the experience of collaboration? Due to a misprint in the teacher version of the original mailed survey, the data from 114 teachers were discarded, leaving 75 teacher surveys to be analyzed for this portion of the study. The school psychologist version of the survey did not contain this misprint; thus, all 63 school psychologists were included.

Five items asked both teachers and school psychologists to indicate their levels of satisfaction with specific aspects of the collaboration process, including overall satisfaction with the consultation process; usefulness of the results of the evaluation; interpretation of the findings; identification of additional exceptionalities; and recommendations for instructional planning, interventions,

Table 5

Comparison of Agreement With Hypothetical Statements Between Teachers of Students Who Have Visual Impairments (TSVIs) and School Psychologists

Statement	Kendall's tau-b
Only verbal subtests of cognitive tests should be given to students with low vision.	-.151 ($p < .01$)*
Visual-spatial items (e.g., items requiring access to visual stimuli [e.g., pictures] or constructional tasks [e.g., blocks and puzzles]) should be given and used to calculate cognitive scores for students with low vision.	.240 ($p < .001$)**
Full scale, composite, or other total scores can be valid for students with low vision.	.107 ($p = .06$)
It is best to describe performance on visual-spatial items qualitatively for students with low vision.	-.101 ($p = .09$)
Use of visual items can contribute to learning media decisions for students with low vision.	-.068 ($p = .27$)
[The teacher is] able to produce tactile materials that conform to the intent of test items for [the school psychologist] to use for students who are blind.	.079 ($p = .19$)
It would be preferable to obtain tactile testing materials from a publisher of adapted materials (e.g., American Printing House for the Blind) for students who are blind.	.164 ($p < .01$)**

Note. Group, $n = 63$ school psychologists, $n = 75$ teachers of students who have visual impairments (TSVIs).

selection of learning media, and placement. Due to the misprint in the teacher version of the original mailed survey, this comparison includes all of the school psychologists but only the TSVIs from the e-mail and conference samples. Table 6 summarizes the results for satisfaction between the groups of TSVIs and school psychologists. Table 7 summarizes the results for teachers working with general practice school psychologists as compared with those who are specialists in visual impairment.

Consultation process. The difference in responses for this question was substantial, with school psychologists expressing more satisfaction with the process

Table 6

Comparison of Satisfaction With Collaboration Between Teachers of Students Who Have Visual Impairments (TSVIs) and School Psychologists

Item	Kendall's tau-b	Level of significance
The consultation process for the psychoeducational assessments in which you have participated	τ_b = -.399	$p < .001$***
The usefulness of the results of the evaluation	τ_b = -.340	$p < .001$***
The interpretation of the findings	τ_b = -.382	$p < .001$***
The identification of additional exceptionalities	τ_b = -.303	$p < .001$***
The recommendations for instructional planning, interventions, placement, and learning media	τ_b = -.352	$p < .001$***

Note. Group, n = 63 school psychologists, n = 75 teachers of students who have visual impairments (TSVIs).

Table 7

Comparison of Satisfaction With Collaboration Between Teachers of Students Who Have Visual Impairments (TSVIs) by Type of School Psychologists (General Practice, Specialist in Assessing Students Who Have Visual Impairments, or Both)

Item	Kendall's tau-b	Level of significance
The consultation process for the psychoeducational assessments in which you have participated	$\tau_b = .232$	$p < .05$*
The usefulness of the results of the evaluation	$\tau_b = .279$	$p < .01$**
The interpretation of the findings	$\tau_b = -.312$	$p < .01$**
The identification of additional exceptionalities	$\tau_b = .148$	$p < .14$
The recommendations for instructional planning, interventions, placement, and learning media	$\tau_b = .328$	$p < .01$**

Note. Teachers of students who have visual impairments (TSVIs): $n = 58$ with general practitioner, $n = 11$ with specialist, $n = 4$ with both.

than did the teachers. A large majority (85.7%) of the school psychologists stated they were *satisfied* or *very satisfied*, and only 45.3% of the teachers responded with those ratings. The distribution was bimodal, with few *neutral* responses. When compared across settings, teachers who work with specialists in the assessment of students who have visual impairments (63.7%) were *satisfied* or *very satisfied*. Only 39.6% of those who work with general practice school psychologists were *satisfied* or *very satisfied*, and 50.0% were *unsatisfied* or *very unsatisfied*.

Usefulness of results of the evaluation. Only 53.3% of the teachers responded they were *satisfied* or *very satisfied*, whereas 82.5% of the school psychologists reported they were *satisfied* or *very satisfied*. When compared across assessment personnel (generalists as compared with specialists), 81.8% of the teachers working with specialists were *satisfied* or *very satisfied*. Only 44.8% of the teachers working with generalists were *satisfied* or *very satisfied*.

Interpretation of findings of the evaluation. For school psychologists, 82.5% stated they were *satisfied* or *very satisfied*, and only 44.8% of the teachers stated they were *satisfied* or *very satisfied* with the interpretation. Across settings, 50.7% of the teachers working with generalists were *satisfied* or *very satisfied*, and 82.5% of those working with specialists reported they were *satisfied* or *very satisfied*.

Identification of additional exceptionalities as an outcome of the evaluation. Of the school psychologists, 74.6% were *satisfied* or *very satisfied* with identification of additional exceptionalities. Only 49.3% of the teachers reported that level of satisfaction. Interestingly, there was no difference between teachers working with specialists and those working with generalists on this particular question.

Recommendations for instructional planning, interventions, placement, and learning media. There was a significant difference between school psychologists and TSVIs on this question, with 88.8% of the school psychologists indicating they were *satisfied* or *very satisfied*. Only 51.8% of the teachers reported a similar level

of satisfaction. Comparison across settings also revealed that 81.8% of the teachers working with specialist school psychologists were *satisfied* or *very satisfied*, and only 42.1% of those working with generalists stated the same. It appears that as far as satisfaction is concerned, additional training does make a difference.

Research Question 3. To what extent are teachers of students who have visual impairments accessing training (both pre-service and in-service) in test and measurement theory, administration of standardized norm-referenced instruments, and consultation? A substantial majority of teachers (79.4%) reported having taken a course in test and measurement theory not specific to students who have visual impairments. Nearly half (49.2%) reported having taken a course in standardized test administration. Slightly more than half (55.0%) reported having taken a course in multidisciplinary consultation or collaboration. Only 36.5% of the teachers reported having taken in-service training or workshops in administration of norm-referenced tests since they started to teach. Some measurement training, either university or in-service, was reported by 94.7% of the teachers. Some standardized test administration training, university, or in-service was reported by 92.1% of the teachers.

Research Question 4. To what extent are school psychologists accessing training (both pre-service and in-service) in the assessment of students with low-incidence sensory impairments, including visual impairments? Only 36.5% of the school psychologists reported taking a specific course in assessment issues for this population. Fewer than half (48.0%) reported having had any hours of instruction

in assessment of students who have visual impairments within a general assessment class; of those, the largest number reported 5 or fewer hours. Only 29.0% reported any in-service or workshop experience; of those, the largest number reported 25 or fewer hours. The greatest number of school psychologists (43.5%) reported having taken *neither* university courses nor workshops relevant to this population (see Table 8).

School psychologists' experience in assessment of students who have B/VIs. The majority (63.5%) of school psychologists reported having evaluated fewer than six students in this population in the last 5 years. Only 17.5% reported having evaluated more than 20 students; these were typically the more experienced specialists working in schools for the blind. Figure 12 illustrates the experience level of the school psychologists with this population.

Research Question 5. What do teachers and school psychologists believe are their needs for further training? Teachers were asked, "If you could have

Table 8

Percentage of School Psychologists (n = 62) Who Took a University Course and/or an In-Service in Assessment of Students With Visual Impairments

	Taken university course	
Taken in-service	Yes	No
Yes	16.1	19.4
No	21.0	43.5

Note. $\chi^2(1) = .96$, $p = .32$.

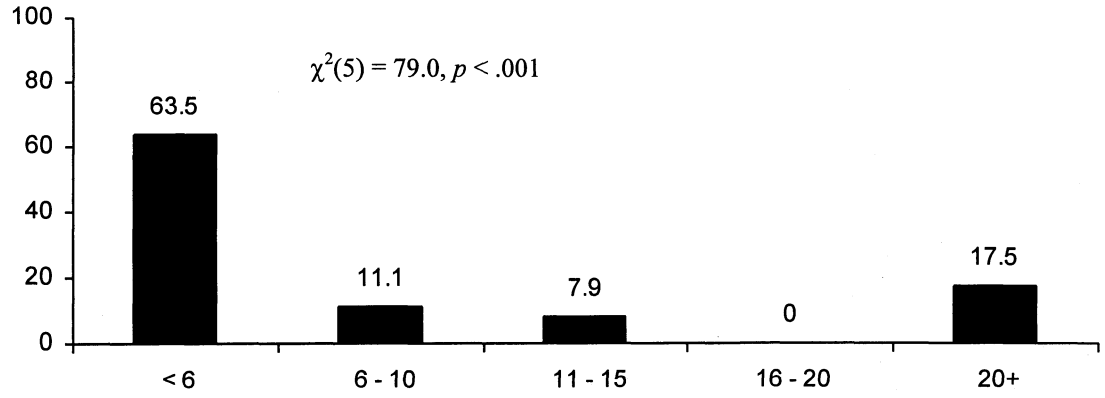

Figure 12. Percentage of school psychologists (n = 63) by the number of students with B/VIs evaluated in the past 5 years.

additional training to improve your skills in assessment and consultation, what would you study?" School psychologists were asked, "If you could have additional training about students who have visual impairments, what would you study?" A final question was asked of both groups, "Is there anything else you would like to tell me?"

Teacher responses appealed for more information on a variety of subjects. Some of these responses included the following:

1. The process by which standardized (particularly cognitive) instruments are created and normed
2. Proper selection and adaptation of materials
3. Valid determination of additional disabilities, particularly about how to distinguish those from the early developmental differences exhibited by children who have significant vision loss

4. More training in consultation to empower teachers to influence school psychologists to recognize their need for teacher input. In fact, one teacher was so frustrated about this problem that she wrote the following:

> You will not get a survey from psychologists who have evaluated any of my students because we do not collaborate with them on evaluations of our visually impaired or totally blind students. We have, in fact, in the past been told that our opinions/suggestions are of no use to the testers in any way, shape, or form! I've only participated in one psychological evaluation that was very beneficial to the student, me, and the tester in 1997 or 1998. I have been teaching for 17 years.

Additional comments by teachers reflected the following issues:

1. Unwillingness of some school psychologists to collaborate: the inability to locate a school psychologist who was willing to use adapted materials and modes of presentation
2. Appreciation for teams of psychologists and other staff who were eager to collaborate: high praise from many teachers for certain groups of specialized school psychologists (e.g., teachers in eastern Canada for the Atlantic Provinces Special Education Authority and an agency in Halifax, Nova Scotia, specializing in students with sensory disabilities). One teacher, however, reported that it is sometimes difficult to persuade the local school district to accept the Atlantic Provinces Special Education Authority's findings.
3. Difficulty of predicting, based on visual acuity alone, which students will need, test adaptations: individual decisions are needed based on

the functional aspects of each student's vision.

4. Tendency of team members and parents to deny additional disabilities
5. Need for information on best practices along with standard adapted materials: "While I feel qualified to produce tactile materials, how valid would a test be with teachers all over the country producing their own?"

School psychologists' responses suggest a need for more training in several areas such as the following:

1. Developmental implications of visual impairment differences across all domains of functioning
2. Information about test selection, print modifications, and correctly adapted tactile materials, and relative responsibilities of the teachers and school psychologists during assessment
3. Assessment to intervention, skill remediation, effective teaching practices, and strategies to help students be successful in general education classrooms
4. Social and leisure activities.

Additional comments by school psychologists included the following:

1. Training "not a priority" because of the low-incidence nature of the population
2. Lack of instruments normed on this population

3. Mutual benefits of collaboration. For example, one school psychologist stated:

> My knowledge . . . has been highly enhanced by my frequent interactions with teachers of the visually impaired. . . . I think my training as a school psychologist has enhanced their ability to understand the students we serve together. Working closely together maximizes our ability to effectively serve our diverse and challenging population.

4. Assessments done by staff at the school for the blind are better than those done by school psychologists in districts.

CHAPTER 4

DISCUSSION

The present study provided a description of the extent to which teachers of students who have visual impairments and school psychologists with whom they work adhere to best practice recommendations in the visual impairment assessment literature, as reported through their responses to survey questions. The study also examined the knowledge base of both groups of participants by asking them to rate their levels of agreement or disagreement with a set of hypothetical statements concerning assessment practices for children who have B/VIs. Levels of satisfaction with various aspects of consultation were also examined.

Similarities and Differences Between Teachers and School Psychologists

A review of demographic information indicates that there were a number of similarities across the two participant groups. The teachers and the school psychologists were well educated. Master or specialist degrees were attained by 85.1% of the teachers; 2.1% attained the doctorate degree; 64.5% of the school psychologists attained the master or specialist degree; and 35.5% attained the doctorate degree. Both groups were also highly experienced. More than 10 years of experience were reported by 67.2% of the teachers and by 49.2% of the school psychologists. A substantial majority of both groups work in public school settings

rather than in specialized schools for the blind. This finding is consistent with the statistics previously cited showing that the great majority of students who have visual impairments are placed in public school settings and are served by itinerant teachers. Both groups reported working with multiple age groups and ability levels. This finding reflects the itinerant nature of most positions for teachers in the visual impairment field and the fact that in many school psychology positions practitioners have responsibility for multiple schools.

Several important differences were noted as well. A much higher proportion of the teachers (38.6%) reported 20 or more years of experience as compared with only 23.8% of the school psychologists. This higher number of very experienced teachers reflects a matter of serious concern in the field. In a time of increase in the population of students who have visual impairments, there is a critical nationwide shortage of credentialed teachers to meet their needs.

One of the most striking findings was that 43.5% of the school psychologists responding to the survey had not taken any courses, in-services, or workshops specific to assessment issues for students who have visual impairments. Yet the vast majority of the evaluations on these students are performed by school psychologists who have the least experience: 63.5% of the school psychologists had evaluated fewer than six students with visual impairments in the past 5 years. School psychologists with little training and little experience are performing the majority of psychoeducational assessments with this population.

This finding of limited training and experience on the part of the school psychologists contrasted sharply with findings that a significant majority of teachers (79.4%) reported having taken a course in test and measurement theory that was *not specific to students who have visual impairments*; nearly half (49.2%) reported having taken a course in standardized test administration; and slightly more than half (55.0%) reported having taken a course in multidisciplinary consultation or collaboration. That level of training combined with the fact that TSVIs are engaged in regular ongoing formative assessment of the progress of their students leave the impression that teachers appear to be somewhat better trained to participate in this process than the school psychologists.

Group Comparisons

Another finding of concern was the level of disagreement between teachers and school psychologists on the frequency with which some of the more critical aspects of the consultative process described in Chapter 3 actually occurred. It is as though the school psychologists are collectively saying, "Of course, we do that all the time," and the teachers are saying, "Oh no, you don't."

One of the first discrepancies noted concerned the question of the clarification of referral questions. The clarification of referral questions drives the selection of areas to assess specific test procedures. Assessments performed without clarity as to the questions to be answered may be unfocused, may deteriorate into proverbial "fishing expeditions," and potentially fail to answer the referral concerns. A much higher percentage of the school psychologists reported

that this was done rather than the corresponding observations made by the teachers. Any model of training or consultation with school psychologists and TSVIs would need to emphasize the importance of this step in the process of preparing for the evaluation.

Another area of significant discrepancy concerns the recommended practice of the school psychologist interviewing both the TSVI and the classroom teacher. These particular steps are critical to develop an understanding of all issues (e.g., academic, behavioral, and social) that precipitated the referral. School psychologists reported a much higher level of occurrence for this activity than did the TSVIs. In contrast to the school psychologists' practice, the interview of the TSVIs was selected by only 18.5% of the them and was not among the five most important elements selected by the TSVIs. The interview was, however, ranked fifth in importance by the school psychologists.

Implementing recommended adaptations of test materials and test environments were also areas of deep division between school psychologists and TSVIs. School psychologists reported a much higher rate of occurrence than did the TSVIs. School psychologists who do not attend to these issues run a risk of producing a flawed or incomplete evaluation. It must be emphasized that accommodations of this type do not give an unfair advantage to the student but merely provide access to the materials and the tasks. Any adaptations to materials, methods of presentation, and environments that are useful in the classroom may be used legitimately in the testing situation (Bradley-Johnson, 1994; Bradley-Johnson

& Morgan, in press; Bradley-Johnson & Sorenson, 1997).

Another key area yielding significantly different results concerned discussion of the effects of the student's vision loss on test performance. Each author cited in Chapter 1 emphasized the importance of observing students with visual impairments during testing for behavioral signs of visual difficulty (e.g., fatigue, light sensitivity, and posture) that might affect students' performance on visual tasks. What visual behaviors could be observed during testing? School psychologists should be alert to signs of fatigue (e.g., watering, redness, or rubbing of the eyes and getting close to materials). School psychologists should also note whether the student tries to back away from materials, suggesting difficulty with near vision, takes a long time to focus on stimuli or to shift focus between stimuli or between stimuli and writing, or exhibits head turning or face tilting when viewing materials. School psychologists should also determine whether items are missed because of a lack of understanding or a lack or an ability to perform the skill or whether items were missed because of difficulty with visual perception of details. Were some items missed when viewing the materials directly but then achieved when using magnification? Correct interpretation of results requires analysis of these observations. If the school psychologist has difficulty making these observations during testing, then perhaps the TSVIs should observe either directly during the testing sessions or after by viewing a video recording. However analysis is done, it is crucial that these issues are considered when interpreting the data.

The most vital component of the consultative process for the team evaluating a student with visual impairment is consensus on the identification of additional exceptionalities. This issue yielded the highest level of disagreement and perhaps the most distressing. The potential consequences of incorrectly identifying a disability that is *not* present or, conversely, failing to identify a disability that *is* present are serious and lifelong. Such errors result in inappropriate expectations, goals, and placements, and they have also resulted in costly litigation in cases where the decisions based on inaccurate results were particularly egregious (Jacob & Hartshorne, 2003).

Pair Comparisons

The four frequency questions for which there was a high level of positive agreement (i.e., provision of functional vision and learning media assessments, discussion of their educational implications, social/emotional screening instruments, and adjustments to testing environments) may signify that the matched pairs of professionals have developed an understanding of their expectations of one another in the collaborative relationship and are working well together. It should also be noted that for three of the four items the group comparisons were not significantly different. Another possible interpretation is that this agreement represents a qualitatively different approach on the part of the teachers to commenting about school psychologists in general as compared with commenting about specific individuals with whom they work.

Selection of Most Important Elements

The survey used in the present study asked participants to select five elements of the consultative process they considered most important. This activity was a forced-choice activity that engendered frustration for some respondents. Participants occasionally selected more than five or wrote comments such as the following: "This is so hard! They are all important." Nevertheless, there was substantial agreement between the two groups on this question. Six elements emerged as being one of the five most important for one or both groups. These elements were as follows:

1. The teacher provides a functional vision assessment report/learning media assessment to the school psychologist (TSVI only).
2. The teacher and the school psychologist consult on the educational implications of the functional vision assessment report/learning media assessment (both groups).
3. The school psychologist interviews the teacher of students who have visual impairments (school psychologists only).
4. The teacher and the school psychologist consult about the potential need for adaptation of test materials (both groups).
5. The school psychologist and the teacher discuss the effects of the student's vision loss on test performance (both groups).
6. The teacher, the school psychologist, and other team members reach consensus on the question of identification of any additional

exceptionalities and on recommendations for instructional planning (both groups).

The agreement on these specific components was high. Any model of training and consultation developed for entry-level professionals just beginning to learn about assessment of students who have visual impairments should target principles and skills in these areas.

Knowledge Base

The knowledge base of both TSVIs and school psychologists was also explored in the present study. Participants rated their levels of agreement or disagreement with a set of seven statements, five concerning students who use their vision for learning and two concerning students who are blind and primarily use senses other than vision. Each of these statements is explored here.

The fact that substantial majorities of both groups disagreed or strongly disagreed with this statement ("Only verbal subtests of cognitive [IQ] tests should be given to students with low vision") was positive. Each of the authors cited in Chapter 1 suggested that useful information could be obtained from observations of visual behavior during visual-perceptual tasks. Responses to another statement ("Visual-spatial items [i.e., items requiring access to visual stimuli (pictures) or constructional tasks (blocks and puzzles)], should be given and used to calculate cognitive scores for students with low vision"), however, give some cause for concern. The fact that many TSVIs agreed with this statement suggests that TSVIs may need instruction with regard to the potential discriminatory effects of the use

of scores based on these tasks. In addition, the fact that a substantial majority of the school psychologists disagreed suggests that school psychologists in both types of settings have a better understanding than do teachers whose scores based on these items would not be valid.

Substantial majorities of both professional groups also agreed with the following statement: "It is best to describe performance on visual-spatial items qualitatively for students with low vision." The authors cited in Chapter 1 suggested that such descriptions can add important information about how students make use of their residual vision and contribute to the selection of accommodations. An example of such a description would be (a) that a student had difficulty seeing critical details of pictures when wearing glasses but was able to see those details and respond correctly to questions when using a video magnifier and (b) that video magnification might be useful to examine details in pictures used in the curriculum and for reading (Sattler & Evans, 2006).

The response to another statement ("Use of visual items can contribute to learning media decisions for students with low vision") was also reassuring. A majority of the teachers and an overwhelming majority of the school psychologists agreed with this item. The belief is that a child's approach to visual tasks during cognitive testing can contribute to the complex task of determining whether students would be more successful using print or braille as the primary literacy mode.

Interestingly, one teacher, however, misunderstood the intent of this item. She responded with a strongly worded comment that the decision about reading media was the responsibility of the teacher only, not that of the school psychologist. As defined by the Individuals with Disabilities Education Improvement Act of 2004, the selection of reading media is in the purview of the *team*, not of any one individual. The operative word in this item was *contribute*. For example, a student persists in calling the picture in the sample item of the Wechsler Intelligence Scale for Children-Fourth Edition picture completion subtest (Wechsler, 2003) a banana because it is yellow. The student cannot identify that picture or any other picture on the subtest. The student is also unable to identify objects in the room by sight but is able to identify them by touch. It would be reasonable for the school psychologist to interpret that behavior as suggestive of a severe limitation in functional vision and as an indication that touch is the primary learning channel (Sattler & Evans, 2006). In such a situation, it would be reasonable to challenge the previous assumption that the student would learn to read print, particularly if the student is already severely struggling in the attempt.

There was a mixed response to two statements dealing with preparation of tactile materials for testing. The first statement was written in two alternate formats for (a) school psychologists ("I am able to produce tactile materials that conform to the intent of test items for the school psychologist to use for students who are blind") and for (b) teachers ("The teacher is able to produce tactile materials that conform to the intent of test items for me to use for students who are blind").

More teachers in both public and specialized settings expressed the idea that they could do a satisfactory job of producing these materials. More school psychologists in both types of settings, however, disagreed with this statement. School psychologists may have responded negatively to this statement because they believe they have a more sophisticated understanding of the cognitive demands of test items than do teachers. School psychologists may also place a higher degree of importance on standardized administration.

On the last item ("It would be preferable to obtain tactile testing materials from a publisher of adapted materials [e.g., American Printing House for the Blind] for students who are blind"), however, large majorities of both professional groups agreed with the idea that it would be better to have standard tactile stimuli for use with students who are blind. One teacher expressed confidence in her ability to produce the items and at the same time raised a question about the general validity if people throughout the country are doing their own.

Satisfaction

The final area covered in the survey concerned the level of satisfaction reported by both groups with various aspects of their collaborative experience. The questions dealt with the (a) consultation process; (b) usefulness of the results of the evaluation; (c) interpretation of the findings; (d) identification of additional exceptionalities; and (e) recommendations for instructional planning, interventions, placement, and learning media. For all five items, there were significant differences ($p < .001$) between the groups, with school psychologists expressing

much higher levels of satisfaction than the teachers. This finding suggests that there is much room for improvement in the abilities of both groups to communicate with one another. Either teachers are not expressing their concerns or needs to the school psychologists, or the school psychologists are lacking in their ability to perceive expectations from the teachers, or both. Clearly, any model of training or consultation targeted at these groups would need to address these issues.

When satisfaction was compared between teachers working with general practice school psychologists and those working with school psychologist specialists in visual impairment, the differences were significant ($p < .05$ and $p < .01$) for four of the five items: (a) process, (b) usefulness of results, (c) interpretation of findings, and (d) recommendations. These findings suggest that the training and experience of school psychologists make a significant difference in the level of satisfaction experienced by the TSVIs in most of the areas surveyed.

Limitations of the Study

Teachers of students who have visual impairments were contacted through the membership of the teacher divisions of AER. This sampling strategy provided a poorly targeted sample for two reasons: (a) Many of the members of the teacher divisions are no longer working in direct service teaching positions, and (b) many teachers are simply members of AER but not members of the teacher divisions. At the time the mailing labels were provided, AER had no way to sort the database reliably on the specific professional role of "teacher."

In addition to the problem of targeting the sample, the study design relied on the teachers to contact and deliver surveys to the school psychologists. There was no way to directly contact the school psychologists to remind them to send in their surveys. Reminder postcards could only be sent to the teachers. There was also no way to know whether those teachers attempted to gain the participation of school psychologists and, if so, whether their school psychologists simply declined to participate. Additional teacher participants were recruited at the AER international conference. It was not possible to recruit school psychologists in this way. As a result, the total number of school psychologist participants was one third that of the total number of teachers.

In addition to the sampling difficulties noted above, all of the TSVI respondents invited to participate in this study were members of a professional organization. AER estimates that approximately 20.0% of all the full-time equivalent teachers of students who have visual impairments are members of the organization (P. Stanley, personal communication, January 6, 2006). Members of a professional organization may not be qualitatively representative of the entire profession.

An inadvertent misprint on the mailed teacher version of the survey resulted in the loss of data on satisfaction for the entire sample of those teachers who completed the original mailed version of the survey. Only the teacher satisfaction data from the e-mail and conference samples could be used. The conference sample contained no matched pairs. Only group comparisons on satisfaction could be

made. The findings must be interpreted with caution as the data were derived from a different (and much smaller) sample.

In addition, although every attempt was made to make the instructions clear, it was apparent from the nature of responses to three questions that directions may not have been clear enough or they were not read carefully enough by some participants. First, the teachers providing information about the titles of assessment personnel with whom they worked were asked to identify whether they worked with *cognitive* assessment professionals who were school psychologists, educational diagnosticians, or specialists in assessment of intellectual functioning (i.e., a New Hampshire title). A number of respondents added titles of all other members of multidisciplinary teams such as speech and language pathologists, occupational and physical therapists, classroom teachers, and resource teachers. It is possible that a pilot study would have revealed the reason for this misinterpretation of the question and allowed better clarification.

A second item asked both groups who *usually* administers specific tests of academic achievement (e.g., reading, math, and written language) and was designed to determine, without specifying the names of any of the standardized tests, whose responsibility it was to administer *standardized* tests (e.g., Woodcock-Johnson III Tests of Achievement, Key Math, and Kaufman Test of Educational Achievement-II). The decision not to name any specific test was intended to avoid the appearance of endorsing any one test over other available tests. Not naming specific tests may have opened the question to misinterpretation, since many of the

teacher participants named classroom teachers, who clearly are not qualified to administer the tests in question. It was, therefore, unclear whether TSVIs were referring to the diagnostic tests or to classroom academic tests.

Finally, a third item, asking both groups to rate their agreement with hypothetical statements regarding students with low vision, may not have been clear to some participants. The directions defined students with low vision as those who *use their vision for some or all of their learning*. Although this definition should have made it clear that students to whom the questions referred had enough vision to use for academic purposes, a high number of respondents marked "neutral" and wrote comments such as, "It depends on the vision."

Educational background and years of experience were requested from both professional groups. However, no comparisons were conducted to determine how those variables might have affected responses to the content questions.

Survey data are, at best, an indirect measure of the phenomena under consideration. Questions asked people to report their impressions and perceptions of assessment practices, not actual occurrences of those practices. The only way to directly measure the items under study would be to examine student files for evidence of the practices under study. Archival research of this type presents certain problems, particularly regarding confidentiality. An additional concern centers on the reliability of information in the file, since some informal conversations that occur in this type of consultation would not be recorded.

A risk to validity in any survey research is the natural human tendency to respond in the direction of social desirability. Even where there was significant disagreement between the professional groups, most graphs of responses of both TSVIs and school psychologists showed a negative skew (positive bias). Perhaps respondents viewed some of the statements as directly or indirectly instructive of what their practices *should* be and then responded as if they actually *perform* those practices. Perhaps some respondents overestimated the occurrence of those practices that were their own responsibility and underestimated the occurrence of those practices that were the responsibility of the other party.

Implications of the Study

Implications for Practice

The higher level of teacher satisfaction with assessments performed by school psychologists who were specialists in visual impairment suggests that assessments of students who have visual impairments should be performed by specialists in this field (i.e., school psychologists who have advanced training in visual impairment or who have worked in schools for the blind and, therefore, who have practices focused on this population). Members of both professional groups made comments that point to such a conclusion. One school psychologist in general practice commented that the school for the blind does a better job with assessments for this population. However, the practical application of such a policy might be problematic in some regions where long distances are involved. Many specialists in visual impairment practice in schools for the blind where the demands of the

enrolled students on their caseloads may leave little time for assessment of students in public schools. It would probably be wise, however, to seek out the services of a specialist in visual impairment for evaluations of students when contentious issues are involved.

At least one school for the blind (California School for the Blind, Fremont, California) has an assessment program that performs extensive multidisciplinary evaluations. Students who are state residents, who have exhausted assessment resources at the local level, and who still have unresolved educational issues are eligible for this program. Students and their families spend a week at the school while the student joins after-school activities; observations and assessments in all domains are conducted. The assessment program also sends specialists to observe students in their homes and local school settings to address issues and provide consultation to families and local staff (Dibble, 2006).

The impracticality of requiring assessments of students who have visual impairments to be performed by specialists in visual impairment suggests an alternative solution that general practice school psychologists should consult with a school psychologist who specializes in visual impairment prior to participating in an evaluation of a student who has a visual impairment. Consultation is generally less time-consuming than performance of a full evaluation. It would be important, however, for the general practitioner to carry the consultation with the specialist through to the end of the process, including interpretation of results and writing of the report. The process would be instructive for the general practitioner, allowing

for generalization of knowledge and skills to future evaluations.

Implications for Training

Several items have implications for training. For example, comments by teachers and school psychologists point to the conclusion that all university programs in school psychology should require a course in assessment of students with low-incidence disabilities, including sensory impairments. The low-incidence nature of this population probably militates against the practicality of requiring such training for all school psychologists. Some programs, notably Bradley-Johnson's program at Central Michigan University, offer or require such a course, sometimes in combination with other sensory or low-incidence disabilities (S. Bradley-Johnson, personal communication, November 16, 2006).

The assessment program at the California School for the Blind, Fremont, California, provides opportunities for California teachers and other specialists, including school psychologists, to spend a week at the school observing assessments conducted in their program. Visiting specialists are also afforded the opportunity of performing assessments under the supervision of assessment program staff. This model program also offers a variety of workshops for training teachers, school psychologists, speech and language pathologists, and others in many areas of concern for this population (Dibble, 2006). Programs similar to the California program could be set up in other states to provide training to local assessment personnel. School psychologists who have not taken university training in the assessment of students with low-incidence disabilities, including sensory

impairments, should avail themselves of opportunities to take in-service training or workshops in this area of specialization.

In locations where there are specialists with the expertise to teach the intricacies of this art to their colleagues, workshops could be provided to school psychologists who have an interest in making this population an area of specialization. This training, combined with follow-up consultation, could provide a broader base of individuals with competence in this field. States, local school districts, and interagency cooperatives may find it useful to employ individuals with specialized training to perform assessments for these students.

Essential information about best practices in assessment for students who have visual impairments, with references to sources of more detailed information, could be published in a short handout of four to five pages and distributed to schools for the blind. Multiple copies of this handout could then be distributed to TSVIs so that they have something of a practical nature to give to the general practice school psychologists with whom they collaborate. The material in this handout could also be posted to the Web sites of the AER, National Association of School Psychologists, and Texas School for the Blind and Visually Impaired. The Web pages would contain links to more detailed information about blindness and low vision as well as specific information regarding assessment issues. These Web pages could also be offered to state school psychology Web sites. One option for both print- and Web-based materials would be to present information in myth as compared with fact format, citing research evidence for support of the best practice

recommendations in the literature.

The National Association of School Psychologists has an interest group for school psychologists involved in the field of hearing impairment. Forming an interest group for those involved in the field of visual impairment might be productive. Such an interest group could be involved in disseminating more information about this population among the general membership of the National Association of School Psychologists.

Specialists in the assessment of students who have visual impairments could work together to create a Web site offering in-depth information about developmental differences in children with B/VIs, along with information about assessment issues. A national network of specialists who are available to provide training and consultation to teams could be listed there, along with contact information and lists of their particular subspecialty areas (e.g., learning disabilities, multiple impairments, deafblindness, and autism). These specialists could offer consultation focused on the referral question-specific needs of teams concerning individual students.

Implications for Future Research

Although difficult to accomplish, direct examination of student records and interviews with TSVIs and school psychologists might provide more accurate quantitative data about actual practices in the field. The results of such research might be valuable in contributing to training and consultation with both groups.

Two respondents commented that parents often refuse to have their children formally assessed with standardized instruments. Two specific concerns were raised: (a) the lack of instruments designed for and standardized on students who have visual impairments and (b) the lack of "blind norms" for tests designed for the general population. The historical difficulties inherent in using specially designed tests have been previously established. Blind norms would present another difficulty: The usual purposes of assessment are to discover strengths and weaknesses in various domains of functioning and to design interventions to improve functioning in areas that are weak. Individuals who have visual impairments are living and competing in the sighted world. Blind norms would most likely obscure the areas for which interventions are needed. Research into parent knowledge, beliefs, and attitudes toward psychoeducational assessment would provide useful information that might inform parent education about this process. Access to parents, some of whom may also be visually impaired, could be accomplished through two organizations (i.e., National Association of Parents of the Visually Impaired and Parents of Blind Children) and through schools for the blind and local districts. Because a substantial number of parents are themselves visually impaired, any type of survey accessible to the visually impaired would be most effective with these groups. The resulting data may then lead to the development of materials to better inform parents about the potential benefits of having their children participate in psychoeducational assessment if they are referred.

Results of the survey from the limited sample of school psychologists suggest that it would be useful to survey school psychologists more broadly by sampling members of the National Association of School Psychologists as to their knowledge about and experience with B/VI students. Topics could include hypothetical responses to referrals for a student with visual impairment in order to evaluate the knowledge base of general practice school psychologists. Information obtained from these practitioners could then inform training and consultation for the profession. Although this dissertation study focused on the dyad of the teacher and the school psychologist, it would also be useful to apply such a survey to other members of multidisciplinary teams (e.g., speech and language pathologists, occupational and physical therapists, and assistive technology specialists).

Both TSVIs and school psychologists have large caseloads and limited time. It might be useful to inquire of both groups about the sizes of their caseloads and their impact on professionals' ability to implement best practices for the assessment of B/VI students.

Two school psychologists responding to the survey wrote about the low-incidence nature of this population and stated that training has not been a priority. A survey of general practitioners that asks them to identify alternative formats for training and consultation that they would be most likely to access (e.g., on-site consultation, telephone consultation, and video or Internet-based training) could yield ideas about how to provide assistance targeted to their needs.

The suggestions of S. A. Goodman (personal communication, July 19, 2006) are relevant to the implications for practice and training. He stated the following:

> I believe most training about assessment and the visually impaired and blind focuses on the "average" student. The average student only exists as a statistical concept. Visually impaired [and] blind students have the full range of other disabilities and level of functioning as every other student. Therefore, a postschool psychology license with a specialization in vision should be available. Courses would include universal design of assessment instruments, cognitive and language development of the visually impaired as starters.
>
> School psychologists entering our field need self-confidence bolstered, as they do bring skills and knowledge not possessed by others on an assessment team. Support should be offered to assist new-to-the-field psychologists to be assertive about their . . . good practices while keeping an ear open to the effects of each individual student's vision and other handicapping conditions on [the student's] performance.

Future Direction

Although students in this population comprise the lowest incidence group served in special education, they need to be afforded the best possible assessment and programming services to enable them to maximize their potential. In the past, grants have been provided to provide training to school psychologists throughout the United States. However, these grants lacked a mechanism for ongoing long-term consultation. For many reasons (e.g., the heterogeneous nature of the population and the fact that professionals eventually retire and require replacement in the field), ongoing consultation and training of new professionals should be

considered a priority. Long-term funding should be sought to provide such opportunities for professionals serving students who have visual impairments.

APPENDIX A

NATIONAL ASSOCIATION OF STATE DIRECTORS OF SPECIAL EDUCATION ISSUES IN ASSESSMENT

Issue I: Educators should assess students with visual impairments as individuals. They should assess compensatory skills and educational achievements as well as areas of need that are unique to visual impairment.

Issue II: Individuals involved in administering assessments to students who are visually impaired must be knowledgeable about the effects of a visual impairment on learning, *should work closely with personnel who are proficient in the student's reading and writing medium* [italics added] (Braille, large print, or print with low vision devices), should assure appropriate and meaningful testing, and should report student results in accurate and useful ways.

Issue III: The progress of students with visual impairments should be carefully monitored through a system that reflects the recognition of the unique nature of visual impairments.

Issue IV: Educators should recognize the need for ongoing assessment of the progress of students with visual impairments with consideration given to the interaction of functional vision, additional disabilities, environmental factors, learning strategies, unique skill needs, and academic skill attainment.

Issue V: The learning and literacy media assessment of students with visual impairment should be conducted prior to program planning.

Issue VI: Evaluations of infants, children, and adolescents should be completed through a partnership of parents and professionals and should provide parents and professionals with the information they need to make appropriate decisions for the child. (Pugh & Erin, 1999, pp. 51-52)

APPENDIX B

COVER LETTER

April 28, 2006

To my colleagues:

My name is Carol Anne Evans, a teacher of students who have visual impairments, a school psychologist, and a doctoral candidate in school psychology at the University of Utah, working with several professors, including Dr. Dan Olympia (school psychology) and Dr. Janice N. Day (special education/visual impairment).

A review of current and historical literature on the psychoeducational assessment yielded a number of recommendations for conducting collaborative team assessments for students who have blindness and visual impairments but no studies documenting actual practices in the field. The purpose of this study is to develop information about actual consultation practices between teachers of students who have visual impairments and school psychologists with whom they collaborate.

I value your feedback and opinions as well as your effort and time. The prompt return of your completed survey will help to expedite the results of this study. Please enjoy a refreshing cup of herbal tea as a token of my appreciation while you complete this brief survey, which should take about 20 to 25 minutes.

The University of Utah's Institutional Review Board has approved this survey. If you have any questions about participating, please contact me by e-mail at carol_a_evans@comcast.net or the Institutional Review Board at (801)581-3655 if you have questions you'd rather not ask me. Please complete as much of this survey as possible within your comfort level.

All of the information collected during this study will be kept confidential, viewed only by the research team, and stored in a file cabinet in a locked office. All data will be reported anonymously, and you will not be identified individually in the results of this study. The number on your form will be used to check off your name on the mailing list and will then be removed and entered in a drawing for one of four $50.00 gift certificates, two each, for the American Printing House

for the Blind Press (for teachers) or for the National Association of School Psychologists bookstore (for school psychologists).

By completing this survey and returning it in the enclosed, self-addressed, stamped envelope, you are agreeing to participate in this study. If you would prefer not to participate, please e-mail me so your name can be removed from the database I am using for this study.

Thank you for reading this information. Your time and effort are greatly appreciated.

Please mail your completed survey by May 25, 2006.

If you would benefit from an accessible electronic file, please e-mail me and I will send one to you immediately.

Sincerely,

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Daniel E. Olympia, PhD
Assistant Professor, Chair

Janice N. Day, PhD
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