

Report from the Study Group

29th IRI 2004

Institute on Rehabilitation Issues

**Contemporary Issues in
Orientation and Mobility**

**Rehabilitation Services Administration
U.S. Department of Education**

The Council of State Administrators of Vocational Rehabilitation

National Organization of Rehabilitation Partners

**The George Washington University
Rehabilitation Continuing Education Program**

The contents of this IRI document were developed under a grant (H264A980002) from the U.S. Department of Education/Rehabilitation Services Administration awarded to The George Washington University. However, these contents do not necessarily represent the policy of those agencies, and you should not assume endorsement by the federal government or the university.

Table of Contents

Study Group Members.....	v
Foreword.....	vii
INTRODUCTION.....	viii
1 The Conventional Approach to Teaching Orientation and Mobility	1
2 Independent Travel	33
3 The Impact of Socially Constructed Beliefs about Blindness on the O&M Profession	53
4 Structured Discovery Cane Travel	67
5 Blind Orientation & Mobility Instructors.....	97
6 Qualifications of Orientation & Mobility Instructors.....	109
7 Safety and Liability	129
8 Partnerships	141
APPENDIX A—Glossary of Terms	155
APPENDIX B—Academic Competencies of the Conventional Method.....	161
APPENDIX C—Clinical Competencies of the Conventional Method.....	171
APPENDIX D— NBPCB Competencies.....	175
APPENDIX E— Visual Occlusion Position Paper	179
APPENDIX F— Individual and Group Lessons	185
APPENDIX G— ACVREP Code of Ethics.....	187
APPENDIX H— NBPCB Code of Professional Ethics	193
APPENDIX I— Resource List of Partners.....	199

Study Group Members

Primary Study Group Members

Chairperson: ***Christine Boone****

5252 Deerfield Avenue
Mechanicsburg, PA 17050
Phone: (717) 612-8487
Fax: (717) 612-9312
clbooneeq@msn.com

Greg Mandrake Alan*

Regional Rehabilitation Continuing
Education Program
The George Washington University
2011 Eye Street, NW, Suite 300
Washington, DC 20052
Phone: (202) 973-1547
Fax: (202) 775-0053
gmalan@gwu.edu

Jeffrey Altman

Nebraska Commission f/t
Blind & Visually Impaired
4600 Valley Road, Suite 100
Lincoln, NE 68510
Phone: (402) 471-8119
Fax: (402) 471-3009
jtaltman@ncbvi.state.ne.us

Edward C. Bell*

University of Arkansas
508 North Highland Avenue
Fayetteville, AR 72701
Phone: (479) 521-0788
ebell@uark.edu

Susan Benbow*

Rehabilitation Services Administration
330 C Street, SW, Room 3028
Washington, DC 20202
Phone: (202) 205-5482
Fax: (202) 205-9874
susan.benbow@ed.gov

Christine Brown

University of Michigan- Office of Services
for Students with Disabilities
G664 Haven Hall
505 South State Street
Ann Arbor, MI 48109-1045
Phone: (734) 763-1081
chrbrown@umich.edu

Robert Burton

Virginia Dept. f/t Blind and Vision Impaired
397 Azalea Avenue
Richmond, VA 23227
Phone: (804) 371-3146
Fax: (804) 371-3157
burtonrs@dbvi.state.va.us

Joseph D. Cordova

Joe.Cordova@ed.gov

Joseph Cutter

22 Embury Ave., Apt. #4
Ocean Grove, NJ 07756
Phone: (732) 502-0610
Fax: (732) 648-6257
joseph_cutter@yahoo.com

Donald W. Dew*

Regional Rehabilitation Continuing
Education Program
The George Washington University
2011 Eye Street, NW, Suite 300
Washington, DC 20052
Phone: (202) 973-1560
Fax: (202) 775-0053
dondew@gwu.edu

Ronald Ferguson

Professional Development and Research
Institute on Blindness
Louisiana Tech University
P.O. Box 3158
Ruston, LA 71272
Phone: (318) 257-4554
Fax: (318) 251-0109
fergusonr@lcb-ruston.com
rjferg@latech.edu

Kathleen Mary Huebner*

Graduate Studies in Vision Impairment
Pennsylvania College of Optometry
8360 Old York Road
Elkins Park, PA 19027
Phone: (215) 780-1360
Fax: (215) 780-1357
kathyh@pco.edu

Edna Johnson

Professional Development and Research
Institute on Blindness
Louisiana Tech University
P.O. Box 3158
Ruston, LA 71272
Phone: (318) 251-2891
Fax: (318) 251-0109
ejohnson@latech.edu

Tyra Rice Hawkins

Alabama Dept. of Rehabilitation Services
1105 Woodstock
Anniston, AL 36201
Phone: (256) 238-9302
Fax: (256) 231-4852
thawkins@rehab.state.al.us

Fredric K. Schroeder*

10026 Glenoak Court
Vienna, VA 22181
Phone: (703) 319-9226
schroede@interwork.sdsu.edu

Larry Sidwell

Iowa Dept. for the Blind
524 Fourth Street
Des Moines, IA 50309-2364
Phone: (515) 281-1327
Fax: (515) 281-1263
sidwell.larry@blind.state.ia.us

Patricia Tomlinson

The George Washington University
268 Bayshore Drive
Brick, NJ 08723-7502
Phone: (732) 477-9346
Fax: (732) 262-0984
E-mail: mandalay@comcast.net

William R. Wiener*

Western Michigan University
263-W Walwood Hall
Kalamazoo, MI 49008
Phone: (269) 387-8212
Fax: (269) 387-8232
william.wiener@wmich.edu

* Member of the Editorial Committee

Foreword

The 29th Institute on Rehabilitation Issues (IRI) Primary Study Group is pleased to provide this document, *Contemporary Issues in Orientation and Mobility*. The members sought to include the most relevant information on orientation and mobility. The document is meant to be a user's guide for developing, initiating, and teaching orientation and mobility.

The monograph includes eight chapters. Chapter 1 reviews the conventional approach to teaching O&M; Chapter 2 defines and describes independent travel; Chapter 3 discusses the impact of socially constructed beliefs about blindness on the O&M profession; Chapters 4 provides an overview of structured discovery cane travel; Chapters 5 and 6 discuss O&M instructors; Chapter 7 presents issues related to safety and liability; and Chapter 8 discusses opportunities for partnerships. Each chapter ends with study questions related to the issues discussed in the chapter.

Several appendixes are included at the end of the monograph. Appendix A is a glossary of terms used throughout the monograph; Appendixes B and C provide the academic and clinical competencies of the conventional method; Appendix D provides NBPCB competencies, complementing the monograph's discussions; Appendix E, Visual Occlusion Position Paper, offers an endorsed statement of the Orientation and Mobility Division of the Association for Education and Rehabilitation of the Blind and Visually Impaired; and Appendix F presents individual and groups lessons from AER; Appendixes G and H provide the codes of ethics from ACVREP and NBPCB, respectively; and Appendix I is a list of contact information of partners.

Participation in an IRI study is an honor as well as a major commitment. The writing responsibilities require extensive literature reviews, research, and surveys. This experience offers learning as well as personal and professional growth for all participants. The editors and Primary Study Group Members wish to express their appreciation to the Full Study Group; their input was most beneficial in developing this document. In addition, we wish to acknowledge members of the editorial committee who donated additional time to ensure the monograph responded to the recommendations of the Full Study Group.

—*The Editors*

Donald W. Dew, Ed.D., CRC

Greg Mandrake Alan, MRC, CRC

Introduction

By Christine Boone

This monograph, *Contemporary Issues in Orientation and Mobility*, was originally undertaken for the purpose of addressing the growing shortage of professionals in the field. When the primary study group came together, however, we quickly discovered that before we could approach the problem of training more people as Orientation and Mobility (O&M) instructors, it would be necessary to confront some very basic issues. What is a qualified O&M instructor? What are the accepted, existing methods by which individuals are prepared and qualified? If O&M is to be taught by persons who are blind and visually impaired, are there alternative methods to be employed in order to be safe, effective instructors?

This study quickly became one of the most controversial topics ever undertaken by the Institute on Rehabilitation Issues (IRI). This document stands as a tribute to the excellence, courtesy, and professionalism demonstrated by the members of the primary study group throughout this entire process.

The pages which follow, will present an overview and discussion of the two primary methods of O&M instruction, which are in practice throughout this country today. These will be referred to as the *conventional method* and the *alternative method*. A number of the approaches used in the preparation of O&M instructors are presented as well. The reader will likely discover that much of what we have come to know about both of these instructional approaches is the stuff of legend. We are pleased to have this opportunity to offer the facts. We hope that, in reading this monograph, you will gain some measure of the insight, collaborative spirit, and partnership we enjoyed in its preparation.

The titles of the chapters which follow are self-explanatory and may be found in the Table of Contents. In brief, the reader will find that Chapters 1 and 2 address the conventional approach to O&M instruction and instructor preparation. Chapter 3 sojourns into the realm of attitudes toward blindness and explains the origins of the alternative method. Chapters 4 through 6 provide an explanation of the Alternative approach to O&M instruction and instructor preparation, with Chapter 5 focusing on the effective alternatives and methods used by instructors who are blind. Chapter 7 addresses liability and safety concerns, shared by all instructors and the agencies which employ them, while Chapter 8 looks at partnerships and their contributions to our field.

The appendixes provide examples and further detail about the text. Appendix A contains a Glossary of Terms. These definitions were derived from the literature which was used in the research underlying this document and are cited throughout.

It should be noted that first-person language is not always used in this monograph. Although the *Publication Manual of the American Psychological Association* indicates that the use of first-person language is generally preferred, it also encourages flexibility, where appropriate. If

individuals in a particular community prefer a different expression, such as “red heads” rather than “people with red hair,” this preference should be accommodated in the writing. This document uses both first-person language, e.g., “instructors who are blind and visually impaired,” and emotionally neutral descriptors, e.g., “blind instructors,” because both approaches are favored by large numbers of practitioners and consumers in this field.

Finally, this monograph contains several references to “reasonable accommodations” and “alternative methods.” These terms are not used interchangeably, but are loosely defined as follows:

A reasonable accommodation is required by law and, when applied to persons who are blind or visually impaired, is necessary in enabling an employee or participant to accomplish a task that is ordinarily managed by someone who is sighted. Conversely, an alternative method is simply a different way of accomplishing tasks, not necessarily based on disability. In this application, persons who are blind or sighted and may actually eliminate the need to request a reasonable accommodation may use alternative methods. For example, use of a driver or a sighted assistant would certainly constitute a reasonable accommodation. Practicing O&M instructors who are blind generally employ certain alternative methods, which eliminate the need for a sighted assistant and greatly diminish reliance on drivers.

It has been my great honor to serve as Chair of this 29th IRI. I wish to thank and salute each of my colleagues who have devoted so much of themselves and their work to this process: Dr. Fredric Schroeder, Dr. William Wiener, Dr. Kathleen Huebner, Larry Sidwell, Dr. Ronald Ferguson, Joseph Cutter, Jeffrey Altman, Edward Bell, Christine Brown, Susan Benbow, Tyra Rice-Hawkins, Joseph Cordova, Robert Burton, and Dr. Edna Johnson. We also commend the professionals of The George Washington University: Dr. Donald Dew, Greg Mandrake Alan, and Patricia Tomlinson for their invaluable support and unending patience.

Chapter 1

The Conventional Approach to Teaching Orientation and Mobility

By William R. Wiener

Introduction

The purpose of this chapter is to describe the *conventional approach* to teaching orientation and mobility (O&M) to individuals who are blind or visually impaired. It details the current practices, how the discipline came to its current position, and specific issues from the perspective of conventional practice. Along with chapter 2 in this monograph, it provides a description of traditional practices and expected outcomes. In contrast, chapters 3 through 6 describe an alternative approach to teaching independent travel. Those chapters provide a different and important perspective on how services can be provided.

The practitioners of both the conventional and alternative approaches are committed to what they view as best practice. In regard to many of the salient issues, the alternative approaches are similar to the conventional approach; while, on other issues, there are substantial differences. It is essential for every profession to try new approaches in order to advance. When new approaches are considered and evaluated objectively, those aspects that are found to be effective can be incorporated into best practice, while those that prove ineffective can be discarded. It is hoped that practitioners from each approach will, thus, learn from each other and better understand the differences between the approaches. It is the belief of the conventional approach that there is no single method that is better for all consumers in all situations, and an understanding of the various approaches will allow practitioners to develop an individualized program to meet the needs of each consumer.

Pre-University Training

Throughout recorded history, people who are blind have been described as traveling independently (Coon, 1959). The mode of travel has been either with a long rod to probe the environment or a dog guide to provide information and safety. References in the Bible indicate that blind people traveled independently from town to town using a staff. The ancient Chinese scroll paintings show the use of a dog guide on a rigid harness. It is clear from these references that people who are blind have developed methods of travel that have worked.

In the past, these skills were handed down from one person who was blind and proficient in travel to another needing to learn the skills. This approach, while helpful to the individual needing instruction, was not an efficient or effective way of providing training to a large number of people. It was Richard Hoover who stated that blind people were not traveling as well as they could be (Bledsoe, 1997). Being able to perform a skill does not mean that one is able to

effectively teach it. For example, because one can read does not mean that one can effectively teach reading. Our educational system recognizes that it is necessary to prepare teachers to provide such skills as reading, writing, and arithmetic rather than depending upon the general population to hand those skills down from generation to generation. In a similar fashion, the teaching of independent travel is far more effective, when it is provided by instructors who are specially prepared to instruct consumers in orientation and mobility.

The early field of orientation and mobility began by studying the methods that were used by persons who were blind. W. Hanks Levy in 1872 described the approach of moving a cane from side to side as one walked to clear the path ahead (Levy, reprinted 1949). The government perfected this approach during and after World War II by experimenting with different techniques. Beginning with Richard Hoover at Valley Forge General Hospital, modifications of Levy's techniques were attempted with blind veterans. Later, Russell Williams, a blinded war veteran and chief of Hines VA Hospital, further developed and documented the procedures. By the late 1940s, it was clear that these techniques worked, could be standardized, and could be taught to large numbers of individuals who were blind (Malamazian, 1970; Blasch, 1971).

During the 1950s, various civilian agencies for people who were blind tried to replicate the instruction at their facilities by sending observers to the Hines program (Bledsoe, 1997). According to Malamazian (1970), "In most cases, all we imparted was a hearty respect for street crossings, a frustrating respect for ourselves and a desire on the part of the would-be instructor either to have a lot more training or have nothing to do with it himself because he thought there was too much risk." From this experience, it was clear that short-term preparation of instructors was not feasible and that extensive blindfold instruction was necessary to prepare instructors who were capable of providing effective training.

University Preparation

In June of 1958, the Office of Vocational Rehabilitation established O&M as a priority in the training of personnel and, with the help of the American Foundation for the Blind, sponsored a national conference to address criteria for selection of personnel, to develop a curriculum, recommend length of training, and find suitable sponsorship. The conference concluded that "necessary emotional conditioning was so intricate a process, the ingraining of principles through time-consuming laboratory experience so necessary, that the needs of the situation could not be met in a compressed teaching program of two weeks, two months, or even four months" (American Foundation for the Blind, 1960). The conference also concluded that instructors should be sighted so that they could distance themselves from the consumer but still insure the consumer's safety. Individuals present at this conference included Richard Hoover, Rev. Thomas Carroll, Frederick Jervis, Georgie Lee Abel, Oliver Burke, William Debetaz, Irving Kruger, Harold Richterman, Ed Ronayne, Keane Shortell, Fredrick Silver, Stanley Suterko, Russell Williams, Charles Woodcock, M. Robert Barnett, and Kathern Gruber. The conference coordinator was Arthur Voorhees, and the recorder was C. Warren Bledsoe.

Following a positive review of the conference report by the National Council of State Agencies for the Blind, the Division of Services to the Blind of the Office of Vocational Rehabilitation began funding university training programs. The first program began at Boston College in 1960

and the second at Western Michigan University in 1961. Encouraged by the success of the programs and their graduates, in 1966, the Ad Hoc Committee on Mobility Instruction for the Blind recommended the doubling of student enrollment, continued governmental support, and the funding of new graduate and undergraduate programs (Ad Hoc Committee, 1966). Today, there are a total of 16 orientation and mobility university personnel preparation programs across the country and 2 international university programs that are founded on the conventional approach to orientation and mobility (Association for Education and Rehabilitation of the Blind and Visually Impaired [AER], 2003). They include programs to prepare instructors to work with both adults and children. The graduates of these programs have been prolific in publishing the results of their research on methods, and theory relating to orientation and mobility. College and university preparation of practitioners has led to hundreds of articles in peer reviewed journals and numerous textbooks on orientation and mobility, which have advanced practice in the discipline.

Research and the Orientation and Mobility Specialist

Early practice in orientation and mobility was based upon clinical experience and theory borrowed from other disciplines. Gradually, orientation and mobility specialists began documenting their experiences, conducting research, and submitting articles to peer reviewed journals. Quality of research is enhanced when manuscripts are peer reviewed. Typically, the peer review process begins when a journal editor sends a manuscript to a minimum of two researchers who have expertise in the topic area. If disagreement regarding the manuscript occurs between the two reviewers, a third reviewer is brought in for an additional opinion. A premier journal will often also have a consulting research editor who will review research design and statistical analysis of data. The journal editor will then review the recommendations of all reviewers and determine if the manuscript will be accepted for publication or rejected. In some situations, reviewers will accept the manuscript with the stipulation that the author address specific questions or concerns. When all requirements are met, the manuscript will then be accepted for publication. This comprehensive approach differs from the process used by magazines where articles are commissioned or are accepted without critical peer review. Orientation and mobility specialists have benefited from the peer review process and have had their articles published in such journals as the *Journal of Visual Impairment and Blindness*, *RE: view*, *Optometry and Vision Science*, *American Academy of Ophthalmology*, *Bulletin of Prosthetics Research*, *Perception and Psychophysics*, *Teaching Exceptional Children*, *Rehabilitative Optometry*, *Research in Developmental Disabilities*, *Journal of Vision Rehabilitation*, *Journal of Experimental Psychology*, *Perception*, and others.

In 1976, the field of orientation and mobility took a step forward when the American Foundation for the Blind published the first textbook that documented the various non-visual techniques that make up orientation and mobility training (Hill & Ponder, 1976). The text was written in a straightforward manner that simplified the previously complicated descriptions that depended upon kinesiology terminology. The next major leap forward occurred when the American Foundation for the Blind published a textbook edited by Welsh and Blasch (1980) relating to the theory of orientation and mobility. As with many professional survey textbooks, this contained chapters that provided a survey of research, much of which had been drawn from peer reviewed journals in this and related fields. In 1997, joined by Wiener, these editors provided a second

edition of this textbook. The revised textbook was distinguished by the fact that the amount of research generated directly by orientation and mobility specialists had expanded greatly (Blasch, Wiener, & Welsh, 1997). In the years since the first textbooks, orientation and mobility specialists have published additional textbooks on orientation and mobility and have contributed chapters in other books relating to blindness. These publications have covered such topics as techniques of mobility, low vision, teaching children, employment, and serving people with secondary disabilities. Examples of some of these texts include *Early Focus: Working with Young Children Who Are Blind or Visually Impaired and Their Families*, *Teaching Orientation and Mobility in the Schools: An Instructor's Companion*, *Hand in Hand: Essentials of Communication and Orientation and Mobility for Your Students Who Are Deaf-Blind*, *Hand in Hand: Selected Reprints and Annotated Bibliography on Working with Students Who Are Deaf-Blind*, *Hand in Hand: Essentials of Communication and Orientation and Mobility for Your Students Who Are Deaf-Blind—A Trainer's Manual*, *How to Thrive, Not Just Survive: A Guide to Developing Independent Life Skills for Blind and Visually Impaired Children and Youths*, *Independence Without Sight and Sound: Suggestions for Practitioners Working with Deaf-Blind Adults*, *Foundations of Low Vision: Clinical and Functional Perspectives*, *Visual Impairment: An Overview*, *Art and Science of Teaching Orientation and Mobility to Persons with Visual Impairments*, *English/Spanish Basics for Orientation and Mobility Instructors*, *Imagining the Possibilities: Creative Approaches to Orientation and Mobility Instruction for Persons Who Are Visually Impaired*, *Orientation and Mobility Primer for Families and Young Children*, *Foundations of Rehabilitation Counseling with Persons Who Are Blind or Visually Impaired*, and *Orientation and Mobility: Techniques for Independence*.

It is a misconception to believe that research is value-free. Researchers bring their beliefs and value systems into the studies that they conduct. They attempt, however, to neutralize their values by creating sound methodological design, using reliable instrumentation, and controlling for as many variables as possible. Most researchers investigate a question by creating a hypothesis regarding its outcome. It is then up to the researcher to prove his or her expectation through the testing of a null hypothesis, which states that, the hypothesis is not true. The ethical researcher will make great efforts to record and report the data exactly as it occurs rather than slanting the data to support his or her beliefs. Researchers must select a level of confidence regarding the outcome of the hypothesis. Typically, this means that the researcher chooses a level between the .05 level and the .01 level of probability that the outcome of the study is due to the variables being studied and not to chance. At the .05 level of confidence, the researcher is indicating that if the study were repeated 100 times, the outcome would likely be the same 95 times or that the outcome could have occurred by chance only 5 times out of 100. When the data supports the null hypothesis, the researcher must report that his or her belief has not been supported. With all research, it is necessary to replicate and verify the outcomes that are generated. Continued investigation into orientation and mobility is always necessary to determine if the methods and approaches that have evolved are efficacious in providing service.

Research should never be confused with opinion. In the 1980s, the *Journal of Visual Impairment and Blindness* ran a feature called Point/Counterpoint. It was a means of introducing controversial issues and airing different points of view. One of those issues related to certification and the perceived need, on the part of the conventional method, for vision to teach orientation and mobility (Olson, 1981). Wiener expressed his opinion on the need for academic

training and certification as well as vision to teach orientation and mobility. Olson took an opposing view indicating that certification and academic training were barriers and that vision was not necessary to teach orientation and mobility. Neither side on these issues at that time was involved in research to substantiate their positions. Instead they engaged in a series of discussions to share their thoughts on the topic. The opinions expressed on both sides stimulated much discussion but cannot be considered research.

No matter how carefully designed and meticulously conducted, research is only effective when the researcher asks the right questions. Take, for example, the study by Wiener, Bliven, Bush, and Ligammari (1992). In this instance, the authors examined the issue of whether people who are blind can adequately monitor the travel of others who are blind. The experiment selected a sample of 15 subjects who were blind independent cane travelers and had them monitor travelers who were navigating specified routes using a cane. A control group of sighted individuals was also chosen to monitor travelers on the same routes. Care was taken to select variables essential for effective monitoring. These included detection of starting, stopping, turning, negotiating stairs, veering at street crossings, and colliding with obstacles. The routes were counterbalanced to compensate for any bias that might result from the order of presentation of monitoring tasks. The researchers examined the difference in elapsed time between the onset of a behavior and recognition of that behavior as well as the accuracy of the subject's response. The results of the experiment, reported at the .05 level of confidence, indicated that the subjects who were totally blind could not perform as well as the sighted subjects on the variables tested. For example, the subjects who were blind were not able to quickly determine when the travelers inadvertently stepped into the perpendicular street. The authors thus reported that vision made a significant difference in the ability to monitor. However, the authors realized that another question also needed to be addressed. In their conclusion, they suggested that further study was needed to determine if providing training in methods of monitoring would produce a different result. Later, the primary author, serving as the AER Certification Standards Co-chair, and the second committee co-chair followed up on this question by observing instructors who were blind and had been trained to use non-visual means of monitoring (see section below on certification). They found that instructors who are blind use various alternative means to monitor travelers. The problem of determining when a traveler has inadvertently stepped into the street was solved by the instructor standing in the perpendicular street and placing his cane diagonally across the path of the oncoming traveler. From this and other observations, the conclusion was reached that people who are blind can effectively monitor travelers who are blind, when they have received appropriate training in how to monitor. Thus, had the right question been asked in the prior research, there would have been a different conclusion.

Certification and Instructors with Disabilities

In 1964, the American Association of Workers for the Blind (AAWB), an organization for professionals working with adults who were blind and one of the two predecessors to the Association for Education and Rehabilitation of the Blind and Visually Impaired (AER), established a mobility interest group which was later to become the Orientation and Mobility Division under AER. In 1969, AAWB established a certification program in collaboration with the American Association of Instructors for the Blind (AAIB), an organization for professionals working as teachers with children who were blind. The early 1969, standards followed the

requirements of the 1959 conference and required that practitioners possess corrected visual acuity of 20/20 with no field restrictions. It was believed that excellent vision was needed to monitor the travel of the consumer from a distance. Observation of the traveler included such items as posture, gait, use of cane techniques, travel paths on the sidewalk and during crossings, potential collisions with obstacles, and potential encounters with drop-offs. In addition, the instructor was required to quickly track and monitor moving traffic to determine if intervention might be needed to avoid injury to the traveler. It was believed that observations from a distance were needed so that the instructors could remove themselves from the students in order to permit the students to function independently and, thus, increase confidence. Over the years, the standards for certification have evolved with revisions occurring in 1971, 1977, 1995, 1996, and 2001. In 1971, the standards were changed to require 20/40 vision with a contiguous field of 120 degrees. In 1977, the standards shifted to a functional abilities approach but required monitoring from as far as several hundred feet. In the 1980s, proposals using vignettes were developed to move toward a more functional assessment.

All the while, whether instructors should be required to possess vision to provide instruction was debated. AER, successor to AAWB and AAIB, believed that some amount of vision was needed to allow the instructor to monitor the student from a distance. The National Federation of the Blind (NFB), a prominent consumer organization, urged AER to re-evaluate its position relating to the need for vision to teach orientation and mobility. Many within the consumer organization believed that effective instruction and adequate safety could be provided by instructors who are blind. The difference of opinion between AER and NFB was fueled by the desire on the part of each to do what was best for people who are blind. Each believed their position to be in the best interest of the consumer.

To complicate matters, the courts did not establish clear guidance on whether people who are blind or have other disabilities should be granted entrance into professions that require responsibilities traditionally provided by persons without disabilities (Wiener & Siffermann, 1997). In 1983, the cases of *Schroeder v. AAWB* and *Schroeder v. the New Mexico Board of Education* were dismissed and withdrawn, respectively. In the first case, it was alleged that the plaintiff who was blind had been the object of discrimination when denied certification by AER. In the second case, it was alleged that the plaintiff was discriminated against in being hired as an orientation and mobility specialist by the State of New Mexico. Schroeder, after completing a master's degree in orientation and mobility, was not able to pass the portions of the functional abilities certification test that required monitoring from long distances, because the test required visual observation, and Schroeder was blind. The first case was dismissed because the lawsuit was based upon the 501-504 Regulations of the 1973 Rehabilitation Act that proved not to apply in this case. The 504 Regulation prohibits the exclusion based on disability of otherwise qualified disabled persons from participation in any federal program or activity receiving federal financial assistance. However, in this case, AER had not been the recipient of federal funding. The second case was withdrawn without a ruling due to procedural problems. Unfortunately, a definitive answer about the certification of persons who are blind in orientation and mobility did not come forward.

In three related situations involving university personnel preparation programs, the decisions reached did not require a change in policies. The courts in *Southeastern Community College v.*

Davis (1979) ruled that a deaf student within a nursing program did not have to be accommodated within the training program. The Office of Civil Rights in 1981, after an extensive review, ruled that Boston College did not have to admit blind students into its peripatology (O&M) program. The courts in McClure v. Texas Tech University (1995) ruled that a student with epileptic seizures did not have to be accommodated within the O&M program. It appeared to AER practitioners that the courts were sending the message that accommodations need not be made, if the accommodations would change the nature of the training program. Nevertheless, the spirit of the Americans with Disabilities Act (ADA) along with the urging of NFB and ACB caused the orientation and mobility division of AER to rethink its beliefs on this issue.

The passage of the ADA in 1990 established new principles for employing people with disabilities that included making a case-by-case determination, job restructuring, job modification, and use of technology in carrying out the duties of the job. While the previously reported study by Wiener, Bliven, Bush, and Ligammari (1992) found that monitoring of cane travel by individuals who were totally blind was not as effective as monitoring by sighted individuals, the study did not look at the use of alternative monitoring techniques. As summarized above, Co-chairs of the AER Orientation and Mobility Division's Certification Standards Committee, Elga Joffee of the American Foundation for the Blind and William Wiener of Western Michigan University, traveled to the Nebraska Services for the Blind to observe and were taught some of the techniques used by blind instructors to monitor travelers. From this experience, in 1995, the O&M Division conducted a Conference on Alternative Approaches to which it invited university educators, blind instructors, and others with disabilities to explore alternatives that could be used by persons with disabilities to provide O&M instruction. It was suggested that as an outcome of the conference, AER extend certification to university program graduates as long as they could perform essential job functions using whatever accommodations or alternative means that were necessary to accomplish the task. The AER membership, through the Orientation and Mobility Division and the Board of the organization, voted to support the certification of persons with disabilities as orientation and mobility specialists in 1996. Today, the certification candidate may use whatever means are necessary to carry out the job functions. In some cases, this may include alternative procedures, auxiliary aids, or assistants. As a result of this change of philosophy, instructors with disabilities are regularly certified, and instructors who are blind, use wheelchairs, or have other disabilities are included. Today, certified graduates who are blind have been successfully employed as orientation and mobility specialists.

The Secretary of Education wrote a preamble to the 1997 regulations implementing the Rehabilitation Act Amendments of the 1992 Rehabilitation Act, which permitted state agencies to hire people who are blind and who previously did not have the opportunity to attend university training programs in orientation and mobility. This was an attempt to compensate those agency-trained instructors who were blind and who previously could not enter the university programs due to the visual monitoring requirement. AER practitioners believe that this should be a time-limited exception that has served its purpose and should, therefore, expire. There has been sufficient time for those non-university prepared practitioners to be hired by state agencies. Now that all the university programs admit students who are blind into their orientation and mobility programs, there is no need to perpetuate this standard.

Certification continued to evolve with the development of a certification examination. This movement sprang from a desire for the profession to reach equality with similar professions. It also was made possible by the extensive body of knowledge that had been developed by orientation and mobility specialists. A certification examination was developed through test-writing seminars that were conducted regionally with input from a national consultant responsible for similar efforts for the Commission for Certified Rehabilitation Counseling. The examination was pilot tested by comparing scores from orientation and mobility specialists, teachers of visually impaired children and rehabilitation teachers, and non-vision professionals to find out how different populations would score on the test. An analysis of the test results was used to determine an acceptable score for passage of the test (Wiener & Siffermann, 2000).

The next step in the evolution of our certification program came from the need to establish a certification body that was independent of the professional association. To begin this movement, the AER board authorized the separation and the establishment of the Association for Certification of Vision Rehabilitation and Education Professionals (ACVREP). As part of the process, AER transferred all initial and renewable certifications to ACVREP. The ACVREP infrastructure includes an 11-member board of directors. The majority of board members are ACVREP-certified, and five are non-certified, including one employer, one consumer, and one eye care specialist. Presently, the ACVREP issues the credential *Certified Orientation and Mobility Specialist*, or COMS, to individuals who have completed a university program in orientation and mobility, have passed the certification examination, and have successfully completed an internship supervised by a COMS.

ACVREP received national recognition in October of 2002 from the National Certification Commission (NCC), a non-profit external reviewer of certification programs. NCC granted ACVREP “full registration,” recognizing it as comprehensive, objective, and in compliance with national procedures and more than 20 criteria.

The Content of University Programs Approved by AER

AER has established a university approval program that requires each new university to prepare a self-study guide. The guide examines such areas as number of faculty and their preparation, university and library facilities, course structure and content, practica and internships, and various other matters relating to program quality. Following submission of the self-study guide, an on-site visit is made by a representative committee. Yearly update reports are required after program approval.

It is the belief of most COMS that university preparation at the graduate or baccalaureate level is essential for effective instruction in orientation and mobility. Anecdotal experience with on-the-job training has shown inconsistent preparation of instructors. Since agencies and schools have as their main objective the provision of services to consumers, the preparation of practitioners must take a back seat. Typically, personnel training in agencies has concentrated on technical skills and ignored the theoretical foundations of instruction. While some agencies have provided a comprehensive approach to such training that has resulted in well-prepared instructors, others have provided only a cursory overview. In such cases, this has resulted in spotty preparation that leaves some practitioners ill prepared to provide a full range of services. It is the belief of the

conventional method that university preparation of instructors has set a uniform standard that helps assure consumers that their instructors have been thoroughly prepared.

The shifting of personnel preparation of full instructors to the universities in 1960 has resulted in practitioners attaining the necessary academic underpinnings and clinical skills. Furthermore, instructors who are prepared at the university level owe their allegiance to the consumers whom they serve rather than to the agencies that employ them. They are free to challenge the system and work on behalf of the consumers without fear of losing the ability to work within the discipline (Scott, 1969).

Over the years, the AER O&M Division identified what they believed to be the essential job responsibilities required of O&M specialists and the competencies related to those responsibilities. Instruction in the academic and clinical areas relating to those competencies is incorporated into the universities' academic offerings. A complete listing of the academic competencies can be found in Appendix B.

In 1997, a job analysis survey was conducted to determine the importance of each of 17 job tasks and to validate 12 competence domains relating to those tasks. The following job tasks were extracted from accepted job descriptions and the *Chronicle Guidance Publications Brief 539* (1995).

1. Assessing clients' travel needs, current skills, abilities, and goals
2. Conducting ongoing assessments of O&M skills
3. Assessing environments for travel demands
4. Preparing written reports
5. Developing instructional goals and objectives
6. Establishing rapport with clients
7. Helping clients become aware of body position, movement, and direction
8. Guiding clients to an awareness of the relationships between objects, both fixed and moving, and within spatial systems
9. Teaching techniques that clients need to use to move about safely and independently in the indoor environment
10. Showing clients how to protect their bodies by using basic skills, such as arm and hand protective techniques
11. Teaching techniques that clients need to use to move about safely and independently in the outdoor environment
12. Emphasizing the effective use of visual, auditory, tactile, and other sensory modes
13. Providing instruction and experience in independent travel in the community, including the use of public transportation
14. Making observations and evaluations of clients' progress
15. Maintaining appropriate records
16. Communicating with parents and families, and
17. Confering with other members of the professional team

The job tasks noted above form the basis for the provision of service through the conventional approach. Proponents of the alternative approach would disagree that some of these tasks are

essential. For example, item 10 and part of item 12 are not considered necessary instructional components. The alternative approach proponents believe that any list of tasks should start with introduction of the long cane. They would contend that the use of self protective arm and hand techniques have no role in instruction. Regarding item 12, while these proponents might agree that training is needed in auditory and tactile functioning, they contend that training in the use of vision is not necessary. They believe that the integration of residual vision occurs naturally and generally outside the instructional setting. They strongly support the use of visual occlusion for all instruction.

Each of the job tasks listed above was examined in relation to each of the competencies and the competence domains in which they are embedded. In order of importance, the following competence domains were determined to be necessary to the practice of O&M:

1. O&M skills and techniques
2. Instructional methods, strategies, and assessment
3. Multiple disabilities
4. Concept development
5. Sensory motor functioning
6. Systems of O&M
7. Medical aspects of blindness and visual impairment
8. Psychological aspects of blindness and visual impairment
9. Human growth and development over the life span
10. Development, administration, and supervision of O&M programs
11. Professional information, and
12. History, philosophy, and the profession of O&M

The rank ordering represents a *fit* between 17 job tasks and the domains that were examined. Today, this listing serves as the basis for the content of the university AER orientation and mobility programs.

Embedded within this curriculum are the clinical skills necessary for the practice of O&M. Each university program requires its students to learn to travel effectively under the blindfold with a cane in the following environments: indoor, residential, rural, small business, and downtown. This includes the use of public transportation systems. The competencies that comprise the clinical skills are found in Appendix C. As mentioned earlier, the conventional approach proponents believe that blindfold instruction is a necessary component in the preparation of orientation and mobility specialists. An electronic survey of AER-approved university programs found a range of 60 to 135 hours of instruction with the blindfold and low vision simulation occluders with each student (Wiener, 2003). The average number of hours was approximately 100. This took place within the environments described above and includes instruction and experiences in use of auditory, tactile, visual, kinesthetic, and other sensory modalities. It is believed that this range of hours is sufficient to teach the instructor the techniques needed for independent travel and to instill confidence in the effectiveness of those techniques.

The teaching of these travel skills is then reinforced under supervision through practica and internships/externships. Students in each of the university programs are also taught dog guide

instruction. They are taught how to prepare consumers who may choose to enroll in dog guide schools and how to assist them when they return from the dog guide schools. This is accomplished through visits to dog guide schools where instructors attend seminars and experience dog guide travel under the blindfold. In the conventional method, there is a strong belief that dog guide instruction is an excellent form of travel and that people who are blind should be given information on this form of travel so that they can make an informed choice as to which method is suited for them.

The University Clinical Training Sequence

University students participate in a sequential model of instruction that often serves as a model for the instruction that they will provide to consumers. The sequence includes techniques of non-visual travel, assessment and use of low vision, and skills that facilitate working with infants, children, youth, adults, elderly persons, and individuals with multiple disabilities. Students often begin with the human guide technique. A brief period of instruction in this technique is provided to show how a person with a visual impairment can walk with a guide in social situations, or in situations when assistance is needed, and how to reject unwanted assistance. This technique, however, also serves as an introduction to the sensorium available to the traveler. While walking through the hallways, the instructor helps the student perceive the various available sensory information and how it can be relied upon for orientation. In addition, the instructor begins teaching methods of organizing the environment through the use of geographical directions, identification of landmarks, information points, and spatial mapping. Rather than being a passive process, the student is encouraged to actively participate by initiating walking single file when needed, assisting with opening doors, and keeping track of sensory information and travel routes. While this technique serves as a good introduction, the student is weaned quickly from its use so that more independent means of travel can be taught. As soon as possible, a student is presented with a cane and learns its use for indoor travel. This includes using the cane first as a bumper in familiar environments and later as a probe for travel in unfamiliar environments. Techniques are also taught for protection against bumping objects when a cane is not in use.

Outdoor travel usually begins in a quiet residential environment so that students can gradually learn to interpret the sounds they hear. Instruction includes using the touch and/or constant contact techniques on the sidewalk, locating homes, crossing streets without traffic control or those controlled by stop signs, following planned routes of travel, and planning unique routes of travel.

Rural travel is included for those who live in the countryside. During this phase, the student learns to walk in areas without sidewalks, cross streets without curbs or curb cuts, and use unique landmarks.

Small business travel is where the student is exposed to larger volumes of traffic and crossing streets with stoplight control. As part of this instruction, students locate stores and make purchases. Larger business areas are added to increase the complexity of travel. Streets are wider, have multiple avenues of approach, and have islands to be crossed. Part of the instruction includes the use of accessible pedestrian signals where they exist.

Downtown travel affords students the experience of traveling in a more complex environment. They will travel on wide sidewalks, often overcrowded with other pedestrians. The traveler will learn to use elevators, escalators, revolving doors, and other conveyances. Students are taught travel within department stores and other public buildings. Not only does the student take the bus or rapid rail to the downtown area but they also learn to transfer to other lines. During this phase, the student perfects skills in how to obtain reliable information from appropriate sources (e.g., print, auditory, or Braille maps; transit personnel; store clerks; and other pedestrians).

Within each phase of training, the plan is to provide instruction in a manner that assures the safety of the traveler until that traveler is able to take over the responsibility for his or her own safety. This means that within each phase, the instructor starts out in close proximity to the individual and monitors his or her travel and performance. As the individual improves, the orientation and mobility specialist gradually moves farther away until the traveler is weaned from the instructor. To help with this process, it is common for the instructor to provide drop-off lessons and then solo lessons near the end of each phase (Bina, 1976). In the drop-off lesson, the instructor disorients the individual and then drops off the students in a familiar area and asks them to locate a specific objective without asking questions of other pedestrians (Long, 1997). It is up to the traveler to determine his or her present location, through the sensory clues that are available, and then to locate the objective. A further step may involve a solo lesson. In this situation, the instructor may assign the student to find a specific objective independent of the instructor. The student then travels to an objective without being monitored and returns to the instructor's office.

While the model of training most typically progresses from indoor through downtown in the order stated, there is a great deal of flexibility with the actual order, dependent upon the environment and the needs of the student. The process is developmentally progressive and takes into consideration the individual's skill level and psychosocial adjustment to blindness. The sequence is designed to help the individual build a level of confidence in such areas as the use of non-visual skills, visual skills, spatial mapping, sensory awareness and integration, and environmental concept development.

Approaches to Learning

Within each phase of training, students are taught how to understand the organization of their environment. This includes understanding their own relationship to significant objects and understanding the spatial relationships of various objects to each other within the environment. It also includes understanding the grid pattern of streets and their relationship to each other. Once these relationships are known, students can plan sophisticated routes of travel to an objective and alternate means of returning. Later, the instructor prepares the student to learn the environment independently through a process called self-familiarization. The student is taught to efficiently explore an area and discover the streets and relationships within the area.

The instructor relies upon a combination of approaches to teach travel skills that include (a) guided learning, (b) discovery learning, and (c) applied behavioral analysis (Jacobson, 1997). Using guided learning, the student is presented with specific instruction when such an approach is the most efficient means of conveying a skill (Ausubel, Novak, & Hanesian, 1978). Guided

learning is a cognitive approach that provides solutions to problems that require fixed patterned responses. Examples of guided learning in O&M include teaching such cane procedures as the touch technique, shore-lining, and recovery methods. Guided learning is useful in handling situations where the same response may be effective in similar situations. Guided learning provides the building blocks for instruction that takes place using discovery learning.

Discovery learning, a gestalt approach, is used when the solution to be learned is not taught by the instructor but is discovered by the student. A basic principle of gestalt is that the whole is greater than the sum of its parts. For example, when a person is learning to swim, he might be well aware of the individual components, such as proper arm stroking, rhythmic breathing, and kicking but, yet, not be able to stay afloat. Eventually, something intangible happens, and the individual puts all the parts together and can swim. The same can happen in orientation and mobility when students put together the components that they were taught during guided learning and now can solve a mobility problem. In discovery learning, as the student comes across a problem in mobility, the instructor is silent or provides only encouragement or, in some cases, provides leading questions. For example, a student who becomes disoriented after veering into a parking lot is allowed to problem-solve and discover the suitable methods of recovery using whatever sensory cues are available. After an extended period of time, if the individual continues to be disoriented, the instructor might ask, "What sound cues are available?" In some lessons, routes are planned that will result in problems that the student must independently solve. For example, the instructor might select routes where sidewalks dead-end or do not go through to the corner, or where alleys and small streets unexpectedly appear. In discovery learning, it is important that the student be exposed to challenging situations but not situations that are overpowering. This requires a graduated sequence of training that builds upon increasingly demanding environments and previously learned skills. The instructor must learn to gauge the frustration level of the student and intervene only when that frustration level jeopardizes the individual's motivation level or the learning outcome. This is a critical judgment that requires experience and understanding the student.

With the discovery approach, the learning that takes place can be most easily transferred to other tasks in the future. Discovery learning can enhance learning, retention, and transfer but requires increased time and effort. Among learning theorists, there is a debate as to which approach is better. Supporters of discovery learning note that learning from mistakes is better, because the student appreciates the variety of responses that are possible in an unpredictable environment. Supporters of guided learning indicate that while experience is a good teacher, it may sometimes be too inefficient. Conventional orientation and mobility typically initially takes place through guided learning so that the student can attain proficiency with the fundamental skills. Strategies and tactics, however, are later applied through discovery learning. It is the opinion of the conventional approach proponents that better instruction consists of a combination of both approaches based upon the needs and readiness of the student. Various approaches may be used within the same lesson and from lesson to lesson, depending on the student, the student's past experience with similar situations, the situation itself, and which approach will provide the student with the optimal learning experience.

Applied behavioral analysis is an approach minimally used in the instructional process. It is based upon the shaping of behavior and, thus, is only acceptable when the student agrees with

the goal and the approach. When implemented, it is most often used with students who have secondary cognitive or emotional disabilities. In such situations, a parent or guardian gives his or her assent to the use of these techniques. It relies on operant conditioning and schedules of reinforcement. Operant conditioning is defined as the use of pleasant and unpleasant consequences to change behavior (Walker & Shea, 1980). When students use a skill correctly, they are reinforced through a predetermined schedule of reinforcement. The reinforcement may be provided intermittently to reduce extinction of the behavior, when reinforcement is not presented. Prompting or the presenting of clues may be used at the beginning of training and gradually faded as the student learns the skills. With students who have severe cognitive impairments, a backward chaining approach may be used that starts with rewarding completion of the last segment of a route and gradually adding earlier segments of travel. In this way, the student who customarily could not remember the later segments of a complicated route will have more practice with those later segments and will be able to complete the route without confusion. The educational or rehabilitation team works together with the student to determine the most effective approaches and reinforcements needed to provide consistency to promote learning. Working with students with cognitive delays, brain damage, cortical visual impairments, autism, and severe multiple disabilities requires that the O&M instructor have the ability to use many different instructional approaches that will match the student's learning style.

Critical Shortages in O&M

Initially, when blind people handed down their skills from one generation to the next, there was no organized or systematic approach to providing training. With the advent of the procedures codified through the Veterans Administration, a system evolved that was transplantable to the early university programs. Following the development of those university programs, it was believed that the need for instructors would be quickly met. It was anticipated that upon the graduation of the first 100 instructors, the demand would be satiated (Malamazian, 1970). After the first 100 graduates, however, the demand remained high; and, today, the demand has continued to outpace the production of practitioners.

The number of graduating orientation and mobility specialists has been cyclical over the past 25 years. In academic year 1979–1980, between 130 and 150 O&M specialists were graduated (Wiener & Uslan, 1990; Uslan, Peck, & Kirchner, 1981). By the 1984-1985 academic year, this number had dropped by approximately 50%. During this period, the established university programs were at risk as federal funds become scarce and fewer students applied for admission into the programs (Corn & Spungin, 2003). In 1989, AER and the National Council of State Agencies for the Blind jointly surveyed 450 agencies and schools to determine the need for orientation and mobility specialists (Wiener, 1989). With a 70% response rate, it was learned that 16.5% of the respondents found it impossible to fill positions, and another 33.3 percent reported having great difficulty. The survey further indicated that the greatest unmet service need was for O&M specialists who could effectively provide services to those individuals who were multiply disabled and elderly, respectively. The agencies and schools also reported that the desired level of preparation for instructors was Master's degree (64.6%), Bachelor's degree (15.6%), Master's or Bachelor's degree (12.8%), Associate's degree (1.6%), and Non-university training (8%). During this same period of time, new recruitment efforts had been established by AER. By 1990, the number of graduating O&M specialists had soared to 186 graduates (Wiener & Joffee, 1993).

In 1995, Corn, Bina, and DePriest reported that in a survey of 985 parents of students attending special schools for children and youth who are blind, 76.6% stated that their Local Education Agency did not have an O&M specialist available or was not aware if one was available.

Today, the numbers of university-trained orientation and mobility specialists are again reduced. In academic year 2000-2001, the universities graduated 100 orientation and mobility specialists and 38 dually prepared orientation and mobility specialists/teachers of visually impaired children (Ferrell, 2001). According to Mason, Davidson, and McNerney (2000), 1,300 O&M Specialists were practicing within the country in 2000. The Academy for Certification of Vision Rehabilitation and Education Professionals (2003) reports that 1,958 individuals are certified by that organization to practice O&M. In a recent survey of members of the orientation and mobility division of the Association of Education and Rehabilitation of the Blind, (Wiener, Ambrose, Bourquin, Copass, DeJonge, Joffee, Newman, Mancil, Bozeman, & Sauerberger, 2003), it was reported that an average of 34 students per facility have been waiting for more than a month for O&M services or have been receiving only abbreviated services. According to the National Plan for Training Personnel to Serve Children with Blindness and Low Vision an additional 10,000 orientation and mobility specialists are needed to serve all of the children requiring instruction (Mason et al., 2000). This figure, however, is predicated upon a caseload of eight students for each instructor. In reality, this ratio is quite low and may be unrealistic. Also, previous studies have shown that the number of positions available is far lower than the actual need for instructors. If, however, vision rehabilitation becomes a component of the Medicare program, the number of positions may greatly expand. With such a growing need for service, innovative ways must be found to provide preparation for aspiring professionals.

Early attempts to contend with the growing need for instructors spawned the development of agency training programs to prepare practitioners. Some of those attempts in the early 1960s included, among others, the Greater Pittsburgh Guild for the Blind and the Cleveland Society for the Blind. Over the years, however, most of those programs have ended. The preparation of instructors by agencies whose missions are to provide services often results in a conflict over where to direct valuable resources.

The ever-growing need for instructors has led some organizations to experiment with aides and assistants. Most notably, Scheffel (1975) attempted to train rehabilitation aides who were to provide portions of the orientation and mobility training program. While the initial concept was to train aides who would assist the instructors, it was found that the aides took on responsibilities for which they had no preparation. After several years, and careful evaluation, Scheffel's efforts were discontinued, due to inappropriate expansion of the role of the paraprofessional.

In 1991, the Orientation and Mobility Division of the Association for Education and Rehabilitation of the Blind and Visually Impaired authorized the training of Orientation and Mobility Assistants who were prepared through in-service training. The OMA program was a result of a process that began in 1985 and culminated with a position paper and implementation process that identified specific roles and responsibilities for assistants (Wiener & Uslan, 1990; Wiener & Hill, 1993; Wiener, Deaver, DiCorpo, Hayes, Hill, Manzer, Newcomer, Pogrund, Rosen, & Uslan, 1990). Through a survey, division members identified those roles that did not require the comprehensive understanding of the rehabilitation process. The roles were limited to

supplementary skills, because the Division agreed that the full range of outdoor travel should only be provided by professionally prepared instructors. The roles included assisting with body image training, sensory training, sensory-motor development, spatial-environmental concepts, basic skills, diagonal cane technique, travel indoors, and travel in protected outdoor environments. The approach incorporated a *Train the Trainer* model that relied upon workshops hosted by AER to prepare trainers who would, in turn, prepare the assistants.

After more than a decade of experience with the assistant program, the Division recognized that the OMA program had not been successful (Wiener & Siffermann, 1997). Few assistants were trained and utilized using this model. One of the main reasons for the lack of success was the reaction of employers. A survey of instructors reported that their employers would not invest the time necessary to train the assistants.

For this reason, a new approach has been proposed by the Orientation and Mobility Division of AER that would switch from a train the trainer model to one that would be a partnership between the university programs and the agencies and schools. In this model, the university programs would offer the academic training through distance education and rely on the agencies and schools to provide the required clinical training and practicum. The roles of the assistant, while somewhat expanded, would also be limited to supplementary skills. This approach is currently being considered by the Division (Wiener et al., 2003).

Distance education also shows great promise for the preparation of larger numbers of Orientation and Mobility Specialists (Huebner & Wiener, 2001). Centralized education has slowly given way to models that allow individuals in remote locations to benefit from instruction. The Instructional Telecommunications Council (2001) defines distance education as

the process of extending learning, or delivering instructional resource-sharing opportunities, to locations away from a classroom, building or site, to another classroom, building or site by using video, audio, computer, multimedia communications, or some combination of these with other traditional delivery methods.

There are many studies in higher education that have assessed the impact and effectiveness of distance education strategies on learning. Many clearly show the effectiveness of distance education (Dohner, Zinser, Cullen, & Schwartz, 1975; Fraser, 1985; Jones & Timpson, 1991; Maloy & Perry 1991; Sullivan & Osburn, 1990; Gunawardena & Boverie, 1993; Haynes & Dillon, 1992; Smith, Smith, & Boone, 2000). Along with this movement towards distance education, has come a change in educational philosophy. While in the past, students were often considered the receptacles for information and knowledge, today they are full partners in learning with emphases on cooperative and collaborative learning, self-initiated research, and guided discovery learning. The traditional paradigm of university preparation as instilling knowledge is shifting to a new paradigm of producing learning (Barr & Tagg, 1995). This new approach seeks to facilitate learning through any means found to be effective rather than just through the traditional approaches. The faculty member is no longer exclusively the “sage on the stage” but, instead, becomes the *guide on the side*.

Distance education in orientation and mobility ranges from providing instruction on-site at distant locations to providing education through the virtual classroom. The virtual classroom can be defined as instruction that is provided wholly or partially through the use of media that permits interaction with students without the necessity for face-to-face meetings. The most essential characteristic of the virtual classroom is the use of technology to facilitate interaction between professor and students and between individual students in virtual environments. Using the virtual classroom model, instruction can be provided from a host site to distance sites using combinations of live, two-way interactive audio, asynchronous video, or both, and synchronous/asynchronous computer-based interactions that take advantage of local area networks (LANs), wide area networks (WANs), the Internet, and the World Wide Web (WWW or the Web) (Williams, Paprock, & Covington, 1999). In the field of Orientation and Mobility, there is one common theme that runs through all of the distance education programs. No matter what technology is used to present material, there must be a means to provide “hands-on” blindfold and visual simulation activities that teach methods of travel. Universities have come up with unique ways of incorporating this experience. Some hire instructors at distant locations to provide the experience. At other institutions, students are required to spend a compressed period of time on campus to receive this instruction. Other models will certainly evolve in the future.

Today, the majority of colleges/universities that prepare practitioners in the field of visual impairment and blindness have launched courses and various levels of program offerings using distance education applications. It is the belief of the universities engaged in teaching the conventional method that these courses and programs show promise in their ability to attract greater numbers of participants and ultimately produce greater numbers of individuals with the qualifications needed to serve individuals who are blind or visually impaired.

Issues from the Perspective of Conventional Practice

Informed Choice

It is a basic belief of conventional method proponents that consumers must be given the right to make informed choices regarding their training. They believe that it is patronizing to expect that the instructor knows what is appropriate for the student and, thus, should dictate the components of the orientation and mobility program. In order to make good choices, consumers must be given all of the facts. They should be given access to various points of view, different approaches to training, and should be empowered to make decisions that will direct the course of instruction. Among the many choices, the student should be free to choose the type of cane to be used, the extent of training, the use or non-use of visual occlusion, whether to use electronic devices, and make other similar choices. In the fields of education and rehabilitation, there exists a continuum of models that are used to assist in such decision-making. They include paternalistic, contractual, educational, and deliberative models (Marinelli & Dell Orto, 1999). The models struggle with the concept of beneficence versus autonomy. At one extreme, practitioners are granted the power to make decisions that they feel are appropriate for the consumer. At the other extreme, the instructors empower the consumer to make most decisions. The conventional approach to orientation and mobility makes use of the educational model, which mixes elements of beneficence and autonomy, or the deliberative model, where the consumer and instructor work together to make critical decisions. The instructor functions using principles of proven practice

but also embraces autonomy of the consumer and allows the consumer to make critical choices. This does not mean that the instructor is forced to violate principles that would compromise the safety of the student but does mean that the desire of the consumer must be considered within the design of the program, when it does not jeopardize the outcomes of the training.

In contrast to this ideology, proponents of the alternative approach believe that choice is at the program level. An individual has the right to learn about various training options and is expected to choose a rehabilitation program based upon what it has to offer. However, once a program has been selected, the student cannot expect the instructor to make fundamental changes to the way in which training is provided.

Use of Visual Occlusion

When O&M training techniques were systematically developed in the 1940s, all instruction was provided using sleepshades or blindfolds. This approach continued for the first several decades of the O&M profession. The purpose of the blindfolds was to teach consumers with vision to use non-visual techniques. Upon completion of the instructional program, however, practitioners began to notice that the consumers were not using the skills they were taught and, instead, were going back to relying on their remaining vision. They had not been taught how to integrate the use of the cane with the use of their vision. In addition, many consumers with functional vision challenged the concept of all instruction being taught under occlusion. Practitioners using the conventional approach, thus, came to the realization that they were not respecting the right of consumers to make choices regarding their own rehabilitation programs.

In the mid 1960s and early 1970s, various innovative instructors began to develop programs to teach people to integrate both visual and non-visual information when they traveled. They have found that there are four challenges for people with functional vision. These people must learn (a) non-visual techniques and how to trust the non-visual information; (b) how to use vision reliably and efficiently, while (c) not allowing vision to distract them from effective non-visual information; and (d) how to use non-visual and visual information together (Wiener & Sauerburger, 2003).

It is the belief of the practitioners using the conventional method of instruction that consumers who have impaired vision do not automatically make good use of their remaining vision. They must learn when to use their vision and how much of their vision can be used reliably. They must also learn when they should rely on non-visual techniques rather than their vision. In addition, they must learn how to process visual information (Smith & Geruschat, 1996; Smith & O'Donnel, 1991). For example, if there are pieces missing from their visual field, they must learn how to fill in what is absent. Instruction in scanning is also essential. For example, a person with a central scotoma, such as macular degeneration, will need to learn to use their highest point of fixation through eccentric viewing. Someone with a peripheral visual loss, such as retinitis pigmentosa, will need to learn scanning techniques to find objects outside of their restricted field. Others may need to learn to use optical devices to read signs, expand their field of view, or view other significant information in the environment. It is important to note that all of these visual skills can be taught by people who are blind, using various accommodations. For example, gaining important visual information about the environment can be accomplished by asking the

student to visually scan the environment and name and describe the location of the critical features useful for orientation and safe travel, such as hand rails, stair edges, doorways, signs, poles, and other objects. Use of optical devices can be taught by the instructor who is blind by teaching the student to use the devices to identify signs on flash cards that are also labeled on the back in Braille. The instructors can assist the students in scanning with an optical device by teaching them to use the device to follow a moving target attached to a wire that is controlled by the instructor. The instructor can build upon these visual techniques in the outdoor environment by having the student locate a perpendicular pole, visually trace up the pole to a sign, and read the attached street name. Being familiar with the street patterns in the neighborhood, the instructor can determine if the student is accurately reading the street names on the signs.

In order to assist consumers in making the optimum use of their remaining vision, the instructor will often conduct special lessons. An intermittent approach to low-vision training is that one method of instruction, often used with low-vision, lessons may be intermixed with blindfold lessons. The consumers, for example, may travel a route with blindfolds and then return from the destination by integrating their vision with the use of the cane. Another way of teaching a person to integrate the use of vision with non-visual techniques is through partial occlusion. In this situation, the bottom half of the consumers' vision is covered so that they are not able to see the ground upon which they will be stepping. They must rely completely on the non-visual information that the cane provides while, at the same time, using vision for orientation to the larger environment.

Some students can also learn to notice and use non-visual information without wearing a blindfold. Although it is more of a challenge to teach this way, this approach has advantages for some consumers. For example, for some individuals, learning without blindfolds will more realistically recreate the situation in which the consumer will travel. For other individuals, it may be better not to use blindfolds, if their use may cause anxiety and interfere with learning.

Teaching people to use their vision does not dismiss the importance of learning to use non-visual information, and one of the challenges of the conventional O&M approach is to incorporate teaching efficient use of vision while still providing instruction in the use of non-visual strategies. History has shown that blindfolding is an effective way to teach people to use non-visual techniques. The blindfold serves to remove extraneous information and to force the individual to concentrate on the rich variety of sensory information that exists. For many individuals, this is an essential component of orientation and mobility training. For others, intermittent and/or partial occlusion is the preferred method of training. Finally, for still other individuals who may not need to use a cane, instruction may consist solely of visual training.

In recent years, a controversy regarding the use of visual occlusion has arisen between various service agencies and practitioners who provide orientation and mobility instruction. Concern about providing the ideal instruction for consumers has prompted the Professional Standards Committee of the AER Orientation and Mobility Division to develop a position paper on visual occlusion. Appendix E contains this position paper.

Teaching through Individual and Group Lessons

The conventional method in orientation and mobility subscribes to the belief that active travel through the environment should be taught with a one-to-one instructor to student ratio. The reasons for individual lessons focus upon five issues: (a) instruction must be individually designed to meet the unique needs of the learner; (b) students learning to travel need individualized attention; (c) discovery learning can be better facilitated when the instructor is monitoring only one student; (d) student safety is best served when the instructor can direct full attention to a single student; and (e) the student will gain a better sense of self reliance when independently performing skills.

While individual lessons remain the standard of practice, there are specific situations in which group lessons are appropriate and advantageous for consumers. Once students have reached proficiency within a phase of training, group lessons may be used to motivate and challenge the participants. In these situations, group instruction may be used to provide peer encouragement, positive competition, accurate self-appraisal, and cooperative teaming skills. Participants in group lessons will gain an appreciation for their own strengths and the differences inherent among travelers. It is not recommended however, that consumers cross streets as part of group lessons, because they tend to follow each other instead of making independent crossing decisions.

Beyond travel lessons, some other areas of instruction amenable to group lessons include concept development, route planning, peer counseling, attitude exploration, sensory training, and visual training. The Orientation and Mobility Division of AER has passed a resolution relating to the use of group lessons. The resolution can be found in Appendix F.

Environmental Access

The Rehabilitation Act of 1973, since the 1992 amendments, has stressed the need for empowerment of consumers through informed choice. Most AER practitioners believe that consumers should be given the opportunity to gain as much information as they choose about the environment. With the advent of wheelchair cuts, multiphase traffic light signaling, and actuated intersections, many consumers choose to have access to more information about their environment. The conventional approach to orientation and mobility embraces the belief that people who are blind have the same right to information about the environment as do people who are sighted. Such information should be made available to people who are blind when it is made available to people who are sighted. AER's organizational efforts in examining environmental access began in 1975 with the establishment of the environmental access committee. Today, the Orientation and Mobility Division of AER continues its activity in the area of environmental access with its work on accessible pedestrian signals.

With the increase in the number of vehicles on the road, the move of residents to the suburbs, and the progression of technology, the traffic environment now consists of streets that have dedicated turn lanes, complex signal phasing, and traffic actuated signals. In the past, most traffic signals were set to a perpetual timer that would change the light every 30 or more seconds.

Pedestrians could, therefore, wait for the light to change and be confident that they would have 30 or more seconds to cross the street before the perpendicular traffic would cross their paths.

Actuated intersections require all pedestrians to push a pedestrian button to get a crossing time and to know the status of the traffic light so they can leave the curb as soon after the onset of the walk interval as it is safe to go. Actuated intersections most often detect the presence of a waiting vehicle through a coil sensor buried under the pavement of the street. When a vehicle stops above the coil at an intersection, the flow of electricity through the coil is modified by the mass of the car, and a signal is sent to a controller that changes the light to green (Wiener, Barlow, Bentzen, Dodson-Burk, Frank, Graham, Noyce, & Vorhees, 2003). The light remains green for 7 seconds or just long enough for the vehicle to pass through the intersection. If there are additional vehicles that follow the first vehicle, the light remains green for a longer period of time. However, if only one or two vehicles pass over the coil, the light quickly changes back to red and the vehicles on the perpendicular street move across the intersection. Many travelers who are blind are not aware that the intersection they are crossing is actuated and that a pedestrian button must be found and pushed to insure adequate crossing time. Because of this problem, many travelers who are blind cross the perpendicular street with the start of a vehicle on the parallel street only to find that halfway through their crossing the flow of traffic on the perpendicular street has begun to move through the intersection.

Most actuated systems provide visual guidance for pedestrians so they will cross at the phase designated by the traffic engineer. The individual who is blind does not have access to this visual information and may not be aware that there is a pedestrian button. Furthermore, even if pedestrians who are blind are aware of the need to push a button, they may not be able to easily locate that button. While recent guidelines state where the pedestrian buttons should be located, often, the poles have been previously put into place before the regulations and may not be where expected. To compensate for this problem, information from Accessible Pedestrian Signals (APS) regarding the existence of pedestrian buttons and their locations, as well as the onset of the pedestrian phase, can be provided to pedestrians.

The possible variations in intersection geometry and signal timing requires an understanding of the features and decisions that must be made in the placement of the APS to make them useable to pedestrians who are blind or have other disabilities and to assure that the information is correctly understood. Orientation and mobility specialists must learn about the types and uses of APS, characteristics of intersections that make APS necessary, relevant regulations, best practices related to APS, where to obtain updated information about characteristics of APS and currently available products, and where to place an APS at an intersection. The orientation and mobility specialist must be able to teach consumers how to understand and use APS systems.

Electronic Travel Aids (ETAs)

The long cane, while touching down ahead of the next footstep, provides the user with a preview of the immediate environment for objects, changes in the surface of travel, and integrity of the surface for foot placement (Blasch, LaGrow, & De l'Aune, 1996). Most often, this preview extends to just ahead of the next step of the user. Longer canes can be used that provide a preview further ahead, but they risk tripping other pedestrians walking ahead. Persons using dog

guides gain similar information by depending upon the movement of the service animal. While both the cane and the dog assist with orientation, their most fundamental service is to provide safety while traveling through the immediate environment.

During the past century, inventors have been trying to develop electronic means of extending the range of knowledge of the environment. Today, we have a variety of electronic travel aids (ETAs) that attempt to provide information supplemental to the cane or the dog. The ETA provides information by emitting energy waves to detect elements of the environment within a specified range and provides the user with information about the location of those elements. Proponents of the conventional approach to orientation and mobility believe that these devices may be of assistance in helping the traveler gain more information about what lies ahead. They are not intended to replace the cane or the dog but only to provide an earlier preview or to locate specific landmarks without having to make physical contact. While the primary tool of travel remains the cane or the dog, the ETA can be used to assist with self-familiarization with the environment and/or to learn about the existence of objects farther ahead or out of reach.

Electronic Orientation Aids (EOAs)

Orientation while traveling is achieved by identifying both person-to-object relationships and object-to-object relationships in the environment. This can be achieved through spatial maps and exploration of the environment. Spatial maps may be large print, Braille, or auditory in nature. The traveler using these maps will examine the area to be traveled by piecing together an understanding of the area and the route to be traveled. These maps have often been difficult to interpret, because they depend upon symbols that are not easily understood or upon verbal directions that are developed from the perspective of another individual. They do, however, provide the user with a means of understanding a large geographical area and the relationships of objects to each other within that area.

Exploration of the environment is useful, because it helps the traveler gain a better understanding of the distances and sensory clues that exist in the environment. This is accomplished by traveling through the area and establishing landmarks, information points, and various waypoints. Using this method, the traveler can better identify his or her relationship to significant objects by traveling through the environment. This approach, however, requires the individual to link together specific parts of a route and later understand their relationships to each other.

Proponents of the conventional approach to instruction believe that EOAs can provide useful supplemental information. In recent years, technology has evolved to the point where it is possible to gain information electronically that enhances orientation to the environment. Typically, when travelers want to explore unknown environments, they ask others about the surroundings and then go out and explore the area. The purpose of EOAs is to allow the individual to gain a preview prior to exploring an area and then to gain valuable information while independently exploring the environment. An example of an effective EOA is the electronic mapping system called Atlas Speaks. This system contains maps of most cities that can be displayed on a computer screen. With the use of screen reading software, the consumer can travel a route on the screen and learn the names of each of the streets that will be encountered. Alternate routes can be easily planned using this same mechanism.

Other types of EOAs are currently in use. Talking Signs is an example of another type of EOA. Using infrared light transmitters with handheld receivers, the user is able to gain information about the environment that is sent through an infrared broadcast signal. Also in use are electronic compasses that provide the traveler with announcements of the direction in which the traveler is facing.

Global Positioning Satellites (GPS) are an example of EOAs that are opening new wayfinding possibilities for persons who are blind or visually impaired (Leventhal, 2003). This approach includes a receiver that processes data from four or more of the satellites in view from the 24-satellite GPS constellation that pinpoints the location of one's position anywhere on Earth. Typically, the receiver locks onto the signal from four of the circling satellites in a favorable geometry for determination of geo-location coordinates of the receiver, latitude, longitude, and altitude. For the use by the traveler who is blind, this information is coupled with a computerized street map of the area in which the person is traveling. The position of the traveler is located on the map, and the location can be announced to the traveler through a voice synthesizer. The device can be programmed to provide various levels of information. The first, street information, can include the intersection type and layout as well as block lengths, street classification (e.g., motorway, alley), and address range. The second, journey information, can provide the distance traveled along with such orientation information as names and distances of perpendicular and parallel streets. The third, points of interest information, can include personal entries, such as the individual's home or place of employment; or regional information, such as public transportation stops, stores, businesses, and other locations. Finally, specific route information can be recorded to provide the traveler with landmarks and choice points of interest along the way to a destination.

Recent developments in miniaturization of computers and mass production of GPS systems have resulted in the potential for people who are blind to make use of this new technology to assist with their orientation. Proponents of the conventional method of orientation and mobility believe that many travelers who are technologically advanced and want to be as independent as possible will benefit from the use of such technology. The international growth of GPS technology is evidenced by the recent joint announcement from the European Space Agency and ONCE, Spain's national organization for the blind, that they have teamed up to unveil a prototype of a GPS system called Tormes to assist travelers who are blind (Sandhana, 2003). The future may even combine GPS with the World Wide Web so that a traveler will be able to easily locate a restaurant and then be able to access its menu before entering the establishment.

Summary

The conventional approach to teaching independent travel has shown its effectiveness for over 40 years. During that time, the U.S. Department of Education through the Office of Special Education Programs and the Rehabilitation Services Administration has provided funding to numerous university programs that continue today. The government's commitment has spawned more and more conventional approach university programs, as the graduates of those programs have shown the efficacy of their teaching.

One of the major benefits of this approach has been the development of the knowledge base in orientation and mobility. Initially, the training methods and theories behind orientation and mobility evolved through clinical practice. With the establishment of a professional workforce capable of conducting research, the practice of orientation and mobility has been subjected to experimental study that either verified the effectiveness of the different areas of practice or led to new directions (Blasch et al., 1997).

In recent years, the Rehabilitation Services Administration has funded Louisiana Tech University to establish alternative approaches to teaching orientation and mobility. While some of the approaches used in their new paradigm are similar to the conventional approach, many of their other approaches depart from conventional thinking and are looking at new ways of preparing instructors and training consumers. Much can be learned from those who develop innovative approaches. Incorporating the better of the alternative and conventional approaches will lead to enhanced programs that will benefit consumers.

Recommendations

- Instructors should increase their emphasis on informed choice and consumer input in the delivery of orientation and mobility services.
- The university preparation model should continue to be supported by governmental agencies and should provide increased funding to allow the programs to increase their enrollment. Within grants, the percentage of funding allowable to support faculty should be increased so that more faculty can be hired and, thus, more students enrolled.
- Models for orientation and mobility assistants should be studied with the intention of providing supplementary skills and practices that will improve services and allow orientation and mobility specialists to serve more individuals.
- Distance education efforts should be evaluated for their effectiveness. Those approaches that prove most effective should be expanded so that individuals who do not have access to traditional learning environments will be able to obtain preparation in orientation and mobility.
- Instructors within the field of orientation and mobility should continue to conduct research that will extend the body of knowledge in the discipline.
- Instructors should individualize their instruction to meet the unique needs of each consumer. The instructor should employ whichever learning approaches are better suited for the specific consumer in the learning environment.
- Instructors should maintain the highest expectations of their students so that travelers can reach their highest level of independence.
- The portion of the preamble of the 1997 regulations to the 1992 reauthorization of the Rehabilitation Act that authorized the hiring of instructors who are blind and have not

attended university preparation programs in orientation and mobility should be brought to a close. All future instructors should be graduates of university programs that utilize either the conventional or alternative models. Funding that has allowed the Comprehensive System of Personnel Development (CSPD) to retrain rehabilitation counselors should be made available in orientation and mobility to improve the academic and clinical teaching skills of individuals who are currently practicing without the benefit of university preparation in orientation and mobility. This is most important for individuals who are blind and did not have the opportunity to attend university preparation programs.

- Consumers should be empowered to exercise informed choice in regard to such issues as the use of visual occlusion, individual or group lessons, access to environmental information, choosing the most appropriate mobility system (e.g., cane or dog guide), use of ETAs, and use of EOAs.
- Instructors from both the conventional and alternative schools of thought should begin to communicate with each other and share information about their various approaches.
- Instructors from the conventional and alternate models should evaluate the effectiveness of their approaches so as to practice only those elements that prove to be effective.

Acknowledgements

The author wishes to thank the following individuals for reviewing this chapter and providing helpful suggestions:

Dona Sauerburger, Orientation and Mobility Division Past Chair
Kathleen M. Huebner, Associate Dean, Pennsylvania College of Optometry
Grace Ambrose, Orientation and Mobility Division Chair

References

- Academy for Certification of Vision Rehabilitation and Education Professionals (2003). Available from <http://www.acvrep.org/StandardSite.htm>
- Ad Hoc Committee on Mobility Instruction for the Blind (1966). Report of the National Conference, Vocational Rehabilitation Administration.
- American Foundation for the Blind (1960). Mobility and orientation—A symposium. *New Outlook for the Blind*, 54(3), 77-94.
- Association for Education and Rehabilitation of the Blind and Visually Impaired (2003). Available from http://www.aerbvi.org/certification/prep_programs.htm.
- Ausubel, D. P., Novak, J. D., & Hanesian, H. (1978). *Educational psychology: A cognitive view* (2nd ed). New York: Holt, Rinehart & Winston.
- Barr, R. B., & Tagg, J. (1995). From teaching to learning—a paradigm for undergraduate education. *Change*, 27(6), 12-25.
- Bina, M. J. (1976). The legal implication of solo experiences in orientation and mobility training. *New Outlook for the Blind*, 69(6), 225-231.
- Blasch, D. (1971). Orientation and mobility fans out. *Blindness 1970-1971 AAWB Annual*. Washington, DC: Association of Workers for the Blind.
- Blasch, B., LaGrow, S., & De l'Aune, B. (1996). Three aspects of coverage provided by the long cane: Obstacle, surface and foot placement preview. *Journal of Visual Impairment & Blindness*, 90, 295-301.
- Blasch, B., Wiener, W., & Welsh, R. (1997). Introduction. In B. Blasch, W. Wiener & R. Welsh (Eds.), *Foundations of orientation and mobility* (2nd ed., pp. 1-6). New York: American Foundation for the Blind.
- Bledsoe, W. (1997). Originators of orientation and mobility training. In B. Blasch, W. Wiener & R. Welsh (Eds.), *Foundations of orientation and mobility* (2nd ed., pp. 580-623). New York: American Foundation for the Blind.
- Chronicle Guidance Publication Brief 539 (1995). *Orientation and Mobility Specialists, G.O.E. 10.02.02; D.O.T. (4th ed.) 076; H.O.C. SIR*. Moravia, NY: Chronicle Guidance Publications, Inc.
- Coon, N. (1959). *A brief history of dog guides for the blind*. Morristown, NJ: The Seeing Eye.

- Corn, A. L., Bina, M. J., & DePriest, L. B. (1995). *The parent perspective on schools for students who are blind and visually impaired: A national study*. Alexandria, VA: Association for Education and Rehabilitation of the Blind and Visually Impaired.
- Corn, A. L., & Spungin, S. J. (2003). *Free and appropriate public education and the personnel crisis for students with visual impairments and blindness*. Tallahassee: Center on Personnel Studies in Special Education, University of Florida. Available from <http://www.copsse.org>.
- Dohner, C. W., Zinser, E., Cullen, T., & Schwartz, M. R. (1985). Teaching basic science and clinical medicine at a distance: An evaluation of satellite communication. *Distance Education*, 6(1), 4-33.
- Ferrell, K. (2001, January). *Unpublished data for goal 3 of the National Agenda for Students with Visual Impairments, including those with Multiple Disabilities*. Paper presented at the University Summit meeting, Atlanta, GA.
- Fraser, A. M. (1985). Video technology and teacher training: A research perspective. *Educational Technology*, 27(7), 20-22.
- Gunawardena, C. N., & Boverie, P. E. (1993). Impact of learning styles on instructional design for distance education. Paper presented at the World Conference of the International Council of Distance Education; 16th, Bangkok, Thailand November 8-13, 1992. (ERIC Document Reproduction Service No. ED359 926.)
- Haynes, K. J. M., & Dillon, C. (1992). Distance education: Learning outcomes, interaction and attitudes. *Journal of Education for Library and Information Studies*, 33(1), 32-42.
- Hill, E., & Ponder, P. (1976). *Orientation and Mobility Techniques: A guide for the practitioner*, New York: American Foundation for the Blind.
- Huebner, K., & Wiener, W. (2001) Distance Education in 2001. *Journal of Visual Impairment and Blindness*, 95(9), 517-524.
- Instructions Telecommunications Council (2001). Available from www.itcentwork.org/definitions.html
- Jacobson, W., & Bradley, R. (1997). Learning theory and teaching methodologies. In B. Blasch, W. Wiener & R. Welsh (Eds.), *Foundations of orientation and mobility* (2nd ed., pp. 359-382). New York: American Foundation for the Blind.
- Jones, C., & Timpson, W. M. (1991). Technologically mediated staff development: A retrospective case study. *The American Journal of Distance Education*, 5(1), 51-56.

- Leventhal, J. (2003). Getting from here to there: A short review of trekker. *AccessWorld*, 4(4), 13-16.
- Levy, W. (1949, April). Blindness and the blind. Reprinted in *New Outlook for the Blind*, 106-10. (Original work published in 1872).
- Long, R., & Hill, E. (1997). Establishing and maintaining orientation for mobility. In B. Blasch, W. Wiener & R. Welsh (Eds.), *Foundations of orientation and mobility* (2nd ed., pp. 39-59). New York: American Foundation for the Blind.
- Malamazian, J. (1970). The first 15 years at Hines. *Blindness*, 59-77.
- Maloy, W. L., & Perry, N. N. (1991). A Navy video teletraining project: Lessons learned. *The American Journal of Distance Education*, 5(2), 40-50.
- Marinelli, R. P., & Dell Orto, A. (Eds.). (1999). *The psychological and social impact of disability* (4th ed.). New York: Springer Publishing Co.
- Mason, C., Davidson, R., & McNeerney, C. (2000). *National plan for training personnel to serve children with blindness and low vision*. Reston, VA: Council for Exceptional Children.
- McClure, R. (1995, June). Texas Tech University, in the United States District Court for the Northern District of Texas Lubbock Division, Civil Action No. 5: 94-CV-185-C, p. 8.
- Olson, C. (1981). Paper Barriers. *Journal of Visual Impairment and Blindness*, 75, 338-339.
- Sandhana, L. (2003, July 10). Seeing-eye and navigation technologies mean more freedom for the blind. *The Christian Science Monitor*.
- Scheffel, R. R. (1975, March). The rehabilitation aide project. *New Outlook for the Blind*, 116-120.
- Scott, R. (1969). *The making of blind men*. New York: Russell Sage Foundation.
- Smith, A. J., & Geruschat, D. R. (1996). Orientation and mobility for children and adults with low vision. In A. L. Corn & A. J. Koenig (Eds.), *Foundations of low vision: Clinical and functional perspectives* (pp. 306-321). New York: American Foundation for the Blind.
- Smith, A. J., & O'Donnell, B. (1991). *Beyond arms reach*. Ekins Park, PA: Pennsylvania College of Optometry: Ekins Park, Pa.
- Smith, S. B., Smith, S. J., & Boone, R. (2000). Increasing access to teacher preparation: The effectiveness of traditional instruction methods in an online learning environment. *Journal of Special Education Technology*, 15(2), 37-46.
- Southeastern Community College v. Davis, 442 U.S. 397 No. 78-711 (1979).

- Sullivan, R. L., & Osburn, M. L. (1990). Teletraining at the postal service. *Technical and Skills Training*, 32-36.
- Uslan, M., Peck, A., & Kirchner, K. (1981). Demand for orientation and mobility specialists in 1980. *Journal of Visual Impairment and Blindness*, 75(1), 8-12.
- Walker, J. E., & Shea, T. M. (1980). *Behavior modification: A practical approach for educators* (2nd ed.). St. Louis, MO: Mosby.
- Welsh, R., & Blasch, B. (Eds.). (1980). *Foundations of orientation and mobility*, New York: American Foundation for the Blind.
- Wiener, W. (1989). Personnel shortages in orientation and mobility. AER & NCSAB Joint Survey. In the development of the profession of orientation and mobility. In B. Blasch, W. Wiener & R. Welsh (Eds.), *Foundations of orientation and mobility* (2nd ed., pp. 553-579). New York: American Foundation for the Blind.
- Wiener, W. (2003, September 9). Request for information from UNIV-OANDM-L electronic mailing list.
- Wiener, W., Ambrose, G., Bourquin, G., Copass, R., DeJonge, J., Joffee, J., Newman, K., Mancil, R., Bozeman, L., & Sauerburger, D. (in press). *The Orientation and Mobility Assistant Survey*. Submitted for publication.
- Wiener, W., Barlow, J., Bentzen, B., Dodson-Burk, B., Franck, L., Graham, J., Noyce, D., & Vorhees, P. (in press). *Accessible pedestrian signals: A curriculum development project*. Easter Seals Project ACTION.
- Wiener, W., Bliven, H. S., Bush, D., & Ligammari, K. (1992). The need for vision in teaching orientation and mobility. *Journal of Visual Impairment and Blindness*, 86(1), 54-57.
- Wiener, W., Deaver, K., DiCorpo, D., Hayes, J., Hill, E., Manzer, D., Newcomer, J., Pogrud, R., Rosen, S., & Uslan, M. (1990). The orientation and mobility assistant. *RE: view*, 22(2), 69-78.
- Wiener, W., & Hill, E. (1993). An innovative model for training orientation and mobility assistants. *Journal of Visual Impairment and Blindness*, 87(5), 134-137.
- Wiener, W., & Joffee, E. (1993). The O&M personnel shortage and university training programs. *RE: view*, 25(2), 67-73.
- Wiener, W., & Sauerberger, D. (2003). *Proceedings of the Conference on Cutting Edge Practices in Orientation and Mobility*, Albuquerque, NM.

Wiener, W., & Siffermann, E. (1997). The development of the profession of orientation and mobility. In B. Blasch, W. Wiener, & R. Welsh (Eds.). *Foundations of orientation and mobility* (2nd ed., pp. 553-579). New York: American Foundation for the Blind.

Wiener, W., & Siffermann, E. (2000). Development of the orientation and mobility certification examination. *Journal of Visual Impairment and Blindness*, 94(8), 485-494.

Wiener, W., & Uslan, M. (1990). Mobility assistants: A perspective on new service providers. *RE: view*, 22(2), 56-68.

Williams, M., Paprock, K., & Covington, B. (1999). *Distance learning: The essential guide*. Thousand Oaks, CA: SAGE Publications.

Study Questions

1. Orientation and Mobility Specialists who are blind are:
 - a. not eligible for certification by ACVREP.
 - b. only eligible for certification by ACVREP if they use a qualified assistant.
 - c. fully eligible for certification by ACVREP if they are able to perform the essential functions of the job.
 - d. eligible for certification by ACVREP only for those job functions that do not involve teaching street crossings.

2. The standard clinical training sequence provided by the conventional orientation and mobility university programs provides blindfold and visual simulation travel activities for an average of:
 - a. 50 hours.
 - b. 100 hours.
 - c. 150 hours.
 - d. 200 hours.

3. The most widely used method of overcoming the shortage of orientation and mobility specialists is:
 - a. developing distance education programs.
 - b. training paraprofessionals.
 - c. turning to physical and occupational therapists.
 - d. recruiting excellent travelers from consumer organizations to serve as instructors.

4. The conventional approach to orientation and mobility believes that:
 - a. non-visual and visual techniques of travel should be taught together.
 - b. it is better to teach non-visual techniques of travel before teaching visual techniques.
 - c. it is better to teach visual techniques of travel before teaching non-visual techniques.
 - d. individuals who exhibit any remaining sight should be blindfolded during instruction.

5. Orientation and mobility lessons should be provided in a group:
 - a. when discovery learning is the instructional approach.
 - b. at the beginning phases of instruction.
 - c. when the student needs to build self reliance.
 - d. when the student needs motivation and challenge.

6. The conventional approach to orientation and mobility believes that consumers:
- a. should adapt to the environment and not request modifications.
 - b. should not rely on artificial means to gain information about the environment.
 - c. should make use of technology to gain information about the environment.
 - d. should rely on sighted individuals to guide them through the environment.

Chapter 2

Independent Travel

By Kathleen Mary Huebner and Larry Sidwell

Introduction

This chapter arrives at a comprehensive definition of independent travel for clients who are blind or visually impaired. The definition considers the heterogeneity of the population of persons who are blind or visually impaired while expressing high expectations that come from the belief and knowledge that people who are blind or visually impaired are as capable of independent travel as are sighted people. This chapter examines a definition of independent travel that considers safety, efficiency, confidence, comfort, choice of travel device, methods of travel, and the use of the cane as the foundation of independent travel. It further identifies some of the post-orientation and mobility (O&M) training skills expected of the travelers who are blind or visually impaired, including those who are deaf-blind or have multiple impairments.

Is there consensus on a definition of independent travel? Probably not. It can mean different things to rehabilitation clients, professionals in the field of rehabilitation, and others. Professionals probably hold the most different and passionate opinions about what it is. Clients tend to seek skills and information they can put their hands on for their use and own circumstances. Independent travel to one client may not be the same to another. Professionals, also, can have vastly different views. They are more apt to define independent travel in terms of training, client base, skill levels, the dynamics of the employer, and in response to clients and their families. To travel is “to go or proceed on or as if on a trip.” Travel as a noun, then, is “the act of traveling” (Webster’s Collegiate Dictionary, 2002, p. 1252). Travel may be thought of, in a broad sense, as going from one place to a destination several blocks or miles away. But travel, as it is used in terms of O&M, is the act of moving or being moved even if the distance is short, say, from one room to another. The definition of independent reads “not subject to control by others, not requiring or relying on something else, not requiring or relying on others” (p. 590). The definition is, as it is supposed to be, the essential meaning of the word. A person or thing (conclusion, clause, or political party) is independent or is not. In everyday life, however, many decisions and movements are made that do not meet the dictionary definition of the word but are considered to be independent actions just the same.

A Definition of Independent Travel

For the purposes of this monograph, independent travel is defined as the ability to travel efficiently and comfortably when, where, and by the manner that one chooses to use in order to fulfill one’s personal life needs. The skills used will vary within each individual and will be influenced by the challenges of each environment traversed during the course of every day and throughout one’s lifetime. Within this definition, it is understood that safety is an inherent part of efficient travel.

The subject is independent travel. Consider for a moment how several individuals, with or without disabilities, travel to work. They may carpool, take buses, drive alone in a car, ride a bicycle, walk, or combine the options. It could be argued that some of them are not independently traveling to work. When pressed to compare their actions against the definition, they would probably admit to a brief or subtle variation in degree of independence; but they would make the argument that they are in control of what they do and that they are making their own choices and decisions about how they commute to work.

Those who are passengers in a carpool and those taking the bus temporarily rely on someone else to transport them to work. Perhaps this is their only option. Perhaps they could do it another way if they chose to or had the means to do so. At first glance, car drivers alone might seem to fit the definition of independence in western culture. These drivers are not controlled by a schedule to pick up other riders and are not impeded by most inclement weather. The drivers do, however, rely on their vehicles to carry them and are subject to a time schedule for leaving home and arriving at work. The drivers also have to comply with licensing, registration, insurance, and safety and traffic regulations. They must also pass physical and sensory tests to ensure the capacity to drive, as well as demonstrate the ability to drive safely. Like the bus riders and the carpool persons, they may or may not have other options. Bike riders also rely on machines and, depending on the locality, might have a licensing requirement, are expected to obey safety and traffic regulations, and even a lane restriction that dictates where they can ride. Bike riders may or may not choose to ride in different weather conditions. Perhaps they have no choice. Finally, there are the pedestrians. Pedestrians will be constrained by the distance to be traveled, the walking speed, and perhaps weather or physical ability. The environment may also place constraints on independence, such as a rural area which may offer little to no public transportation options. Like the drivers and bike riders, they are subject to leaving on time, an expectation that they will comply with pedestrian safety rules, and relying on traffic (or its absence) and whatever traffic/pedestrian controls are along the way to aid in getting to work. It is the extent or duration of control held or relinquished, willingly or not, the degree of reliance on other people or things, and the range of choices that are elements in the measure of a person's independence.

The National Institute on Disability and Rehabilitation Research (NIDRR), as part of its long-range plan, describes independent living in the following way:

Central to independent living is the recognition that each individual has a right to independence that comes from exercising control over his or her life, based on an ability and opportunity to make choices in everyday activities. . . . While independent living emphasizes independence, whatever the setting, by its very nature it is a concept that also promotes participation, especially in community settings. . . . At a philosophical level, independent living addresses the question of equity in the right to participate in society and share in the opportunities, risks, and rewards available to all citizens. (NIDRR, 1996, from <http://www.ncddr.org/rpp/ilcir/index.html>)

Central to the concept of independence and independent living is freedom. Central to independence and freedom is the ability to move about independently, safely, confidently, with

ease and spontaneity, using choice of mode or travel device. Kenneth Jernigan, past-president of the National Federation of the Blind (NFB) defined independence in respect to travel during a 1995 NFB conference in Dallas, Texas, when he stated

What is independence? . . . As to travel, independence is the ability to go where you want when you want without inconvenience to yourself or others. Probably none of us (blind. or sighted) ever fully achieves that goal all of the time, and almost all of us achieve at least some of it some of the time. Most move back and forth through a continuum. (Available from <http://www.blind.net/bpg00004.htm>, p. 12)

There are four important elements included in Jernigan's (1995) definition of independent travel.

1. Where one wants to go: Destinations of choice, be that across a room, around the block, commuting to and from work, traveling for pleasure or work, or around the world.
2. When one wants to go: Time choice, moving and traveling when one desires or needs to move, not needing to wait for someone else to make it possible. Sometimes our travel depends on others, such as bus drivers or airline pilots, and schedules. Such travel may require advanced planning, reservations, or others to move the traveler physically. The when involves spontaneity. Spontaneity is the ability to travel at a moment's notice. When an individual has the skills to travel, to walk or use a wheelchair or scooter, to self-familiarize to unfamiliar environments, then one is able to go when and where one wishes. Spontaneity can be hampered for those who do not drive when longer distances are involved. Public transportation needs to be available and running. Once removed from urban centers, options diminish. For those who are blind or visually impaired, spontaneity is a quality of travel that may be limited when beyond walking distances are involved.
3. Without inconvenience to self or others: Most people depend on others for some aspects of travel, such as cab drivers, pilots, and navigators for air travel, or others in the commercial travel business. People also choose whether to travel alone or with others, as do individuals who are blind or visually impaired, who may choose to travel alone, along with others, or to be guided by another person or a dog guide.
4. Choice of manner of travel: Choice of how the travel will be achieved. These options vary for individuals and include walking, driving, biking, flying, public or private transportation, such as buses, subways, cabs, or use of a travel device, such as a long cane, wheelchair, scooter, dog guide, electronic mobility device, global positioning system, etc. The manner of travel is part of one's individual expression of choice. It is an individual's right to have informed choice and to be able to make decisions based on informed choice. Choosing whether to use a car or a bus, a plane or a train, rigid or folding cane, a long cane or a dog guide is an expression of informed choice and independence. One of the many benefits of living in a free society is the right of choice. One type of travel device, such as a cane, may suit an individual; others may choose optical devices or dog guides, while many will choose to be flexible and use different types of travel devices as different situations arise. The same

holds true for travelers who are blind or visually impaired. They have a right to information on all types of devices that may enhance their travel abilities.

O&M instructors must have sufficient knowledge of the available options in order to provide objective information. Further, it is critical that O&M instructors assess and observe students and clients before discussing travel device options. Travel devices may include but not be limited to: long canes made of various materials, having various cane tips and/or grips, folding or collapsible canes, dog guides, electronic devices such as global positioning systems or those designed specifically for travelers who are blind, and low vision devices for those who can benefit from their use (Corn & Koenig, 1996; Geruschat & Smith, 1997; Griffin-Shirley, Trusty, & Rickard, 2000; Kapperman & Koenig, 1996; Smith & Geruschat, 1996; Pogrund & Rosen, 1989).

Elements Jernigan did not mention in his definition of independent travel, which are also important to include, are:

1. **Safety:** The importance and desire to travel without mishap. Regardless of when, where, or manner, it is critical that travel be safe. For it to be so, travel skills need to be learned. When children exhibit sufficient maturity, they learn how to cross streets safely. Drivers learn not just how to operate vehicles but also the rules of the road and defensive driving skills as a baseline for safe motoring. Individuals who are blind or severely visually impaired need to learn how to travel safely, whether using a cane, dog guide, optical device, electronic device, or combination thereof. Safety and orientation are criteria for efficient travel and reliable orientation skills.
2. **Sensory awareness and sensory integration skills:** Sensory awareness and sensory integration skills are critical to orientation for individuals who are blind or visually impaired. These are needed in familiar areas but are essential to familiarizing with unfamiliar areas. These skills, along with understanding spatial and environmental concepts, are integral to one's ability to self-familiarize to newly traveled areas, be they hotels, places of employment, neighborhoods, schools, or major urban centers.
3. **Self-orientation:** The ability to interpret and organize environments so one understands them and travels within them. Self-orientation is critical to comfort, efficiency, and independence. Most travelers, sighted, blind, or visually impaired, feel more comfortable traveling in familiar areas. This is only natural. When traveling in familiar areas, generally, people are more at ease than when traveling in areas that are unfamiliar. In familiar areas, landmarks, intersections, traffic patterns, relative distance to destinations, and hazards, such as potholes and hidden driveways, are known; although new hazards may appear at any time. This generally results in a more confident frame of mind in contrast to traveling in unfamiliar areas. In familiar areas, concerns about the possibility of getting lost or misjudging the potential dangers are diminished or eliminated.

Self-orientation is the ability to utilize all of the skills that one has in order to learn about new areas and organize them in a meaningful way while maintaining one's safety. The ability to self-orient is also crucial to traveling efficiently. Travel is efficient when the desired result,

the arrival at a location with, perhaps, stops along the way, is accomplished with minimum effort, expense, and waste of time and energy. The ability to interpret and organize the environment enables the individual to focus on important features or potential problems. Attention can then be concentrated where it is most needed. The same ability provides the individual with information to make an informed choice about when and by what means to travel, or whether to do so or not. The ability to travel while self-orienting oneself is the manifestation of a true independent traveler. This is not to say that individuals may not wish to ask someone else to orient them to a complex environment. All people use some means to orient themselves to new areas. This may mean using a map, a directory, other people's directions, or a guided tour. However, it is only when one (a) has the ability to take what is known about environments and apply that knowledge to new areas; (b) has the ability, moment to moment, to interpret sensory information and use that information to travel within it; and (c) does not need to be oriented to new environments by another human being, that the individual has the skills required by our complex world to be an independent traveler. Every blind and visually impaired individual should be given the learning opportunities to become an independent traveler. Every blind and visually impaired person should be given the opportunities to choose the manner by which they accomplish independent travel through informed choice.

4. Comfort and ease: These elements depend on many personal factors having to do with perceived safety, familiarity, orientation, cognitive ability, sensory awareness and integration, confidence, skill, self-orientation, and the belief in one's abilities.

All of these eight elements lead one to become an independent traveler, as defined earlier in this chapter as the ability to travel efficiently and comfortably when, where, and by the manner that one chooses to use in order to fulfill one's personal life needs. The skills used will vary within each individual and will be influenced by the challenges of each environment traversed during the course of every day and throughout one's lifetime. The student or client is always the central focus of O&M instruction. The individual must be central to designing the overall O&M individualized plan and lesson to optimize each student's or client's potential.

Cane Travel: A Critical Tool to Independent Travel for Blind Travelers

There is much to learn before one is able to be an independent traveler. Hill and Ponder (1976) defined orientation as “. . . the process of using the remaining senses to establish one's position and relationship to all other significant objects in one's environment” (p. 3); and mobility as “the capacity, the readiness, and the facility to move” (p.115). These statements are simple and direct in describing very complex activities that facilitate independent travel. Foulke, a well-known and respected researcher and independent world traveler who was blind, studied cognition and perception and frequently wrote about the importance of previewing environments and the cognitive and perceptual basis for navigation and mobility (Barth & Foulke, 1979; Foulke, 1971, 1972, 1982, 1985). Foulke characterized the long cane as a perceptual tool, an instrument to provide information about the immediate environment, to serve as an obstacle detector and provide information about what was within the cane's reach. However, Foulke stressed the importance of the mind and the ability to use the senses to interpret and spatially organize environments for the purpose of maintaining or self-orientation. His personal experiences as well

as his research enabled him to conclude that there is a very broad range of individual differences in mapping skills of blind individuals (Hollyfield & Foulke, 1983). Therefore, when thinking about O&M instructors, it is important to think of their responsibilities to their students and clients as going far beyond cane techniques, or the manner in which a cane is used to determine obstacles in one's path or the presence of a drop-off, such as a curb or flight of steps, or how to get tactual information from the cane. Cane use and manipulation is a small part of what a blind or visually impaired traveler needs to do to be oriented. Therefore, in addition to cane skills, the O&M instructor must be prepared to effectively assess, plan, support, and teach many sensory, perceptual, cognitive, spatial, environmental, and problem-solving concepts and skills that lead to the ability to self-orient.

Children who are blind or visually impaired have the same independent travel needs as their sighted peers. Every effort should be made to provide the early intervention and mobility concept development opportunities as soon as possible, so children who are blind or visually impaired will experience parallel levels of travel independence with their classmates. Children who are blind from birth or before visual memory has been established will learn about their environment through their other senses. They should receive direct services from an O&M instructor as early as possible, and their parents or caregivers should be involved in the early intervention efforts. The importance of early intervention is recognized and supported in western society. The "significance of early intervention in the lives of young children with disabilities has been established over the past decade" (Pogrud & Fazzi, 2002, p. 2). Working not only with the children but also with their families is critical and has been found to be the most important factor in early childhood intervention (Carnegie Corporation, 1994; Mahoney, Boyce, Ferrell, Spiker, & Wheeden, 1998). Some of the curricular areas that should be addressed to facilitate a child's development for a future of independent mobility include, but are not limited to, sensory development (all the senses the child has); sensory integration; object permanence, cause and effect, body image and concepts; concept development; spatial concepts and relationships; environmental concepts, self-initiation; problem solving; fine and gross motor development; communication, self-help, and socialization skills; purposeful movement; relationship of self to objects; mapping skills; environmental awareness of home, school, and community; mobility, problem-solving, and cane skills; and adaptive mobility devices, if needed (Anthony, Bleier, Fazzi, Kish, & Pogrud, 2002).

Assessment, Instruction, and Evaluation

An individually designed instructional program in the area of special education and rehabilitation is a fundamental right and is mandated through federal law and state guidelines. If O&M instructional programs are to be appropriate, they must be based on individual assessments in concert with respectful consideration and appreciation for each student's needs, desires, potential, and choices. This is a complex process that approaches individuals with recognition of their life experiences, culture, abilities, additional disabilities, intelligence, motivations, expectations, choices, and goals. With this being said, it is the O&M instructors who are responsible for providing appropriate O&M assessments, individualized planning and instruction, family support, professional consultation, and community education (Blasch, Wiener, & Welsh, 1997; Jacobson, 1993; LaGrow & Weessies, 1994).

Most individuals who are blind or severely visually impaired should be participants in an individualized O&M program at some point during their lives. The following list is not intended as a checklist, nor is it presented in a developmental manner, but it does represent some of the major areas of O&M assessment, instruction, and evaluation that may be included to facilitate individuals who are blind or visually impaired to become independent travelers who are able to maintain orientation or orient themselves to unfamiliar environments.

- Sensory awareness and auditory skills, including recognition; identification; localization; tracking; tracing; stationary and moving direct, indirect, reflected sounds; sound selectivity; sound discrimination; and interpreting the environment based on auditory perceptions
- Tactual skills, including textures, travel surfaces, gradient changes, haptic perception, thermal change recognition, and air pressure changes
- Olfactory (sense of smell) skills
- Gustatory (sense of taste) skills
- Vestibular (sense of balance) skills
- Kinesthetic and proprioception (internal muscle awareness and memory) skills
- Low vision utilization skills
- Visual efficiency skills
- Utilization of low vision devices
- Sensory integration
- Obstacle detection
- Gross motor skills
- Sighted guide
- Basic self-protective techniques
- Long cane indoor and outdoor travel skills, including diagonal, touch, touch and slide, touch and drag, constant contact, and three-point touch techniques
- Cane types, styles, selection, and preferred length determination; familiarity with various cane tips and grips; applications for different circumstances; and selection criteria and personal choices
- Cane skills and obstacle and drop-off detection
- Body awareness and identification
- Spatial concepts
- Environmental awareness, concepts, and identification
- Directionality, laterality, and compass directions
- Spatial mapping skills
- Tactually determined mapping skills
- Recovery
- Information gathering, problem solving, and discovery learning skills and strategies
- Verbal and nonverbal communication skills
- Daily living skills
- Intersection and roundabout analysis, shapes, control, sizes, and directionality
- Street crossing skills with various controls, including stop-sign, light, actuated audible traffic signal, and uncontrolled
- Residential travel
- Small- and medium-sized business area travel

- Strategies for self-orientation and soliciting accurate directions from the public and other assistance, when desired
- Strategies for refusing unsolicited and unwanted assistance from the public
- Public transportation skills, including buses, subways, etc.
- Indoor/outdoor travel (home, school, work areas); complex areas, such as public transportation terminals, department stores, and shopping malls, including stairs, moving walkways, escalators, manual and powered revolving doors, and elevators
- Metropolitan travel
- Train and subway travel
- Suburban and rural travel
- Skills to qualify for dog guide training
- Dog guide use
- Adaptive canes and use
- Electronic mobility device evaluation, selection, and use
- Specialized strategies, if experiencing multiple disabilities, deaf-blindness, brain injury, cognitive delays, etc., and
- Driving with low vision and low vision devices (Blasch et al., 1997; Fazzi & Petersmeyer, 2001; Geruschat & Smith, 1997; Griffin-Shirley, Trusty, & Rickard, 2000; Hill & Ponder, 1976; Jacobson, 1993; Knott, 2002; LaGrow & Weessies, 1994; Peli & Vargas-Martin, 2002; Poggrund & Fazzi, 2002; Poggrund & Rosen, 1989; Poggrund, 2002; Uslan, Peck, Wiener, & Stern, 1990; Willoughby & Monthei, 1998).

Building Confidence

In order to achieve the greatest degree of independence possible, students and clients need the opportunity to develop proficiency in the skills unique to those needed by persons with low vision and blindness. Some of these skills may include O&M, Braille, specialized technological equipment, etc. At the same time, they need to gain confidence in the skills as an effective supplement to low vision and an alternative to vision, if totally blind. Most important, students and clients develop their sensory skills to the extent that they firmly believe in their ability to use all available senses to function independently and confidently. This takes time. When it works properly, it is a collaborative effort involving the students, family, or others close to them, rehabilitation professionals, and members of the blind or visually impaired community who serve as role models and can be a valuable information resource (Blasch et al., 1997; Huebner, Prickett, Welch, & Joffe, 1995; Poggrund & Fazzi, 2002; Fazzi & Petersmeyer, 2001).

Lessons are developed and taught in a developmental and sequential manner. This enables students to learn new skills while practicing and reinforcing skills already learned, such as sensory integration, problem solving, cane, low vision devices, and self-orientation. Such a framework provides them many opportunities to develop not only skills but also critical self-confidence. They are provided many opportunities to apply learned skills to new environments and to apply their range of skills, talents, and cognitive abilities to self-familiarize themselves with similar but new environments. These opportunities must be substantial in order to facilitate confidence building through the students' own experiences. It is through successful transfer of skills and positive experiences that the belief in abilities to independently travel will be secured.

With self-confidence, unimaginable heights can be reached; without self-confidence, even simple tasks will be beyond reach (Hill & Ponder, 1976; Blasch et al., 1997).

Additional Considerations for the Deaf-Blind or those with Multiple Impairments

In the United States, there are approximately 10 million blind and visually impaired people. The vast majority is elderly, and less than 10% of the blind and visually impaired persons are under the age of 20. Approximately 93,600 visually impaired or blind students, 10,800 of whom are deaf-blind, are receiving special education programs (American Foundation for the Blind, 2003; Kirchner, 1990; Corn, Ferrell, Spungin, & Zimmerman, 1996). These additional disabilities may include, but are not limited to, chronic health conditions, neurological impairments, orthopedic impairments, cognitive and developmental delays, hearing impairment as well as deaf blindness, autism, and learning disabilities.

In the United States, there are approximately 5.5 million elderly (ages 65 and older) individuals who are blind or visually impaired (American Foundation for the Blind, 2003). The 85+ age group is the fastest-growing segment of America's population. The proportion of the 85+ age group in the U.S. population has grown by 40% since 1980; the number of persons aged 85+ has more than doubled since 1965 and is expected to increase from 3.8 million in 1996 to 8.5 million in 2030 (Orr, 1998). At least, 50% of blind or visually impaired persons who are elderly have additional disabilities. These additional disabilities are most likely to be arthritis, hypertension, heart disease, diabetes, hearing impairments, and others that will require modification in basic O&M skills.

The youngest and the oldest segments of the population of individuals who are blind or visually impaired are the most rapidly increasing segments. Each blind or visually impaired individual must be assessed as an individual and all strengths and potential seriously considered. In addition, the professional team working with a deaf-blind or a multiple-impaired blind individual expands as the numbers of different types of impairment increase. Team and collaboration skills will be critical to assess, design, and implement the most appropriate rehabilitation program possible.

Knott (2002) notes

Teaching students who are blind or visually impaired and have additional disabilities draws upon the deeper reserves of knowledge and creativity of an orientation and mobility specialist. All students are different, and the presence of additional disabilities increases their individual uniqueness. No single formula exists that can be neatly applied to the broad spectrum of students with visual and multiple disabilities. (p. 159)

The goal is always for blind or visually impaired individuals to reach their full potential and desired level of independent travel. For most, this is the ability to travel efficiently and comfortably when, where, and by the manner that one chooses to use in order to fulfill one's personal life needs. These skills will vary within each individual and will be influenced by the challenges of each environment traversed every day and throughout one's lifetime.

While each O&M program must be designed to meet the unique needs of the student who has multiple disabilities, some general teaching principles serve as resources from which O&M specialists may draw when working with students who have cognitive or developmental delays. Some of these principles and strategies used by teachers and students in the learning process may include the following:

- Application of task analysis, scaffolding, shaping, forward and reverse chaining, fading strategies
- Embedding skills within the context of natural daily routines or when the activity actually occurs
- Teaching and learning in natural environments under natural conditions
- Teaching and learning immediate or critical needs
- Teaching and learning task discrepancy analysis
- Using real and functional learning activities and natural cues
- Tailoring prompts to the individual learner and using a prompting hierarchy
- Teaching and learning sequentially and building on past learning
- Providing and receiving appropriate and meaningful reinforcement
- Teaching and learning through active learning experiences
- Providing consistency and adequate repetitions
- Practicing collaborative approaches
- Thoroughly teaching and learning concepts to encourage the ability to transfer knowledge to new situations
- Teaching and learning problem solving, and
- Having high expectations for all students and clients regardless of severity of disabilities (Corn & Koenig, 1997; Knott, 2002; Fazzi, 1998; Dote-Kwan, 1995; Bailey & Head, 1993; Joffe & Rikhye, 1991; Huebner et al., 1995).

In addition, Sauerburger (1998) states that the O&M instructor needs to assist deaf-blind clients with street crossings in the following ways: (a) evaluate when the student/client cannot hear and/or see well enough to know when it is clear to cross; (b) decide whether they are willing to take the risk of crossing alone in situations where they cannot detect traffic; (c) teach strategies for obtaining assistance or planning alternate routes for those situations where the student/client does not wish to risk crossing alone; and (d) teach the client//student how to judge when it is safe to cross and then how to complete the crossing at intersections with traffic signals where the client/student can hear or see the traffic well enough or feel or see the traffic signal.

O&M specialists frequently work collaboratively with physical and occupational therapists when serving students/clients who use ambulatory aids. Ambulatory aids may include the use of wheelchairs, walkers, crutches, or support canes (Pogrund, Healy, Jones, Levack, Martin-Curry, Martinez, Marz, Roberson-Smith, & Vrba, 1993; Rosen, 1997). Knott (2002) provides information regarding O&M assessment and instruction for students who use wheelchairs, as well as the care and maintenance of wheelchairs. Useful tips for transfers and previewing training environments need to be included for individuals using wheelchairs. The long cane can be successfully combined with manual wheelchair use for some students as an effective tool for clearing the travel path. Some users of wheelchairs may need to learn to use their vision more

efficiently and effectively in order to independently travel in indoor and outdoor environments. Other persons who use wheelchairs may benefit from attaching curb feelers to maintain selective contact with trailing services, and still others may benefit from using electronic devices mounted on the wheelchair frame to give information that is useful for shore-lining and detecting drop-offs. Regardless of whether or not the individual will ultimately be independent or semi-independent in the use of the wheelchair, orientation skills can be addressed to assist the student in optimizing independence and participation in daily routines and travel experiences with others. Too often, individuals who use wheelchairs are moved about without active involvement with their environment. To be able to direct a companion to where they want to go, individuals using wheelchairs need to be aware of their environments. In addition, many individuals who use wheelchairs are able to propel themselves and need to maintain their orientation or use directions from the public to reach their desired objectives.

O&M specialists also work with non-verbal students, and Knott (2002) provides an overview of potential communication systems that can be incorporated within O&M lessons, including tangible symbols, object cues, message cards, and electronic communication systems. Lolli and Sauerburger (1997) also discuss communication techniques such as sign language, pre-printed messages (refreshable) Braille, and interpreters that can be successfully used when working with students who are deaf blind. *Hand in Hand* (Huebner et al., 1995) provides a comprehensive resource for communication and teaching approaches for O&M for students who are deaf-blind.

Flexibility and creativity are key to teaching students/clients who are deaf-blind, as Sauerburger (1993) suggests: “The instructor keeps in mind the principles and rationale behind the techniques being taught and adapts them to suit each individual’s needs” (p. 6). “Skills that provide the safest and most efficient means for assisting students moving purposefully in meaningful environments should receive absolute priority” (Fazzi, 1998, p. 453). Also, skills that promote successful participation in home, school, or community activities should also be prioritized. Together with family and colleagues, the O&M specialist works collaboratively to effect an appropriate and meaningful learning experience for students and clients. The following sections regarding three individuals with varied experiences and needs demonstrate some differences in individual O&M programs based on assessment, interviews, observations, previous instruction, life experiences, types of visual and other impairments, as well as student/client informed choice.

Akfir

Akfir is a 16-year-old student who is severely multiple-disabled due to brain injury. He uses a wheelchair and has visual hemianopsia resulting in bilateral left quadrant field loss in eyes, mild hearing loss, speech articulation difficulties, and brain injury. Akfir was born multiply disabled and has received special services throughout his school years, both in Saudi Arabia, where he was born, and in Kansas, where he has lived for the past 10 years. The mobility instructor would be working closely with the other members of the educational team. The team would most likely consist of Akfir, a speech or communication specialist, a physical therapist, regular and special education teachers, Akfir’s parents, a transition specialist, and a rehabilitation counselor from adult services, to name a few. There is also a strong likelihood that he would benefit from visual awareness and visual efficiency training (Verlander, Hayes, McInnes, Liddle, Liddle, Clarke,

Clark, Russell, Ferguson, & Walsh, 2000; Fisk, Novack, Mennemeier, & Roenker, 2002; Freeman & Jose, 1996; Padula & Shapiro, 1993).

Because of his brain injury, he may have any number of learning difficulties, and a variety of strategies would be implemented by the team to encourage effective learning. These strategies would be an integral part of his educational and therapeutic programs. Research supports the premise of the importance of repeated practice and functional activities for individuals who cannot recognize and compare options and demonstrates that instruction can have a successful outcome for individuals with severe and multiple disabilities (Chen & Smith, 1992). Akfir may be traveling independently in familiar indoor areas as well as outdoors in his home community. To accomplish this, Akfir may have been taught to visually scan to compensate for the left hemianopsia along with utilizing vibro-tactile signals emitted from the electronic devices mounted on his motorized wheelchair. He may be able to travel independently on sidewalks and cross streets using his hearing and vision, or he may need assistance from the public. Because of his speech difficulties, he may also need to use assistance cards or other supportive communication devices (Gervasoni, 1996). He may use a special school bus equipped with a wheel chair ramp; or, if within a reasonable distance from school, he may travel independently to and from school.

Akfir participates and makes O&M decisions and, in some situations, will be totally in charge of his own mobility. He will learn to use public transportation in his community. He should be provided with all of the possible instruction to enable him to be as independent as he wishes and is able to be.

Carmen

Carmen is a newly-blinded 35-year-old marketing specialist who gradually lost her vision due to an unknown cause. She is able-bodied and totally blind. She works for a National Hispanic health magazine in a major urban center and lives in a large Hispanic community. Her husband is the owner of a very well-known, upscale Hispanic restaurant. Her primary language is Spanish; however, she does speak some English. She is originally from Cuba. Carmen may attend a center-based rehabilitation program or receive community-based services. She will need many services that will address all of her personal adjustment, communication, technology, mobility, daily living skills, home and financial management skills, etc. She is a very strong, determined, accomplished and motivated young woman.

Upon receiving a complete O&M assessment, including interviews with Carmen and her husband, and observations of her within her home and while walking with her in her immediate community, it was determined that her mobility concepts are excellent, but she demonstrates a lack of trust in her other senses, does not know how to effectively use her sense of hearing, touch, or smell for travel purposes, and is extremely fearful but determined to move about independently. She stated that she loves dogs and wants to go through a complete rehabilitation program; but, upon completion, she wants to go to a dog guide school for training and a dog. She has done a national search for dog guide schools, has called many, and has already selected the one to which she wants to apply. The dog guide school representatives have told her that they strongly recommend that she go through a personal adjustment training program that includes a

complete O&M course, as it will help her learn needed orientation, spatial awareness, and sensory skills needed for accomplished dog guide users. Because Carmen is in a hurry to return to her job and to attend a dog guide school, she and her counselor decide that she would prefer attending a center-based program. Attending one of the only center-based programs in her state will require that she leave home and reside at the center for approximately 10 to 15 weeks. Although her family is unhappy about this, she would receive O&M and other personal adjustment skill training full-time, five days a week. If she received community-based O&M, the rehabilitation agency informed her that she would only have O&M services once or twice a week and rehabilitation training once a week. She is determined to get as much training as quickly and thoroughly as she can and has decided to attend the center-based training program as soon as there is an opening,

While attending the center-based program, Carmen will learn to travel in all environments using a long cane. She will also receive instruction in sensory skill development and integration and problem solving. She will learn to travel in areas, such as residential, all types of business, suburban, rural, and metropolitan, and have many opportunities to apply her skills in unfamiliar areas. Carmen will learn to orient herself to new environments and travel through the simplest and most familiar environments to the most challenging and unfamiliar environments.

Mrs. Stepnowski

Mrs. Stepnowski an 85-year-old retired dress shop owner has diabetes, diabetic retinopathy, diabetic neuropathy, severe inoperable cataracts, and osteoporosis. She lives with her husband in the apartment behind her store (which her granddaughter now owns) in a medium-sized business district. It was determined through assessments, observations, and interviews that Mrs. Stepnowski wishes to be as independent as possible, but her goals are not quite as extensive as Carmen's. Mrs. Stepnowski wants to be able to travel independently in her community. She is well-known and is able to fulfill most of her daily needs within the community. Her butcher, produce market, bank, dry cleaners, cobbler, pharmacy, and most of her physicians are within walking distance; and she still enjoys walking. She also has stated that she would like to shop independently at a nearby mall while her husband sits and people-watches, which was the way they had conducted themselves at the local mall. It was his *job*, as Mrs. Stepnowski puts it, to get her there and back; but, while she is there, she states, "I am on my own." Since her vision has become progressively worse, her husband has walked with her while she shops, which neither of them enjoys. She also wants to go to church for early daily services, and her husband has never joined her and does not want to start now. For the past several months, her husband has walked with her to church and then returned to walk her back home. But as she states, "I love my husband more than life itself, but he grumbles all the time and takes the joy out of it. I just want to go alone, like I have been doing for 65 year of my married life." Mrs. Stepnowski's needs are different from Carmen's or Akfir's, but they are just as important to her independence and self-esteem. Mrs. Stepnowski, therefore, will receive an O&M program tailored to her needs, physical stamina, and abilities. She has received regular and thorough medical care and monitoring for her diabetes and other physical complications. Her physical stamina is reported to be above average for her age and medical status, and her diabetes is in excellent control, except during holiday seasons. The O&M instructor who conducted her O&M assessment has thoroughly reviewed her medical records, with Mrs. Stepnowski's permission. Actually, Mrs.

Stepnowski offered the O&M instructor, during the interview and assessment process, full access to a binder in which she keeps all of her medical reports and blood work reports from her physician and endocrinologist.

She could go to a center-based program but says she will not, because she does not want to leave home. Therefore, she will receive services in her home and home community through the state agency's outreach program. She should receive an O&M program that will address her safety, use of the cane, use of her senses and sensory integration, and problem-solving skills to enable her to travel throughout her home community and within malls. The skills she learns to accomplish this travel should be transferable to any similar types of areas. When Mrs. Stepnowski achieves her goals, it is quite possible that she will want to revisit and expand her goals. For example, she may want to learn to take the bus to the mall. If this is the case, then instruction should be provided to accommodate broadened goals. Research by Long, Boyette, and Griffin-Shirley (1996) has demonstrated that many older adults ". . . said they would travel independently if they had to, but that they preferred to go with someone, probably for social contact as well as for feelings of greater safety" (p. 311). Informed choice must be a part of any individual's mobility program, and Mrs. Stepnowski will be better able to have informed choice after she has learned how to independently travel in the areas she first identified as being important to her. She may also feel that her needs have been met when she achieves those original goals.

The important aspects of all student and client travel are that they know they can travel at the most independent level possible for them, that they can participate actively in their travel, and that they can become confident in their respective abilities. The population of individuals who are blind or visually impaired is highly diverse. Independence may have different meanings, be expressed and realized differently among these three individuals, and this must be respected by the O&M instructor.

Summary

People who are blind or visually impaired are as capable of independent travel as are sighted people. Travel is not inherently difficult, but there are a number of skills the individual must learn and practice, or reinforce if already learned, to become an independent traveler. The importance of developing confidence in the ability to use the skills cannot be overstated. Without a confident attitude, skills are of little use.

Appropriate instruction in travel recognizes the variances among individuals. It strives to help them reach their full potential and desired level of independence, and it provides opportunities for individuals to make informed decisions about the manner in which travel will be accomplished. Appropriate instruction goes beyond the use of a cane or other travel devices to include, as needed, the teaching of sensory, problem solving, and other skills.

Recommendations

- Blind and visually impaired individuals should participate in comprehensive O&M assessments that include their experiences, motor, physical, sensory, and other relevant
-

abilities. O&M instructors, upon completion of a comprehensive O&M assessment, should design individualized O&M programs of instruction responsive to the needs, abilities, and desires of the individual. Individuals should be given all necessary opportunities and instruction to reach their highest level of independent mobility.

- It is recommended that instruction in the use of the long cane be the first consideration as an instrument for mobility, unless the student's or client's needs require an alternative, such as a motorized wheelchair, walker, etc.
- O&M instructors should subscribe to the belief that although the long cane is a useful instrument to be used to detect obstacles, their responsibilities reach much further than teaching cane skills. They must teach sensory, perceptual, cognitive, and problem-solving skills to facilitate their students' need to successfully self-orient themselves to unfamiliar environments.
- It is recommended that O&M instructors teach to the outcome of maximizing each blind or visually impaired person's ability to achieve. Further, upon completing O&M instruction, the independent traveler will be able to choose travel destinations; travel as spontaneously as possible; travel without inconveniencing others; use informed choice to self-select the manner of travel; travel safely and efficiently; use and integrate the use of the senses to their optimum ability; self-orient using cognitive, problem-solving, sensory, discovery learning, and structured discovery learning skills and methods; and travel with comfort and ease.
- O&M instructors should have basic skills to effectively teach blind and visually impaired persons who have additional disabilities. This will include working with transdisciplinary team members, such as occupational, physical, or speech therapists, interveners, interpreters, etc. O&M instructors will have fundamental knowledge and skills with alternative communication methods and basic knowledge of skills and strategies to teach the full range of the population from infants to the elderly.
- The U.S. Department of Education, Office of Special Education and Rehabilitative Services, Office of Special Education Programs and the Rehabilitation Services Administration needs to recognize the critical shortage of O&M personnel preparation programs and substantially increase its funding to existing O&M personnel preparation programs. This would better enable them to provide not only support for students but also for additional O&M faculty. The requirement for 75% of granted funds to go for student support should be lifted so that universities can use more of the funding to support O&M faculty.

Acknowledgements

The authors wish to thank the following individuals for reviewing this chapter and providing helpful suggestions: Gregory Goodrich, Ph.D. U.S. Department of Veteran Affairs and School of Optometry at the University of California at Berkeley; Dona Sauerburger, AER Orientation and Mobility Division Past Chair; Grace Ambrose, AER Orientation and Mobility Division Chair; and all those who participated in the National IRI Forum.

References

- American Foundation for the Blind (2003). Quick facts and figures on blindness and low vision. New York: AFB from <http://www.afb.org/ingo-document-view.asp?documentid=1374>.
- Anthony, T., Bleier, H., Fazzi, D. L., Kish, D., & Pogrud, R. L. (2002). Mobility focus: Developing early skills for orientation and mobility. In R. Pogrud & D. Fazzi (Eds.), *Early focus: Working with young children who are blind or visually impaired and their Families* (2nd ed., pp. 326-404). New York: AFB Press.
- Bailey, B. R., & Head, D. N. (1993). Orientation and mobility services to children and youth with multiple disabilities. *RE: view*, 25(2), 57-66.
- Barth, J., & Foulke, E. (1979). Preview: A neglected variable in orientation and mobility. *Journal of visual impairment and blindness*, 73, 41-46.
- Blasch, B., Wiener, W., & Welsh, R. (Eds.). (1997). *Foundations of orientation and mobility* (2nd ed.). New York: AFB Press.
- Carnegie Corporation of New York (1994). *Starting points: Meeting the needs of our youngest children*. New York: Author.
- Chen, D., & Smith, J. (1992). Developing orientation and mobility skills in students who are multihandicapped and visually impaired. *RE: view*, 24, 133-139.
- Corn, A., Ferrell, K., Spungin, S., & Zimmerman, G. (1996). *What we know about teacher preparation programs in blindness and visual impairments*. Paper prepared for the NASDSE Policy Forum, Training Educators to Work with Students Who are Blind or Visually Impaired, Washington, DC.
- Corn, A. L., & Koenig, A. J. (Eds.). (1996). *Foundations of low vision: Clinical and functional perspectives* (p. 474). New York: American Foundation for the Blind.
- Dote-Kwan, J. (1995). Essential steps for getting started. In D. Chen & J. Dote-Kwan (Eds.), *Starting points: Instructional practices for young children whose multiple disabilities include visual impairment* (pp. 29-42). Los Angeles: Blind Children's Center.
- Fazzi, D. L. (1998). Facilitating independent travel for students who have visual impairments with other disabilities. In S. Z. Sacks & R. K. Silberman (Eds.), *Educating students who have visual impairments with other disabilities* (pp. 441-468). Baltimore: Paul H. Brookes.
- Fazzi, D. L., & Petersmeyer, B.A. (2001). *Imagining the possibilities: Creative approaches to orientation and mobility instruction for persons who are visually impaired*. New York: AFB Press.

- Fisk, G. D., Novack, T., Mennemeier, M., & Roenker, D. (2002). Useful field of view following traumatic brain injury. *Journal of Head Trauma Rehabilitation, 17*, 16-25.
- Foulke, E. (1971). The perceptual basis for mobility. *American Foundation for the Blind Research Bulletin, 23*, 1-8.
- Foulke, E. (1972). Sensory supplementation: Navigation and orientation. In M. D. Graham (Ed.), *Science and blindness: Retrospective and prospective* (pp. 125-135). New York: American Foundation for the Blind.
- Foulke, E. (1982). Perception, cognition, and the mobility of blind pedestrians. In M. Potegal (Ed.), *Neural and developmental bases of spatial orientation* (pp. 55-76). New York: Academic Press.
- Foulke, E. (1985). The cognitive foundations of mobility. In D. H. Warren & E. R. Strelow (Eds.), *Electronic spatial sensing for the blind* (pp. 463-486). Dordrecht, Netherlands: Martinus Nijhoff.
- Freeman, P. B., & Jose, R. T. (1996). Enhancing decreased sight of patients with traumatic brain injury. *NeuroRehabilitation, 6*(3), 203-212.
- Gervasoni, E. (1996). Strategies and techniques used by a person who is totally deaf and blind to obtain assistance in crossing streets. *RE: view, 28*, 53-58.
- Griffin-Shirley, N., Trusty, S., & Rickard, R. (2000). Orientation and mobility. In A. Koenig & M. C. Holbrook (Eds.), *Foundations of education instructional strategies for teaching children and youths with visual impairments* (2nd ed., Vol. II, pp. 527-568). New York: AFB Press.
- Geruschat, D., & Smith, A. (1997). *Low vision and mobility*. In B. Blasch, W. R. Wiener & R. L. Welsh (Eds.), *Foundations of orientation and mobility* (pp. 60-103). New York: American Foundation for the Blind.
- Hill, E., & Ponder, P. (1976). *Orientation and mobility techniques*. New York: American Foundation for the Blind.
- Hollyfield, R., & Foulke, E. (1983). The spatial cognition of blind pedestrians. *Journal of Visual Impairment and Blindness, 77*, 204-210.
- Huebner, K. M., Prickett, G., Welch, T. R., & Joffee, E. (Eds.). (1995). *Hand in hand: Essentials of communication and orientation and mobility for your students who are deaf blind*. New York: AFB Press.
- Jacobson, W. H. (1993). *The art and science of teaching orientation and mobility to persons with visual impairments*. New York: AFB Press.

- Joffe, E., & Rikhye, C. H. (1991). Orientation and mobility for students with severe visual and multiple impairments: A new perspective. *Journal of Visual Impairment & Blindness*, 85(5), 211-216.
- Jernigan, K. (1995). *The nature of independence*. The Annual Convention of the National Federation of the Blind, Dallas, Texas, Tuesday, July 6, 1993, from <http://www.blind.net/bpg00004.htm>.
- Kirchner, C. (1990). Trends in the prevalence rates and numbers of blind and visually impaired schoolchildren. *Journal of Visual Impairment & Blindness*, 84(9), 478-479.
- Knott, N. I. (2002). *Teaching orientation and mobility in the schools: An instructor's companion*. New York: AFB Press.
- LaGrow, S., & Weessies, M. (1994). *Orientation & mobility: Techniques for independence*. Palmerston North, New Zealand: The Dunmore Press Limited.
- Lolli, D., & Sauerburger, D. (1997). Learners with visual and hearing impairments. In B. B. Blasch, W. R. Weiner & R. L. Welsh (Eds.), *Foundations of orientation and mobility* (2nd ed., pp. 513-529). New York: AFB Press.
- Long, R., Boyette, L., Griffin-Shirley, N. (1996). Older persons and community travel: The effect of visual impairment. *Journal of Visual Impairment and Blindness*, 90, 302-313.
- Mahoney, G., Boyce, G., Ferrell, R. R., Spiker, D., & Wheeden, C. A. (1998). The relationship of parent-child interaction to the effectiveness of early intervention services for at-risk children and children with disabilities. *Topics in Early Childhood Special Education*, 18, 5-17, from <http://www.responsiveteaching.org/Research/p-ceinew.pdf>.
- NIDRR (1996). *NIDRR'S long range plan—Independent living and community integration research*. National Center for the Dissemination of Disability Research. NIDRR Project Number H133A990008, 1996-2004 SEDL, Wednesday, March 26, 2003, from <http://www.ncddr.org/rpp/ilcir/index.html>.
- Orr, A. (1998). *Issues in aging and vision: A curriculum for university programs and in-service training*. New York: AFB Press.
- Padula, W. V., & Shapiro, J. B. (1993). Head injury and the post-trauma vision syndrome. *RE: view*, 24(4), 153-158.
- Peli, E., & Vargas-Martin, F. (2002). The spectacle-lens telescope device for low vision. *Proceedings of the SPIE*, 4611, 129-135. (SPIE is the International Society for Optical Engineering.)

- Pogrund, R. (2002). Refocus. In R. Pogrund & D. Fazzi (Eds.), *Early focus: Working with young children who are blind or visually impaired and their Families* (2nd ed., pp. 1-15). New York: AFB Press.
- Pogrund, R., & Fazzi, D. (Eds.). (2002). *Early focus: Working with young children who are blind or visually impaired and their Families* (2nd ed.). New York: AFB Press.
- Pogrund, R., Healy, G., Jones, K., Levack, N., Martin-Curry, S., Martinez, C., Marz, J., Roberson-Smith, B., & Vrba, A. (1993). *Teaching age-appropriate purposeful skills (TAPS): An orientation and mobility curriculum for students with visual impairments*. Austin, TX: Texas School for the Blind and Visually Impaired.
- Pogrund, R. L., & Rosen, S. J. (1989). The preschool blind child *can* be a cane user. *Journal of Visual Impairment & Blindness*, 83, 431-439.
- Rosen, S. (1997). Kinesiology and sensorimotor function. In B. B. Blasch, W. R. Weiner, & R. L. Welsh (Eds.), *Foundations of orientation and mobility* (2nd ed., pp. 170-199). New York: AFB Press.
- Sauerburger, D. (1993). *Independence without sight or sound: Suggestions for practitioners working with deaf blind adults*. New York: AFB Press.
- Sauerburger, D. (1998). Orientation and mobility for deaf-blind people. *American Rehabilitation*, 23(3), 9-13.
- Smith, A. J., & Geruschat, D. R. (1996). Orientation and mobility for children and adults with low vision. In A. L. Corn & A. J. Koenig (Eds.), *Foundations of low vision: Clinical and functional perspectives* (pp. 306-321). New York: American Foundation for the Blind.
- Uslan, M., Peck, A., Wiener, W., & Stern, A. (1990). *Access to mass transit for blind and visually impaired travelers*. New York: American Foundation for the Blind.
- Verlander, D., Hayes, A., McInnes, J. K., Liddle, R. J., Liddle, G. W., Clarke, G. E., Clark, M. S., Russell, M., Ferguson, M., Walsh, P. G. (2000). Assessment of clients with visual spatial disorders: A pilot study. *Visual Impairment Research*, 2(3), 129-42.
- Webster's Collegiate Dictionary*, (10th ed.). (2002). Springfield, MA: Merriam Webster, Inc.
- Willoughby, D. M., & Monthei, S. L. (1998). *Modular instruction for independent travel for students who are blind or visually impaired: Preschool through high school*. Baltimore: National Federation of the Blind.

Study Questions

1. According to Jernigan, Huebner, and Sidwell, there are eight critical elements to independent travel. Which of the below are **not** among the eight identified by the authors?

- a. Self-orientation and safety
- b. Choice of manner and not an inconvenience to others
- c. Comfort and sensory integration
- d. Grace and speed
- e. Choice of destination and spontaneity

2. Which of the following is **not** considered to be an ambulatory aide?

- a. Long cane
- b. Support cane
- c. Crab cane
- d. Wheelchair
- e. Walker

3. Which of the following are not considered travel devices that may be used by individuals who are blind?

- a. Global positioning systems
- b. Long canes
- c. Dog guides
- d. Crab canes
- e. Collapsible canes

4. Which of the following skills are essential for persons without vision to be able to orient themselves to unfamiliar environments?

- a. Prior knowledge and experience with the specific environment
- b. Sensory awareness and sensory integration
- c. Access to a map and being able to read it
- d. Ability to ask sighted people for directions
- e. Ability to estimate distances within inches of the actual distance

5. Which of the following are **not** generally within the teaching responsibilities of a traditional O&M specialist?

- a. Teach mobility concept development
- b. Teach sensory awareness
- c. Teach cane skills
- d. Teach self-orientation skills
- e. Teach Braille reading and writing skills

Chapter 3

The Impact of Socially Constructed Beliefs about Blindness on the O&M Profession

By Ronald Ferguson

Introduction

The purpose of this chapter is to examine the impact of socially constructed beliefs regarding blindness on society and its application to orientation and mobility (O&M). This will be done by using an analytical framework based on the historiographical methodology of Foucault (1963, 1965, 1966, 1969). The chapter begins with a brief description of the historiographic framework. This is followed by an historical overview of some of the constructed beliefs that have shaped public perceptions of blindness. These perceptions can be traced back several thousand years and categorized under three dominant themes—sin, pity, and myths. Each of these themes is addressed in the chapter.

The chapter then sketches a brief history of the orientation and mobility profession. Two of the most contentious policies in the O&M field have been the longstanding insistence that a blind person was incapable of being an O&M instructor and that a university degree in O&M was necessary in order to teach O&M. Although the former policy has recently been overturned by the Association for Education and Rehabilitation of the Blind and Visually Impaired (AER), it, nevertheless, is an important issue, as it created sustained conflict within the O&M field among the American Foundation for the Blind (AFB), the American Association of Workers for the Blind (AAWB), its successor AER, certified O&M instructors, and the National Federation of the Blind (NFB). Nevertheless, for the purposes of this document, it is significant, because the emotionally charged debate associated with these policies is still evident and being felt (see posting for March 2003 on the O&M listserv). Therefore, in order to understand the current situation, it is important to have an awareness of the historical context.

Theoretical Framework

The theoretical framework and method of inquiry used in this chapter is policy archaeology. Foucault's Archaeology provides the analytical framework for policy archaeology. Archaeology, as a method of historical analysis, was influenced by at least two major developments in the early part of the twentieth century. One was the shift from linear scientific investigation modeled after Euclid and Newton to the field theory in science associated with Einstein. The other centered on Saussure's linguistic studies, which, among other things, "raised the question of whether there were laws that would be applicable to all languages" (Major-Poetzl, 1983, p. 97). Foucault borrowed some ideas from these studies, rejected others, and, in the end, created a new paradigm in order to help understand how a discipline had developed norms of validity and objectivity. The term

paradigm is used to describe archaeology, because it created the same sorts of controversy and debate that Thomas Kuhn described regarding paradigm shifts in *The Structure of Scientific Revolutions*. Furthermore, Kuhn's work is far more familiar in the United States than Foucault's; and, thus, Kuhn may serve as a reference for comparisons and illustrate some of Foucault's ideas. Several works by Foucault (1963, 1965, 1966, 1969) provide a detailed treatment of archaeology. A very good introduction to Foucault is Fillingham's *Foucault for Beginners*.

Policy Archaeology is a recent development in educational policy studies that provides a methodology for analyzing educational and social policy that goes beyond traditional policy study's framework, which is restrictive, since it accepts or presumes a commitment to the larger liberal worldview in which it exists. In contrast, this methodology argues for a different approach to policy studies, one that opens up new territory, establishes a new problematic, and, thus, serves to alter and expand the policy studies area. Policy archaeology is useful, because it expands the analysis of educational policy studies by asking questions that promote the investigation of groups and issues that traditionally have been ignored or taken for granted by policy researchers. For an introduction to policy archaeology, see Scheurich (1994, pp. 297-316). A more detailed description of Foucault's historiography can be found in Ferguson (2001, chapter 1).

Constructing What it Means to be Blind

Ancient Times

In ancient times newborn blind infants were commonly killed. Lowenfeld, in *The Changing Status of the Blind: From Separation to Integration* (1975), gives many examples of how the ancients justified their treatment of the blind. Two common motivations for annihilation were that the baby was an economic liability or as an act of compassion. The evidence of the blind being an economic liability was the presence of blind beggars who lined the streets and temple courts of the cities. These were people who became blind in later life, or children whose blindness was not detected early enough to kill (Ferguson, 2001).

People like Plutarch, Plato and Aristotle advocated the killing of blind babies. Plutarch's motive was out of compassion for the child. He did not want the infant to be subjugated to a miserable life. Plato "demanded that defective children must be disposed of," while Aristotle "thought that deformed newly born children should not be brought up" (Lowenfeld, 1975, p. 6). One possible explanation for this was because of the Greek notion of the importance of the individual's contribution to society. It was assumed that a blind citizen would not be able to provide a service to society, but rather would be a burden. Thus, to eliminate that person would be in the best interest of the community. According to Rehn, in *Das Kind in der Gesellschaft* (1925) (*The Child in Society*), the custom to expose or kill was not new to the ancients; examples of infanticide could "be found in the evolution of many, if not all nations and tribes" (Lowenfeld, 1975, p. 6).

In some cases, blind adults were venerated by elevating them above ordinary human beings (Lowenfeld, 1975). This would happen as a result of the belief that a particular blind person had

an unusual gift—a prophet or seer. In either case, veneration or annihilation, the blind were effectively purged from ordinary social interaction with the public.

Although Esser, a medieval historian, pointed out (in *Das Antlitz der Blindheit in der Antike* [1961] [*The Countenance of Blindness in Antiquity*]), examples of learned and gifted blind persons as singers, poets, philosophers, lawyers, and politicians, these accomplishments are not characteristically associated with blind persons (Lowenfeld, 1975). The more pervasive perception of the blind seems to be as a languid group. The daily existence of the blind beggar in ancient Rome was described by Friedlander and Wissowa (1919).

They sustained their lives as miserable, despised beggars asking for the scraps that dropped from the tables of the government and the rich. Accompanied by a dog, they roamed the streets and tried to arouse compassion through their defect. Their refuge may have been an open shelter, their dog perhaps the only companion of their misery. Their food may have been dog food, their only possession a staff, a cover or mat, and a knapsack, and their only deliverance, death in a lonely corner. (Lowenfeld, 1975, p. 22)

Other portraits of the blind painted them as a useless burden to society, miserable due to their loss of sight, or with disdain, because they were blind as the result of some punishment for a misdeed. These conceptions saturated public perceptions for the next 2,500 years (Lowenfeld, 1975).

Monbeck (1973) identified over one dozen popular beliefs about the blind that have been constructed over the past two and one-half millennia, which have continued to influence our understanding of disability as it relates to the blind. These beliefs have contributed to the social construction of educational and social problems associated with blindness. In what follows, some of the factors which have influenced how thinking about disability has developed and contributed to defining the boundaries which have restricted the range of policy solutions that have been created to *benefit* the blind will be identified. Monbeck's identification of one dozen beliefs has been consolidated into three broad categories: (a) pity, (b) sin (i.e., somehow they deserve it), and (c) myths. In fact, many of the historical works that deal with attitudes toward the blind can be included under one of these three headings. These categories provide the basis for why disability is perceived in a pejorative way.

Notions of Pity

One of the most insidious notions about the blind is that they are to be pitied because of their disability. The widespread feeling of sorrow for those who are perceived to be helpless and hopeless seems to be the consequence of a variety of misconceived ideas regarding the blind. One of these ideas is that the sighted have assumed they must provide custodial care for the blind because they are alleged to be disabled. Two common sources of this notion of pity came from religious beliefs and low expectations of the capabilities of the blind. Pity, inspired by religious sympathy, was a popular theme in the writings of French and Monbeck. French highlighted the benevolent efforts of the early church to care for the blind. Monbeck explored how various religious writings have inspired feelings of pity. Monbeck drew on the *Bible, Koran, Talmud,*

and *Midrash* to support his “idea that blind people are particularly deserving of pity and sympathy” (Monbeck, 1973, pp. 26, 29, 31, 33, 34).

The impression one gets from Monbeck's illustrations is that the *Bible* advocates pity for the blind. However, on a closer examination of the passages he uses to support this assertion, it is clear that he has separated the examples from the context of the passage. Although the main intent of this chapter is *not* to correct misinterpretations but only to overview factors that have contributed to twentieth century beliefs about blindness, nevertheless, Monbeck's use of the scriptures, especially the *Bible*, provides fertile examples of how misreading and the use of eisegesis can lead to the construction of erroneous conclusions. Only a couple of examples are necessary to see how Monbeck has perpetuated and reinforced a response of pity toward the blind.

At one point, Monbeck (1973) wrote that blindness “was considered the worst of infirmities [disabilities] (more so than deafness, dumbness, and lameness) throughout the *Bible*, *Talmud*, and *Midrash* where it is often said ‘The blind man is as one dead’” (pp. 28, 29). Monbeck cited French as his source for this statement. This phrase is not in the Bible. Furthermore, French does not say that blindness was considered the greatest infirmity. In French's words, “Old Jewish literature—the *Bible*, *Talmud*, *Midrash* [*italics added*]—speaks chiefly of four infirmities, deafness, dumbness, blindness, lameness. Among these infirmities blindness is considered the greatest evil” (French, 1932, p. 36). The only connection French makes that could associate the phrase “The blind man is as one dead” with the Bible is from his noting a commentary in the *Midrash*, which expounds on a verse in Psalms. However, to link this with the Bible is not possible, because French himself said that the source of the phrase was the rabbi's, not the Bible. He wrote, “Among the rabbins the infirmity of blindness is characterized in the frequently recurring sentence: ‘The blind man is as one dead’” (French, 1932, p. 36). The significance of this is that to associate the idea that “the blind man is as one dead” with the Bible carries far more influence than to say that the phrase is simply the writing of an obscure rabbi.

Perception of Sin

The second category for consideration is the pervasive belief that Divine retribution was an anticipated consequence for a transgression. In previous centuries, it was not uncommon for the blind and sighted to contemplate whether blindness may have been a punishment for a past sin. Chevigny wrote in his autobiography, *My Eyes Have a Cold Nose*,

With variations in circumstances and time, . . . every man who suffers a calamity of the objectively tragic quality of blindness finds himself, like Job, surrounded by people who, in effect, debate with him on the nature of the evil which has befallen him. (Monbeck, 1973, pp. 48, 49)

A primary source that could give rise to this notion is the Bible. There are numerous passages in the *Bible* which could influence one to associate blindness with punishment for sin, giving rise to the belief that blindness is a punishment. The “Pentateuch” contains many instances of God warning the Hebrews, through the prophet Moses, that the guilty will not go unpunished. In giving the Ten Commandments, Moses wrote that God “does not leave the guilty unpunished; he

punishes the children and their children for the sin of the fathers to the third and fourth generation" (Exodus 34:7b). Thus, blindness in children or grandchildren could be interpreted to be a punishment as a consequence for some sin of the "fathers." A New Testament passage which deals directly with the issue of blindness as a consequence of sin is in St. John's gospel. While walking with Jesus, his disciples noticed a blind beggar who was blind from birth. They asked Jesus, "Who sinned, this man or his parents, that he was born blind" (St. John 9:2)? The response from Jesus was, "Neither this man nor his parents sinned but this happened so that the work of God might be displayed in his life" (St. John 9:3). This passage is quite interesting because it goes on to describe a conflict that was occurring between Jesus and the Pharisees. They were upset over the healing of this blind man on a Sabbath (see St. John 9:6, 7, 16). The Pharisees questioned the man who was healed, and the formerly blind man turned the tables in that he was instructing the Pharisees regarding religious teaching. This further upset the Pharisees. "To this they replied, 'You were steeped in sin at birth; how dare you lecture us!' And they threw him out" (St. John 9:34). What is interesting is that while Jesus refuted the idea that blindness was a punishment, the Pharisees reinforced the notion.

Monbeck (1973) mixed Old Testament writings and extra-biblical legends to convey the connection between blindness and punishment for sin. Again, exegesis is subordinated to Monbeck's primary purpose of showing how the *Bible* supports blindness as a manifestation of sin. He interpreted several passages that reinforce his position and then wrote, "Other moral injunctions backed by a threat of blindness are found at Psalm 69:23, Proverbs 30:17, and Zephaniah 1:17" (p. 50).

The reference in Proverbs states, "The eye that mocks a father/that scorns obedience to a mother/will be pecked out by the ravens of the valley/ will be eaten by the vultures." The impression that Monbeck seemed to give was that disrespect for one's parents was punished by blindness; in other words, the offender's eyes will be pecked out by the ravens. The imagery of the raven comes into clearer focus when the punishment for rebellion to parents is understood. In Deuteronomy 21:18-21 the consequence for a rebellious son is not blindness but death. Thus, the ravens are eating the eyes out of a carcass, not inflicting a punishment on a rebellious son.

Another hermeneutical problem Monbeck failed to deal with was the use of blindness as a metaphor for the lack of spiritual perception. This is seen in his reference to Zephaniah. This passage of Hebrew poetry reads, "I will bring distress on the people, and they will walk like the blind/ because they have sinned against the Lord" (Zephaniah 1:17a). The punishment Zephaniah was discussing has nothing to do with physical blindness.

The significance of discussing these examples is to reinforce the fact that the assertion that the Bible associates blindness with punishment is not accurate but, nevertheless, has influenced both the blind and sighted to entertain this idea. A negative consequence is that the sighted then treat the blind as inferior. Thus, in a subtle way, misconceptions of blindness are constructed.

Popular Myths

The third category of misconceptions about blindness is popular myths. Accumulated myths, reinforced over centuries, powerfully influence the sighted, as well as the blind, to view

blindness as a disability. Best's (1934) description of the blind reads like a eulogy. He told of their sorrow and hopelessness as they endure "darkness." He went on to write: "The deprivation entailed in the loss of sight is verily a grievous one—one to which mayhap none other befalling the sons of men is to be likened" (p. xv). Koestler (1976) described the grief a psychiatrist has toward blindness. The psychiatrist grieved when he had to tell a person that he was blind. He said that it was almost like "condemning him to a sort of living death" (p. 3).

Much of this dolor is because of the popular myths of blindness. Langworthy (1930) has researched the portrayal of the blind in works of fiction. She concluded, "No matter what the blind person's talents or lack of them are, all that he does, whether good or ill, is a result, in the minds of most people of his handicap" (p. 270). Blindness is a very powerful identifying characteristic. Identity equals blindness much like identity equals male or female rather than a quality like race being associated with identity. Some of the myths of blindness she discussed are that the blind are in darkness; they are miserable, helpless, useless, maladjusted, and compensated for their blindness. Only a summary of the more pervasive myths will be examined in what follows.

The sixteenth century Dutch painter Pieter Breughel (c.1520-1569) vividly communicated the message that the blind grope helplessly in darkness. One of his paintings, titled "The Parable of the Blind Leading the Blind," depicts six blind men walking in a line, each with one hand resting on the shoulder of the man in front of him. The lead man falls at the edge of a creek with the second one falling on top of him and the others poised to fall like dominos. Also of note is that the blind are painted without eyes, only empty sockets. The message of the picture summarizes the feelings of the sighted about the abilities of the blind.

Another powerful myth about blindness is that their disability causes them to be miserable. This theme has woven its way through literature, poetry, and music for the past twenty-five centuries. John Bunyan (1628-1688) described a blind child in *Grace Abounding*. He wrote,

Poor child, thought I, what sorrow art thou like to have for thy portion in this world!
Thou must be beaten, must beg, suffer hunger, cold, nakedness, and a thousand
calamities, though I cannot now endure that the wind should blow upon thee. (Merry,
1933, p. 19)

Best (1934) echoed this attitude as he lamented their misfortune. He concluded, "In the mere absence of the sense of vision, there results to a human being a deprivation to which few if any other earthly ills are to be likened" (p. 289). This perception of misery is one of the central assumptions humanitarians, social reformers, policy analysts, and organizations for the blind have about the blind.

Maybe the most grievous and detrimental myth about the blind is that they are perceived to be useless. Koestler (1976) wrote, "The belief that blindness equals uselessness has prevailed so long and so firmly in western culture that its traces have yet to be fully erased" (p. 3). One conclusion that proceeds from the idea of the blind as useless is that they must, therefore, be dependent on sighted people to survive. Basically, the only thing a blind person can do is beg.

The blind beggar is probably the most pungent picture of devastation of the disability of blindness that the sighted have constructed.

Pity, sin, and myths about blindness have influenced many to believe that blindness is the worst of all disabilities. Consequently, in the twentieth century, policy makers assumed that blindness was a social problem. Singling out blindness as the most severe infirmity seemed to be more a statement about the fear of the sighted toward blindness than any rational analysis of blindness itself. A reoccurring theme throughout the history of the blind is the projecting of unsubstantiated beliefs onto the blind. These fears color the way the sighted interpret all sorts of information pertaining to this group of people. Koestler (1976), in her history of the American Foundation for the Blind, *The Unseen Minority*, wrote, "Of all the ills and imperfections of humankind, blindness is the most universally dreaded" (p. 1).

To be sure, there are examples that show the blind in a more favorable light, but, far too often, this is done with the attitude that these are exceptional cases. Lowenfeld (1975) cited a couple of dozen examples of the accomplishments of blind people from the fourth to the nineteenth centuries (pp. 49-65) to illustrate that the blind in the seventeenth and eighteenth centuries were being emancipated from their bondage of earlier times. As examples of self-emancipation, this is deceptive, because all the examples Lowenfeld gave appeared to be people of the upper classes in society. Thus, by virtue of their social position, they are privileged.

History of O&M Profession

Based on Ferguson's (2001, chaps. 4 & 5) research, there is evidence which points to the fact that the original policy decision to require vision for mobility instructors was forged by unfortunate experiences (Bledsoe, 1997, pp. 591-593), misconceptions of blindness (Bledsoe, 1947, 1952, 1965), and animosity with the organized blind movement. Furthermore, these elements were a catalyst to sustain the policy for over five decades. Based on the available data, Ferguson concludes that the decision to accept blind and visually impaired persons as O&M instructors was significantly influenced by the passage of the Americans with Disability's Act (ADA).

The policy decision to exclude blind persons from teaching cane travel corresponded with the establishment of the training center for the blind at the Veterans Administration Hospital located in Hines, Illinois. The central figure in crafting this policy was C. Warren Bledsoe. He exerted considerable influence in his role as the chief architect of the blind rehabilitation program in the Physical Medicine Rehabilitation of the Blind section at Hines. This included the hiring of its first Chief, Russell Williams, and the selection and training of instructors at Hines (Bledsoe, 1997, 1969).

Others in positions of influence also supported the policy to have only sighted O&M instructors (Mobility and Orientation, 1960). Without such support, the policy could not have become one of the pillars on which the university programs in O&M and certification of O&M instructors rested. A series of conferences was held in the 1950s to discuss how to best meet the growing demand for O&M instructors and the general development of the O&M profession. The most prominent meeting was funded by the U.S. Office of Vocational Rehabilitation and held at the

American Foundation for the Blind in June 1959. A noted occurrence at the conference was an infamous declaration by William Debetaz, of The Seeing Eye, Inc., to the question: “What can a sighted mobility instructor do better than a blind one at fifty paces from the trainee?” The answer given was, “The sighted instructor can see danger and say ‘Stop’” (Voorhees, 1962, p. 18). This response seemed to be sufficient evidence that the policy requiring sight in order to teach O&M was just.

This policy requiring sight was affirmed in the “Standards for Orientation and Mobility Services” (Standard 1.4.1, p. 226) of the *COMSTOC Report* (1965). A year later, a report from an ad hoc committee at a National Conference on Mobility Instruction for the Blind confirmed the need for sight for O&M instructors (Koestler, 1966, p. 7). In 1971, the sight mandate remained entrenched; however, the vision acuity and visual field requirements were modified to 20/40 and 120 degrees, respectively. When the certification requirements were revised in 1977, with the development of the Functional Abilities Checklist, vision was still essential in order to qualify for certification (Wiener & Siffermann, 1997, p. 557).

The National Federation of the Blind (NFB) had voiced its objection to the mandate that sighted persons were the only ones truly qualified to teach cane travel. As early as 1958, a letter in the *Braille Monitor* expressed the conviction that a blind person, with proper training, could be an O&M instructor (Blind Instructors in Cane Travel, 1958, p. 8). Blindness in itself was not a sufficient reason to exclude blind persons from the O&M profession. This does not mean that any blind person is suited or qualified to teach travel. The same is also true regarding sighted people and teaching orientation and mobility. However, a qualified blind person, one who has the skills and teaching ability, can be an effective orientation and mobility instructor.

It was not until the early 1980s that the exclusionary policy mandating sight was challenged. At that time, the American Association of Workers for the Blind (AAWB) (the body responsible for the certification of O&M instructors) denied the certification of Fredric Schroeder, a blind graduate of an approved university O&M program. Justification for this action was that Schroeder’s supervisor was not able to answer “yes” to several of items on the “Functional Abilities Checklist.” These items included the following:

- Can the applicant describe in detail the posture, gait and techniques of a student within the distances of 5 to 125 feet as required for indoor training?
- Can the applicant describe actions and gross techniques of a student from a distance of 250 feet (1/2 block)?
- Can the applicant, moving in an unfamiliar area, assess collision paths of a student and construction equipment, traffic control boxes, and other large stationary objects at a distance of 375 feet (3/4 block)?

These functional abilities reflect the belief that sight is essential for teaching O&M. Further, it is the author’s belief that the instructional model is teacher-centered. It was not until 1996 that AER Division Nine officially recognized that a blind person could be a qualified O&M instructor (Wiener & Siffermann, 1997, p. 559). However, an assumed accommodation for the blind O&M instructor would be a sighted assistant. To be more precise, the official AER policy states, “The certification policy now requires that when an otherwise qualified person with a disability is

unable to perform the monitoring tasks, the universities must explore the use of alternative strategies, accommodations, and auxiliary aids" (p. 558). In common practice in the field, many O&M instructors, agency administrators, and blind persons themselves interpret this list of accommodations to mean sighted assistance. This presumption, whether accurate or not, tends to inflame the sensibilities of blind instructors who reject the notion that any accommodations are necessary. This misperception of the abilities of blind instructors may also result in lost job opportunities because agency directors fear greater costs and hassles by hiring blind instructors. Therefore, AER's support for blind O&M instructors is only a recent development and is by no means universally accepted. Why belabor the circumstances surrounding a policy that is no longer in effect? There are three reasons: (a) to establish that the policy was not based on any research or evidence that blind persons were unqualified to teach cane travel; (b) to examine the unquestioned assumptions or the "taken-for-granted" ideas about blindness that influenced the policy and the arduous defense of that policy for five decades; and (c) to provide the context for why alternative methods for training O&M instructors is needed.

Circumstances, Assumptions, and Theory

Believing that blind persons could be good O&M instructors, James Nyman, Director, Nebraska Rehabilitation Services for the Visually Impaired, hired James Walker, a blind person, as a full-time travel teacher in 1976. The training center has continued to employ blind travel instructors. Probably the most well-known travel instructor the agency has had is Fredric Schroeder, who was denied certification by the AAWB. This action, along with the visibility of the Nebraska agency, sparked a lively debate on the suitability of blind O&M instructors. This interchange was carried in a series of articles in the *Journal of Visual Impairment and Blindness* between Olson (1981) and Wiener (1983).

Olson (1981) felt strongly that the "institutions of professional certification, agency accreditation, and specialized academic programming—do far more to advance the interests of the professional in the field than to advance the interests of the blind" (p. 338). His assertion was that these served as a "paper barrier" to quality services. It was Olson's view that there is "nothing profound or mysterious about the ability of blind people to travel independently. It is a very straightforward, practical skill which is grounded in common sense" (p. 338). A major criticism Olson had of the American Association of Workers for the Blind (AAWB) and its certification requirements was that it assumed that "normal vision is a 'bona fide occupational qualification' for teaching O&M" (p. 338). Olson acknowledged that using vision is one way of teaching O&M, but not the only way or even the best way (p. 338). Furthermore, the insistence on excluding the blind from teaching O&M goes against the "indisputable fact that blind people can and do teach independent travel safely and effectively" (p. 339). As a result, Olson criticized the policy as a clear form of discrimination and claimed that the professionals had not made an attempt to include the blind but had, instead, sought ways to keep the blind out of the profession. He further asserted, "This explains why it is impossible, even in the face of compelling evidence, for the profession to accept the fact that blind people can and do perform in the role of O&M instructor every bit as well as sighted people" (p. 339). A conclusion reached by Olson was that the professionals operate from the assumption that blind people "are *inherently* and *irreducibly* less well suited to living in the world than people who can see" (p. 339).

Wiener (1981) alleged that Olson “opposes the process of certification along with its requirements for university education and functional abilities assessment” (p. 339). Note the word usage by Wiener—Olson “opposes the process of certification.” This does not appear to correctly reflect the interpretation of Olson’s position. The two major points Olson made were that the current policies are discriminatory toward blind persons who desire to be certified travel instructors, and vision is assumed to be an absolute necessity in order to safely teach O&M. Olson questioned the assumptions that underpin the belief that sight is indispensable to teaching O&M. Next, Wiener turned his attention to the blind consumer. He believed the current system of certification was the only assurance a blind consumer could have that his or her instructor was competent. Thus, certification expands the “horizons of blind people by making available to them the kind of instruction that will adequately prepare them for independent travel” (p. 340). In order to provide this assurance, the instructor must be sighted and have a university degree in O&M. With regard to the academic preparation, Wiener stated that “it is necessary to have a strong foundation in the theoretical underpinnings that accompany the practical travel techniques” (p. 340). On the issue of sight, Wiener declared that “the practice of orientation and mobility requires an active instructor who is able to monitor the environment and protect the client from imminent danger” (p. 340). Wiener’s starting point was the unquestioned acceptance of the policies as they existed. Olson, on the other hand, challenged the myths and misconceptions of blindness that he felt influenced the establishment of the policies.

Fourteen months later, the *Journal of Visual Impairment and Blindness* carried another exchange between Olson and Wiener. This time Olson (1983) was responding to Wiener. He expressed frustration that Wiener did not address the major points he raised. In responding to Olson, Wiener (1983) pointed out that Olson simply restated the same major points he had presented in the previous exchange and he (Wiener) will make another attempt to clarify his position. The first topic Wiener tackled was the claim by Olson that “a blind person can perform competently as an O&M instructor” (p. 23). Wiener maintained that Olson simply asserts that this is the case without any explanation of how this could be accomplished. Therefore, he assumed that “[Olson] means his instructors use hands-on-approach with their clients so that physical contact is maintained throughout the instructional phases” (p. 23). He then listed many things a blind instructor cannot do as the result of not being able to visually monitor the student. What is instructive about this is that Wiener created a scenario of how a blind instructor purportedly teaches. The interesting thing is that he drew a “sighted” conclusion. This well illustrates the point Olson was trying to make—that the professionals have not been able to think outside the boundaries of “vision.” This exchange exemplifies an important point. The professional field was entrenched with regard to the policy insisting on sight in order to be able to effectively and safely teach O&M.

It is important to note that Wiener is an excellent example of one who, after careful investigation into the teaching methods of blind O&M instructors, did change his position on this issue. He courageously brought forward the need to confront the discrimination of blind persons from being eligible to obtain AER certification as O&M instructors. He also encouraged the Veterans Administration to approve the hiring of blind O&M instructors. His efforts were rewarded in that AER eventually agreed to discontinue the discriminatory practice of excluding blind persons from being certified by AER.

Summary

Currently, there is an estimated need for 10,000 more O&M instructors (Richert, 2003). Richert suggests, “Perhaps the most daunting challenge we face as a field is the shortage of personnel to serve people who are blind or visually impaired” (p. 64). The need to consider alternative ways of meeting this acute shortage is imperative, since there currently are fewer than 100 new mobility instructors prepared each year from the various Association for Education and Rehabilitation of the Blind and Visually Impaired (AER)-approved university programs (p. 64). Any solutions to this severe scarcity in O&M instructors must be understood in light of the historical context of the orientation and mobility field and the dissatisfaction of some rehabilitation professionals and blind persons with the quality of those instructors. This is important for two reasons: one, to demonstrate that the solution offered and adopted in the late 1950s to meet the personnel shortages has not been sufficient and, two, to recognize that an alternative model for personnel preparation has been promoted by the organized blind movement (National Federation of the Blind) as early as the 1950s (developed at the California Orientation Center and refined at the Iowa Commission For the Blind in the 1960s) but has been largely marginalized by professionals in the blindness field (Mobility and Orientation Conference, 1960). Furthermore, and more important, these issues must be considered in light of the socially constructed beliefs about blindness and its insidious impact on public attitudes and professional practice.

Recommendations

- O&M professionals should become more familiar with the idea of social construction and its impact on people with disabilities, in general, and blind persons, in particular.
- O&M professionals need to gain a deeper understanding of the history of the O&M field and issues related to O&M. An extensive O&M bibliography is being compiled at the Professional Development and Research Institute on Blindness, Louisiana Tech University.
- O&M professionals should arrange visits at adult training centers and university programs to gain first-hand knowledge and experience with curricula and training models used to teach O&M.
- O&M professionals should become more familiar with the emerging field of disability studies. This can be done by subscribing to journals and/or attending conferences hosted by the Society for Disability Studies and Disability Studies and Education.

References

- Best, H. (1934). *Blindness and the blind in the United States*. New York: Macmillan Company.
- Bledsoe, C. W. (1947). Manual for orientors. *Outlook for the Blind*, 41(10), 271-279.
- Bledsoe, C. W. (1952). Resistance. *Outlook for the Blind*, 46(9), 245-250.
- Bledsoe, C. W. (1965). Selected readings concerning blindness, for graduate students. *Faculty Contributions, School of Graduate Studies, WMU*, 7(2), 5-12.
- Bledsoe, C. W. (1969). From Valley Forge to Hines: Truth old enough to tell. *Blindness*, 97-142.
- Bledsoe, C. W. (1997). Originators of orientation and mobility training. In B. B. Blasch, W. R. Wiener & R. L. Welsh (Eds.), *Foundations of Orientation and Mobility* (2nd ed., pp. 580-621). New York: AFB Press.
- Blind instructors in cane travel. (1958). *Braille Monitor*, 8.
- Ferguson, R. (2001). *We know who we are: A history of the blind in challenging educational and socially constructed policies. A study in policy archaeology*. San Francisco: Caddo Gap Press.
- Fillingham, L. A. (1993). *Foucault for beginners*. New York: Writers and Readers Publishing, Inc.
- French, R. S. (1932). *From Homer to Helen Keller: A social and educational study of the blind*. New York: American Foundation of the Blind.
- Friedlander, L., & Wissowa, G. (1919). *Darsstellungen aus der Sittengeschichte Roms* (Vol. 1) (Descriptions of Rome's history of customs and morals). Leipzig: Privately printed.
- Jernigan, K. (1992). Shifting balances in the blindness field. *Braille Monitor*, 35, 460-470.
- Jernigan, K. (1997). The day after civil rights. *Braille Monitor*, 40.
- Koestler, F. A. (1976). *The unseen minority: A social history of blindness in the United States*. New York: David McKay Company, Inc.
- Koestler, F. A. (Ed.). (1966). *The COMSTAC report: Standards for strengthened services*. New York.
- Langworthy, J. L. (1930). Blindness in fiction: A study of the attitude of authors toward their blind characters. *Journal of Applied Psychology*, 14, 269-286.

- Lowenfeld, B. (1975). *The changing status of the blind: From separation to integration*. Springfield, IL: Charles C. Thomas.
- Major-Poetzl, P. (1983). *Michel Foucault's archaeology of western culture: Toward a new science of history*. Chapel Hill: University of North Carolina Press.
- Merry, R. V. (1933). Problems in the education of visually handicapped children. In *Harvard studies in education* (Vol. 19). Cambridge, MA: Harvard University Press.
- Mobility and orientation—A symposium (1960). *New outlook for the blind*, 54, 77-94.
- Monbeck, M. (1973). *The meaning of blindness: Attitudes toward blindness and blind people*. Bloomington: Indiana University Press.
- Olson, C. (1981). Paper barriers. *Journal of Visual Impairment and Blindness*, 75, 338-339.
- Olson, C. (1983). A response to Professor Wiener. *Journal of Visual Impairment and Blindness*, 77, 21-22.
- Richert, M. (2003). A national initiative to promote recruitment and preparation of personnel. *Journal of Visual Impairment and Blindness*, 97(1), 64.
- Scheurich, J. J. (1994). Policy archaeology: A new policy studies methodology. *Journal of Education Policy*, 9(4), 297-316.
- Voorhees, A. (1962). Professional trends in mobility training, *Standards for Mobility Instructors*. New York: American Foundation for the Blind.
- Wiener, W. (1981). Body of knowledge. *Journal of Visual Impairment and Blindness*, 75, 339-341.
- Wiener, W. (1983). Rejoinder. *Journal of Visual Impairment and Blindness*, 77, 23, 26-27.
- Wiener, W., & Stifferman, E. (1997). The development of the profession of orientation and mobility. In B. Blasch, W. Wiener & R. Welsh (Eds.), *Foundations of orientation and mobility* (2nd ed., pp. 553-579). New York: American Foundation for the Blind Press.

Chapter 4

Structured Discovery Cane Travel

By Jeffrey Altman and Joseph Cutter

Introduction

This chapter will describe the Structured Discovery method of orientation and mobility (O&M) instruction. To assist the reader in understanding the differences between the Structured Discovery and conventional methods, the chapter will draw distinctions between the two approaches to help highlight their underlying philosophical and instructional differences. Of course, both approaches use many of the same techniques and strategies; and, therefore, the reader may well be drawn to the conclusion that the differences between the two methods are mostly semantic. Nevertheless, there are important differences both in methodology and beliefs that distinguish the two approaches in important ways. Accordingly, the chapter will emphasize those elements that characterize each approach, not to imply that any given technique or strategy is exclusive to either the Structured Discovery or conventional method, but rather, to assist the reader in better appreciating the distinct character of each of the two methods.

The proponents of both Structured Discovery and conventional methods believe that blind people should receive orientation and mobility instruction that will enable them to live active, productive lives. Both approaches seek outcomes that allow blind people to travel independently, with confidence in familiar and unfamiliar environments. These approaches employ the same mechanical methods of moving the cane from side to side, and proponents believe that the tactile information acquired through the cane, in combination with auditory and other information, will allow blind persons to be effectively oriented and have control over their independent movement through the environment. These approaches include, to at least some degree, blind people as instructors and make use of occlusion or sleepshades. Yet, in spite of these similarities, the two approaches have vast substantive differences that run much deeper than style or emphasis—deeper than simple disagreement between when to introduce a particular skill or employ a particular strategy.

The application of Structured Discovery Learning methods to orientation and mobility instruction has grown out of a civil rights model of blindness, which predates, closely parallels, and continues to draw upon Mettler's (1995) Cognitive Learning Theory. Its proponents believe that attitudes and beliefs about blindness cannot be separated from orientation and mobility training. They believe that low expectations present the most significant barrier to independence for blind people—the low expectations of society internalized by the individual blind person. Accordingly, proponents of the Structured Discovery method believe that it is essential that instructors themselves hold a deep, personal belief in the ability of blind people. They do not regard themselves as simply trainers of a particular skill, but rather, regard themselves as part of the movement of blind people from exclusion to full integration and equality.

Proponents of Structured Discovery believe that

- It is essential that the students learn to regard themselves as *blind* persons rather than as persons with impaired vision.
- Sleepshades must be used with virtually all students throughout the entire instructional program to help them effect alternatives to their dependence on remaining, usually unreliable, vision and to support the development of confidence in their own ability as competent blind people.
- A cane should immediately be given to the individual during the first lesson and should be used by the student at all times from that point forward.
- A much longer cane (at least chin high) supports the belief that blind people can walk at a normal walking speed.
- Straight, non-folding canes must become a part of the individual's sense of personal identity.
- Protective arm techniques are artificial, awkward, and create unnecessary social distance.
- Sighted guides should almost never be used during instruction, as they undermine the development of self-confidence and reinforce dependency on the instructor.
- An emphasis on experiential, problem-solving training is critical to assist the individual in gaining confidence and helping lessen dependence on the instructor.
- Modifications to the environment are mostly unneeded and may interfere with individuals building a sense of them as being able to function fully in the environment as it exists.
- Electronic travel aids create social distance and reinforce the idea that the individual cannot travel without elaborate modifications.

Structured Discovery embodies the belief that O&M begins with blind persons having a sense of being whole blind persons, not as damaged sighted persons—not as persons striving to mitigate their diminished status. It de-emphasizes the professional nature of O&M training in lieu of a conception of cane travel as a straightforward, common sense method for independent travel. This is why most proponents of Structured Discovery prefer the term *cane travel* to *orientation and mobility*. Cane travel training is not viewed as a subset of the broader discipline, but rather, is regarded as the foundational skill needed by blind people to travel independently. Cane travel is regarded as a set of skills and strategies, developed by blind people, that have evolved over time and have been refined as the world has changed. It is not regarded as mysterious or scientific or something that is, or should be, the exclusive province of any group of professionals.

And, finally, the Structured Discovery method is not based on visual monitoring. Blind people can employ the Structured Discovery method of instruction as easily as sighted people, perhaps more easily. This is important not only because it offers blind people employment as cane travel instructors but because it helps blind students develop trust in their own application of the techniques and strategies they have been taught rather than depending on a sighted professional to insure their safety. Proponents of the Structured Discovery method believe so strongly in this aspect of training that sighted instructors are not only taught to travel using a sleepshade but also learn to teach while blindfolded.

While proponents of the conventional and the Structured Discovery methods believe that blind people should have the opportunity to live normal, productive lives, proponents of Structured

Discovery do not regard it as simply an alternative approach. They reject the notion that the similarities between the two approaches make them more alike than different. This is not to disparage the conventional approach, yet proponents of Structured Discovery do not believe that the prospective student is served well by having Structured Discovery and conventional training presented as essentially comparable with only minor stylistic differences, yielding the same outcomes. They do not see Structured Discovery as only one choice among many, all equally effective in preparing blind people to learn to travel safely and independently. Proponents believe that the attitudinal dimension, the emphasis on the civil rights perspective of blind people as part of a minority group, is central to the acquisition of travel skills but, more to the point, the acquisition of confidence and self-respect. They believe that it is vital that the student recognize that blind people live in a world in which their opportunities are constricted by prejudice and misunderstanding. They do not regard Structured Discovery as simply an instructional approach, pedagogically distinct from the conventional method.

This chapter seeks to help the reader appreciate the depth of feeling proponents of Structured Discovery share and their views that Structured Discovery is much more than an instructional strategy for teaching cane travel. The chapter will describe the foundational beliefs as well as the specific techniques employed under the Structured Discovery approach. It will draw attention to techniques and strategies used to elevate independence, self-confidence and, eventually, freedom from the presumption that sight represents normalcy, whereas blindness symbolizes dependency.

The Egalitarian Approach

The Structured Discovery model begins with the development of a collegial, egalitarian learning partnership between the instructor and the student (learner). Structured Discovery instruction works by focusing learning on the individual's perceptions, self-awareness, responsibility, capacity to learn, and problem solving skills. Under this model, the knowledge and skills to be learned are presented in the context of the actual environmental conditions that are representative of real-world travel experiences, i.e., the types of challenges that the individual will encounter after instruction is complete. This model utilizes instructional methods that encourage learning through intrinsic discovery and emphasizes the self-correction of errors as fundamental to the learning process. The approach does not assume that learners necessarily come to the learning process with extensive travel experience or environmental concepts, but rather, recognizes that the knowledge that the learner brings to the training process is the point at which learning will begin and how the instruction will be individualized. In addition, this approach recognizes that each individual can learn to understand and assess the environment from experience and, more important, can apply these same skills once training is completed. As will be discussed later in this chapter, this approach also recognizes that certain types of skills, i.e., motor skills that are of a repetitive nature requiring little adjustment to environmental conditions, are better presented through guided instruction, wherein the instructor restricts the errors made by the learner (Mettler, 1997).

Structured Discovery Learning theory is deeply rooted in a consumer-driven approach to rehabilitation service delivery and the collective experience of blind persons (Morais, Lorensen, Allen, Bell, Hill, & Woods, 1997; Mettler, 1995). When the Structured Discovery Learning model is followed, the process of rehabilitation begins with encouraging the blind individual to

view blindness as one of many personal physical characteristics. As is the case with any physical characteristic, blindness presents certain limitations that shape the nature of the techniques that will better lead to success in accomplishing a given task (Jernigan, 1995). Mettler (1995) described the Structured Discovery Learning approach in terms of cognitive psychology, emphasizing that the focus is not on how O&M instructors teach independent cane travel techniques, but rather, on how human beings learn independent cane travel (Mettler, 1995, p. 14). In other words, blind persons are viewed in a holistic manner, having knowledge and experience that can be drawn upon when needed, and the same cognitive capacities to learn and adapt as do all other human beings. According to Schroeder (1995), a blind person should not be viewed as a deficient sighted person. In keeping with this positive view of blindness, the *Cognitive Paradigm*, as described by Mettler is an asset model, focusing on human capacities to employ existing knowledge and skills, ability to gather new information, and assessment of environmental conditions. This instructional approach culminates in the blind traveler's own ability to evaluate any given situation, effectively problem solve, and implement appropriate strategies to achieve the desired outcome. This approach is also sometimes referred to as a "Blindness model," because it recognizes that non-visual management of the environment can be as effective as visually-based methods and that blindness does not negatively impact upon the human's ability to adapt (Olson, 1982).

Learning Styles

The Structured Discovery Learning approach to O&M focuses instructor preparation on personal development of direct experience with independent cane travel and an understanding of effective pedagogical methods in these skills (Mettler, 1997), which is consistent with current study in expert learning (Bransford, Brown, & Cocking, 1999) This is in contrast to a perception that conventional instructor preparation focuses too much on the development of a body of knowledge concerning human physiology, i.e., physical movement through the environment in a specific sequence of skill introduction; and precisely detailed, step-by-step instruction in physical behaviors.

Research emerging from theories of cognitive learning indicates knowledge is learned implicitly in addition to being obtained through explicit instruction (Lustig & Hasher, 2001; Magill, 1998; Lippman & Rees, 1997; Lee & Vakoch, 1996; Lee, 1995). This research supports the premise of the Structured Discovery approach that one should give consideration to the implicit messages which arise from the practices of O&M instructors, the relationship between the instructor and the learner that develops through these practices, and their impact upon the learner's long-term sense of self-efficacy. This is an especially serious concern, because implicit knowledge differs from explicit knowledge in regard to the rate at which it is learned, and also the rate at which errors that have been incorporated can be extinguished from long-term memory (Bransford et al. 1999). According to research, explicit knowledge appears to be learned relatively quickly and is more subject to extinction than is implicit knowledge, which is most closely associated with procedural memory (Magill, 1998; Lee & Vakoch, 1996).

Other theories of implicit knowledge add that most learners will implicitly attend to those informational factors, whether environmental, verbal, or behavioral, that reinforce their existing beliefs (Magill, 1998). They will then expend significant effort in debunking information that is

counter-stereotypical, or will simply ignore that information. This presents a need for consideration as to the possible impact that experiences with the learning environment or instructor behaviors may have on either challenging or reinforcing the learner's beliefs regarding blindness. These aspects of the instructional process are particularly critical and potentially damaging to the learning of independent travel. Consequently, professional preparation should consistently confront common and novel myths and misconceptions about blindness and take care not to adopt an implicit corroboration of these beliefs. Once attitudes in the form of complex rules are established as implicit knowledge in procedural memory, as with other forms of implicit knowledge, correction of this form of error is very difficult and time-consuming to achieve (Plaks, Stroessner, Dweck, & Sherman, 2001; Lustig & Hasher, 2001; Magill, 1998; Anderson, 1996; Lee & Vakoch, 1996; Lippman & Rees, 1997; Mettler, 1995).

Under the Structured Discovery Learning model, the ultimate goal for the learner is to develop expertise in the non-visual skills, which are reliable and transferable across virtually all conditions (Morais et al., 1997; Mettler, 1995). Armed with this adaptive expertise, individuals can make a genuinely informed choice regarding the techniques that better meet their needs in a given situation, continue to learn independent of instruction, and view apparent obstacles as interesting challenges (Bransford et al., 1999, pp. 35-37).

Effective Use of Low Vision

Structured Discovery Learning does not discourage the utilization of low-vision techniques and devices once training in the non-visual techniques has been completed. Rather, it emphasizes the full development of expertise in the utilization of non-visual techniques, and the learner's development of the understanding that safe and successful functioning in the world is not dependent upon visual function. This success instead results from a well-developed sense of self-efficacy and the proper application of the appropriate skills and knowledge. Armed with a set of highly effective cognitive skills, such as environmental information-gathering and problem-solving techniques, as well as mastery of the non-visual skills necessary for safe and effective travel, the learner can explore the environment while independently incorporating visual and non-visual information. (Mettler, 1997, 1995; Olson, 1982). This is accomplished as unfamiliar non-visual sources of environmental information are effectively synthesized to form a complete understanding of the environment (Morais et al., 1997, p. 7; Mettler, 1997; Olson, 1982).

Once the non-visual alternative techniques are fully developed and the individual has the necessary confidence to utilize them at an optimum level, the incorporation of low-vision devices can be pursued as an additional option among a broad range of other highly reliable and effective alternative techniques rather than relying upon these devices as a necessity for independent management of the environment (Olson, 1982; Mettler, 1995). In Chapter 9 of his book *Cognitive Learning Theory and Cane Travel Instruction: A New Paradigm*, Mettler (1995) provides a thorough explanation of the means through which the Structured Discovery learning model can be employed in providing low vision instruction. Once a learner has truly mastered the non-visual techniques for independent travel and refined their information-gathering and problem-solving skills, they will enjoy the ability to move independently and safely through the environment. The use of non-visual travel skills actually facilitates the development of low-vision techniques. The learner is free to focus attention on developing the methods and

associations between visual images and knowledge of actual conditions that are developed through interaction with their surroundings. To a great extent, many of these skills can be developed independently. Where necessary, the instructor can assist the learner in this process by introducing techniques such as visual scanning, utilizing effective search patterns, eccentric viewing and making a referral for a low-vision evaluation. In this model, the longer white cane is viewed as not merely a tool for non-visual travel but also as a highly effective low-vision device. This is because the longer cane permits the partially sighted traveler to fully commit available visual attention to functions other than those related to locating objects and drop-offs (Altman, 1996; Dodds, 1984, p. 21).

Placing primary emphases upon the development of low-vision techniques as superior or preferable to the use of non-visual techniques, as is seemingly suggested by LaGrow & Weessies (1994), is not recommended by Structured Discovery cane travel instructors. Similarly, the frequent incorporation of low-vision devices into O&M instruction is not generally practiced. Extensive reliance on low vision, to the exclusion or diminution of instruction in non-visual techniques, tends to reinforce the belief that vision is critical to safe and effective independent travel. Early introduction of low vision techniques and devices may also have a negative impact on the learner's ability to effectively learn and incorporate more reliable non-visual techniques into their travel (Mettler, 1995; Olson, 1982).

The focus on low-vision techniques and devices, together with primary instructional emphasis centering on the individual's remaining vision, will generally enable a learner to complete O&M instruction more rapidly than the individual who is learning non-visual techniques. This short-term benefit is offset, however, because this approach often necessitates the provision of additional O&M instruction one or more times during the remainder of a person's life. In fact, as our society becomes ever more mobile, recidivism among those who have previously completed O&M instruction will likely increase, because a change in life situation, visual acuity, or environment will diminish the effectiveness of residual vision. Conversely, when non-visual skill development precedes the application of low vision techniques and devices in the instructional sequence, the use of residual vision can enhance the learner's travel and prove quite beneficial. Changes in visual acuity, lighting, or environmental conditions will certainly be noted by the traveler who is primarily trained in the use of non-visual skills; but they will not significantly impact the ease and efficiency with which the individual travels. Impacting positively on the present shortage of trained professionals in the field of O&M is the fact that recidivism is virtually non-existent among persons trained in Structured Discovery cane travel.

Environmental Modifications and Electronic Travel Aids

The utilization of electronic travel aids and efforts to achieve environmental modifications continue to occur frequently within the mainstream of the O&M profession (Barlow, Frank, Bentzen, & Sauerburger, 2001; Gallagher & de Oca, 1998; Blasch, Long, & Griffin-Shirley, 1989). The Structured Discovery instructional model supports the belief that neither electronic travel aids nor environmental modifications are appropriate in the majority of situations. Exceptions may occur when access to normally relied upon environmental information is not available or when the available environmental information is not conducive to safe and effective functioning, e.g., electronic travel aids may assist individuals with a significant loss of auditory

or tactile function, and accessible traffic control signals can be helpful at intersections where environmental conditions or the complexity of the intersection design clearly denies access to appropriate information (Mettler, 1995, pp. 109-113).

Environmental modifications, such as tactile warning strips at intersections and at the edges of train platforms, are often presented as necessary elements of accessibility for pedestrians who are blind (Bentzen & Barlow, 1995). The ease and independence with which blind persons routinely travel in areas devoid of these modifications stands as testimony to the fact that they are not necessary when proper training is provided. The presence of these physical modifications may also suggest to the general public, professionals who work with the blind, O&M instructors new to the field, and blind persons themselves that non-visual techniques alone are ineffective and unsafe. These modifications are undoubtedly well intended and may be primarily aimed at increasing safety for individuals with secondary disabilities or those individuals having limited access to effective O&M training (Barlow et al., 2001; Gallagher & de Oca, 1998). However, their increasing prevalence raises serious concerns in the minds of structured discovery instructors regarding the reliability of artificial environmental modifications and their impact upon the lives of blind persons. This seems evident in regard to their potential both to negatively shape self-image and to reinforce common stereotypes (Mettler, 1995).

Route Travel and Human Guide

Route travel techniques are sometimes employed within the Structured Discovery model, usually in the initial stages of training. They can be beneficial in providing learners with access to basic necessities, such as public transportation stops or grocery stores. This type of heavily guided instruction is normally withdrawn as quickly as an individual's skill development will permit, often within a few days after beginning training. For learners with cognitive or other types of disabilities, which can slow their progress in acquiring new skills; the nature of the Structured Discovery Learning approach allows for adjustment to accommodate additional one-on-one instruction, intensive monitoring, specific routes, and other strategies for achieving an appropriate level of independence (Mettler, 1995).

In the Structured Discovery model, sighted guide assistance may be provided by blind persons as well as those who are sighted. It is, therefore, referred to as human guide, a term which encompasses this underpinning. The human guide technique is generally presented near the completion of training. Since learners at this point will have developed highly refined non-visual techniques for independent cane travel, instruction in the guiding technique is rather brief, and confined to presentation of the basics of proper arm and hand positioning. Primary instruction in this area centers on how one can act as a human guide and only touches briefly on being guided by another traveler. Guidance techniques are postponed until near the end of training, because there is a long established expectation on the part of instructors that the learners have full responsibility for their personal safety and, therefore, will utilize their canes while being guided and automatically make the effort to maintain orientation. While this method of travel is not defined as a form of dependent behavior, it is strictly discouraged during the course of travel instruction, since it would likely create a circumstance in which the learner was not relying upon personal non-visual skills or refining problem-solving techniques. An exception to the rule of late introduction of the human guide technique may occur in home teaching situations, especially

with older individuals. Here, human guide techniques are often introduced in conjunction with basic cane techniques to facilitate safe travel between lessons during the early stages of training. Human guide is not emphasized as a form of independent travel but is, instead, viewed as one of several alternatives for walking with another person. For example, it may be used for the purpose of following that person to a given location, staying with an individual in a congested or complex environment, or maintaining an effective distance for conducting a conversation (Boone, 2001; Jernigan, 1993).

The novice traveler experiencing the normal frustrations associated with the development of a new set of skills, and having many of the commonly held misconceptions regarding blindness, will be only too eager to rely on a human guide, particularly when traveling in an unfamiliar area. This reliance is reinforced by the introduction of the human guide technique during the initial stages of travel training. When this technique is referred to as independent travel, the learner's own expectations are immediately diminished because, now that they are blind, they may perceive the meaning of their own independence quite differently than they did previously. An individual who is new to blindness and/or unaccustomed to non-visual travel techniques tends to perceive sighted assistance as essential to independent movement. It follows naturally then that this individual would view traveling through the assistance of a human guide as simply superior to any form of travel that does not incorporate the use of vision (Mettler, 1995; Olson, 1982). Early introduction of the human guide technique may cause the individual to rely upon a sighted guide much more often than is appropriate, since this method was introduced as the first means of independent travel by the professional instructor who was perceived as an authority on this subject. The level of interest and effort put forth in developing and refining the more demanding techniques of independent cane travel may also be reduced when human guide is presented early and emphasized as an acceptable alternative method of independent travel (Mettler, 1995; Olson, 1982). Finally, such an emphasis on human guide tends to reinforce or even create an expectation on the part of the learner that the appropriate social role of a blind person is a passive one (Mettler, 1995).

Cognitive Learning

Any instructional practice has certain core values and goals at its heart. For example, the relationship between the instructor and the learner, which encompasses the beliefs held by both and how such practices either implicitly reinforce or challenge those beliefs. Of vital significance are the knowledge and skills developed and refined through the instructional process and how well-prepared a learner is to independently adapt to changing conditions and learn from future challenges. As blind persons are first introduced to O&M training, it is understandable that they will experience significant apprehension, and even fear. These individuals may often hold low expectations regarding their capacity to function independently and will not accept the premise that non-visual techniques can adequately meet their daily needs without the regular intervention of others having vision. They may also often perceive their own independent movement through the environment as complex, uncertain, difficult, and dangerous. Vision is considered a critical element in accomplishing nearly any of their daily activities, especially safe and effective independent travel (Mettler, 1997; Olson, 1982).

Individuals new to blindness frequently experience a sense of embarrassment and even shame in being regarded as blind. They may typically gravitate toward behaviors and strategies that attempt to hide their vision loss from others. These efforts to utilize visually grounded techniques and avoid the appearance of having a significant vision loss can lead these individuals to engage in methods that are inefficient, cumbersome, and at times even dangerous in order to maintain what they believe to be a more independent lifestyle. At the same time, these individuals may develop a strong dependence upon the assistance of others, such as family members, who enable them to maintain what they perceive as an appearance of normal functioning (Jernigan, 1993; Mettler, 1995, p. 27; Schroeder, 1995).

The process of learning to travel independently as a blind person may be further hampered by practices such as the exclusive teaching of route travel and suggesting that variation from the specific instructions of a practitioner by a student could result in serious consequences to their well-being. Additionally, employing phrases like *prescribed cane* may infuse into the instructional curriculum a clinical atmosphere which serves to set the instructor apart from the student in a detrimental power structure (Mettler, 1995).

Mettler's (1995) Cognitive Learning Theory, which is fundamental to the Structured Discovery model, emphasizes active learning, rather than the more conditioned response which is generated by behavioral learning methods such as shaping and chaining. A behavioral learning approach requires the instructor to present the behaviors necessary to carry out a task, solve a problem, or recover from an error (Driscoll, 2000, pp. 251-252; Mettler, 1995, pp. 32-34). The learner is then called upon to use this information and modify behavior accordingly. This type of guided instruction is applied in the Structured Discovery Learning model when assisting a learner to develop skills that are repetitive, require little adjustment to environmental conditions, and are appropriately used automatically, such as the development of a proper cane arc (Dodds, 1984, p. 6; Mettler, 1995, pp. 33-34).

Because of its grounding in cognitive processing and self-monitoring in the overall provision of instruction, Structured Discovery learning recognizes that new knowledge will be best incorporated into the learner's existing knowledge when it is discovered by the learner, rather than presented by the instructor for memorization. This approach also allows the learner to discover errors in reasoning and assists in the development of highly effective environmental information-gathering and problem-solving skills. Most adult learners will likely be able to focus a larger portion of their O&M instruction on learning to use their existing knowledge to achieve success, as compared with young children who will need to focus to a greater degree on exploring the environment for the purpose of discovering new knowledge. What emerges for all learners is the critical skill of problem solving. This skill is derived through effectively drawing upon relevant existing knowledge, gathering environmental information, and combining both elements in order to chart and follow a course to the desired destination (Anderson, 1996; Bransford et al., 1999, p. 127; Mettler, 1997).

Structured Discovery Instruction

The primary focus of the Structured Discovery cane travel experience centers on the learner

developing self-monitoring, environmental information-gathering, and independent problem-solving skills. Any information which is provided by the instructor during a lesson is information the learner did not have the opportunity to obtain through the deliberate practice of these skills. This instructional practice allows the learner to acquire knowledge of the implicit environmental features that play an essential role in the development of open motor skills. For this reason, the majority of the verbal information provided by the instructor during the travel experience is confined to asking a leading question or providing an occasional prompt. The experiences of discovery instructors (Boone & Boone, 1997) along with current research on learning (Bransford et al., 1999) seems to indicate that the use of Socratic questioning is the most effective method for ensuring that both explicit and implicit knowledge are well-developed during the instructional process. For further information on the Socratic approach and the role it plays in learning, the reader should refer to Ericsson and Charness (1994), Hodges and Lee (1999), Mettler (1997), and Magill (1998).

To assure that the learner's attention is focused on relevant environmental information for use in self-monitoring, feedback from the instructor is generally withheld until the conclusion of the travel lesson or until the student has resolved a current problem situation. This practice encourages the learner to further refine self-monitoring techniques while not depending upon information from the instructor to resolve the problem. This is important because, each time the instructors become the problem solver for the students, they risk undermining the students' confidence and ability to resolve problems independently. The requests from the learners for feedback during the travel experience are generally met with a quiet "What do you think?" This may be followed with the instructors prompting the learners by guiding them to assess their present situation and focus on the desired outcome.

Upon successful completion of the lesson, the experience is typically followed by a frank discussion between instructor and learner reflecting upon the exercise just completed. This allows the individual to focus full attention on self-assessment, thereby refining their self-monitoring skills. Since some degree of extrinsic feedback is important to learning, the instructor will provide feedback where appropriate, especially in regard to those aspects of the learner's performance that were not correctly self-assessed. This feedback will sometimes be direct; however, more frequently it will be presented through questions and prompts that assist the learner to draw upon existing knowledge and previous experiences (Magill, 1998; Mettler, 1997; Schroth, 1997). Additionally, the instructor taught under the structured discovery model will have been trained through an extensive immersion experience under sleepshades. Having experienced many of the same problems and frustrations that the learner is currently facing, the instructor can serve as an invaluable role model by sharing his or her experiences and the increased sense of confidence and efficacy which stems from successful resolution of these travel problems.

Close monitoring of learners is practiced in the initial stages of travel training, especially while basic cane techniques are being developed. Close monitoring is also exercised whenever necessity requires students to enter a highly demanding environment before they have mastered the necessary skills to negotiate these conditions independently, i.e., around construction, heavy traffic, or large crowds. Instructors transition from continuous monitoring (accomplished while walking right behind the learner) to monitoring from a distance, to periodic observation as early as possible in the training process. This fading occurs only as the learner develops efficiency in

self-monitoring skills and is demonstrating sufficient problem resolution to maintain safety. The instructors note and track this skill development, because they continue to observe the learners at intervals during the completion of each lesson, intervening when necessary, using their better judgment, training, and experience in determining when intervention is appropriate. Individual instruction and increased monitoring recurs with the introduction of significant new skills, such as crossing lighted intersections or using public transportation. Monitoring and intervention are again reduced as quickly and to the greatest extent possible based upon the learner's ability to self-monitor. As the instructional process approaches its conclusion, the instructor's role will often be reduced to the level of providing assignments at the beginning of a lesson, occasional observation of the student from afar, and discussions at the conclusion of the independent travel experience. This is facilitated through positive reinforcement and constructive feedback to encourage the learner's recognition of successful and unsuccessful strategies and outcomes (Morais et al., 1997, p. 2; Mettler, 1995, p. 39).

Throughout the instructional process, it is essential for the instructor to assign independent travel exercises, which require learners to utilize their skills between lessons. Incorporating these skills into other life activities will not only speed the learner's skill development and confidence, it will enhance their ability to transfer skill sets from one situation to another (Bransford et al., 1999). Informal or recreational travel activities in the community are also encouraged for the recipient of home-based instruction. Such activities are incorporated into the curriculum of residential training centers employing the Structured Discovery model. This type of instruction will foster the individual's desire and ability to engage in normal independent travel within their communities. It is essential that individuals who have completed O&M training continue to use their skills regularly. Lack of use can diminish the sharpness of travel skills and confidence. The unfortunate consequence may be that the individual comes to believe that additional instruction is needed, especially when changes occur in the individual's living arrangements or visual acuity.

Rote memorization does play a role in Structured Discovery instruction. It is quite useful in assisting learners to rapidly acquire information, which is clearly important to a given task and is not transferable to another situation. Street names and address location patterns in the area where a student will travel are examples of this kind of information. Guided instructional methods are initially employed when providing instruction in the use of the various cane techniques, because these skills are of a repetitive nature, require little adjustment in response to environmental conditions, and should quickly become automatic. These types of skills are learned most efficiently through the provision of explicit information and extrinsic feedback. Without such specific guidance, errors could be incorporated into the repetitive skills being taught, which would then be difficult to extinguish due to the tendency of the skills to rapidly transition into procedural memory (Anderson, 1996; Mettler, 1995, p. 58).

Because rote memorization produces specific patterns or routes of travel, the information gained in this manner is generally not transferable. Skills that are broken down into elementary component behaviors and then presented in a final form to be learned through rote memorization, or through behavior modification techniques such as shaping and chaining, are especially vulnerable to becoming extinct, particularly when they are not developed in concert with more actively participatory skills such as evaluation and problem-solving (Anderson, 1996; Driscoll,

2000, pp. 251-252). For this reason, rote learning is generally not used to instruct a student in the means of moving from point A to point B. Exceptions occur when working with persons with significant developmental delays, mental retardation, or severe head injuries. Persons who experience these additional disabilities often benefit from patterning, making rote memorization appropriate and useful in assisting them to gain independence.

When working with the majority of learners, Structured Discovery instruction employs a learning strategy that permits naturally occurring events to be incorporated into the instructional process, while assuring that these events provide the most effective level of learning with good transfer and retention (Mettler, 1995, pp. 33-34). By its very nature, this approach eliminates the need to specify a detailed sequence of behavioral steps to complete a travel assignment. While the learner's behavior in its final form will probably closely resemble the behavior that would result from either rote memorization or behavior modification techniques, it fosters the development of several layers of learning which are not customarily achieved through guided instruction. While this learning style requires greater effort and commitment of time on the part of both learner and instructor, it results in the development of skills which are directly connected with naturally occurring events. A student who has planned and executed a travel route has had the experience of detecting errors as they are made, employed a variety of techniques for gathering relevant environmental information, and practiced critical problem-solving skills. This learner has been able to focus specifically on the task of recovering from the error, which will have the consequence of strengthening the individual's personal sense of self-efficacy. This exercise assists greatly in the development of skills that are truly transferable and will have a high rate of retention (Bandura, 1997; Mettler, 1995, pp. 33-34).

Instruction, which centers on route travel training or approaches that provide limited variation of environmental conditions, can produce skills that are not readily transferable. Implicit knowledge, i.e., information related to the performance of a task that the learner is not aware of learning, is a form of knowledge that is difficult to verbalize and is usually learned through experience rather than instruction (Magill, 1998; Lee & Vakoch, 1996; Mettler, 1995, pp. 14, 59). This implicit knowledge is developed without regard to the type of learning process the individual is engaged in, and the awareness of strategies that are related to performance are as difficult for the instructor to identify as they are tacit for the learner. Therefore, should the learning environment offer little variation, such as is the case in route travel lessons or other rote memorization practices, the learner is as likely to rely upon those that are only relevant to a specific task or route as upon those that are transferable across conditions (Magill, 1998; Mettler, 1995, p. 41).

As the student advances to the intermediate level of ability, the instructor may accompany the learner to an unfamiliar area, rather than researching and becoming familiar with the location in advance of the lesson, as is generally the case. The resulting lesson is focused upon the techniques for self-orientation, with the instructor acting as a model for the exercise. In this way, the instructor is able to demonstrate the necessary skills and assist the learner in developing them for transfer to future situations.

The Use of Sleepshades

As previously indicated, mastery of and ultimate reliance on non-visual techniques is vital to Structured Discovery cane travel. Low-vision techniques and devices, when applicable, serve to enhance and augment these skills but do not form the underlying framework on which a lasting body of knowledge can be built. In order for non-visual alternatives to be truly effective for a partially sighted traveler, they must become the individual's automatic first choice in managing the environment. Research from Mettler's (1995) Cognitive Learning Theory indicates that the development of expertise in any skill requires extensive practice in those conditions that most closely reflect the circumstances in which the skill will be utilized (Bransford et al., 1999). In the case of non-visual techniques, this would be in circumstances where vision is not an available resource. Accordingly, the sleepshades are simply the most effective tool for creating experiences for the learner that require full reliance upon the non-visual alternative techniques across conditions (Morais et al., 1997; Mettler, 1995). It is important to note that once expertise in independent non-visual travel is developed, as with any set of skills, there is a need for ongoing deliberate practice of these skills in order to maintain them. The development of expertise through the instructional process encourages a philosophy that views learning as a valuable, continuous process and regards challenges as desirable opportunities for learning. Through such a philosophy, travelers will enter challenging circumstances with the confidence in their ability to address the demands they will face and may deliberately do so as a result of a metacognitive interest in the benefits the challenge will provide in maintaining and expanding their skills (Bransford et al., 1999, pp. 20-21; Ericsson & Charness, 1994; Magill, 1998; Mettler, 1997).

In order to understand the importance of sleepshades, or the blindfold, and the longer cane design in providing O&M instruction, it is necessary to first develop an understanding of the use of these tools in the Structured Discovery teaching model. Perhaps the most critical reason for using sleepshades is that they cause the learner to rely exclusively on non-visual sources of information. This reliance ultimately alters the expectations students have of themselves as blind persons. In what some instructors refer to as a *blindness model*, it is recognized that the majority of persons entering O&M training believe that non-visual techniques are inferior to those based upon vision. The sleepshade creates a mechanism through which this misconception can be dispelled. When learners experience success in the performance of a task that is equal to that of a person with normal vision while utilizing the sleepshades, effectively removing vision as a factor in the performance of the activity, they have the opportunity to obtain firsthand experience. It is this firsthand experience which is more likely to lead them to conclude that the non-visual alternatives are truly effective and equal to those based on visually-grounded techniques (Mettler, 1997; Olson, 1982).

For purposes of the Structured Discovery learning model, a functional definition of blindness is key. Functional blindness occurs when an individual's vision cannot be relied upon to efficiently accomplish any or all of the activities for which sighted persons use their vision. The word *efficiently* is central to this definition, particularly in the case of individuals with residual vision. These persons may be able to accomplish a task or engage in an activity using their remaining vision. However, they will generally be less efficient in so doing, taking longer to complete the task or activity than will their sighted colleagues. Conversely, the blind person who develops non-visual techniques, which are truly reliable across environmental conditions, will equal the sighted individual in terms of the ease and efficiency with which they can complete an otherwise

visual task or activity. Certainly, there is a natural tendency for partially sighted persons to attempt to rely upon their vision, because this is what is socially acceptable and very probably what they are accustomed to doing. Therefore, in order to develop the natural habit of relying primarily upon those techniques that are dependable across virtually all environmental conditions, they must have the opportunity to experience (through direct and extensive use thereof) complete reliance and confidence in these non-visual techniques (Mettler, 1997; Olson, 1982).

In residential or group training settings, it is likely that there will be blind persons experiencing a wide range of residual vision and visual function. The prevailing societal belief that vision is the most effective and efficient means of gathering information and accomplishing tasks is not confined to the sighted population. These same socially-held expectations and beliefs will be operating in the training environment, causing persons to be viewed as more or less capable and more or less fortunate, depending upon their visual acuity. Those individuals with some degree of functional vision will likely feel obligated to assist those in the program who have a lesser degree of functional vision. Persons who have little or no vision will generally expect that those with more useful vision should and will provide this assistance. Structured Discovery Learning theory holds that this creates two significant problems. The first of these is that persons with the least amount of vision will be deprived of many opportunities to learn, because they will receive continuous assistance from their fellow trainees who have better sight. Secondly, when partially sighted persons believe themselves to be more competent than those having a lesser degree of visual function, how can they view themselves when compared to persons with normal eyesight? Will it not be natural for them to conclude that they are simply less competent? This construct is known by the structured discovery approach as the hierarchy of vision, and the deeply held, unfounded implicit beliefs it generates can create an artificial barrier that limits the expectations that all blind persons hold for themselves (Olson, 1982).

These same beliefs can negatively impact the expectations held by professionals both in work with the blind and society in general. Therefore, the use of sleepshades increases the individual's self-expectations and self-confidence by creating a situation in which learners can discover for themselves that skill and ability are not direct functions of vision.

According to cognitive psychology, attention is a limited resource. This is to say, there are clear limitations as to the level of attention an individual can devote to a given task (Leahey & Harris, 2001, p. 145; Mettler, 1995, p. 56; Miller, 1956). When an individual undertakes the learning of alternative travel techniques, while continuing to use existing vision to navigate through the environment, the limited resource of attention is divided. Further, simultaneous application of visual and non-visual techniques when neither are polished detracts from a learner's ability to focus on relevant aspects of the environment. The result is that the learning of non-visual techniques is negatively impacted. By removing the overwhelming, and often unreliable, stimulus of partial vision, the sleepshades allow the learner to focus attention on the learning of the non-visual techniques which are beneficial to consistent, continuous, independent mobility (Mettler, 1997).

As was discussed earlier in this chapter, in order to achieve expert performance in a given skill, a learner must have extensive practice in the type of conditions in which the skill will be

conducted (Ericsson & Charness, 1994). In fact, to ensure that these skills will be reliable across virtually every possible situation, extensive practice under diverse conditions is necessary. Of particular importance to the learner with partial vision is the development of skills necessary to travel safely and independently in situations, which are adverse to visual functioning. While the provision of occasional evening lessons can begin to address this need, extensive practice utilizing the sleepshades offers more consistent, overarching, and effective means of developing and perfecting this critical skill.

In providing O&M instruction, it is essential that both learner and instructor feel certain that the most reliable alternative mobility skills are learned and properly applied. In the case of a partially blind person, the most reliable techniques are non-visual, because they are not affected by changes in lighting or modifications to the natural or built environment. Without the use of the sleepshades, neither the learner nor the instructor can be certain that non-visual skills are being fully developed, because the learner could be incorporating, and depending up on, existing visually based techniques that are not reliable. The O&M instructor uses a learner's performance and comfort level to determine when it is appropriate to introduce the next level of challenge. Visually based performance could create the mistaken impression on the part of both the learner and the instructor that non-visual skills are being well developed. As a result, the instructor could move the learner forward, eventually reaching a level of environmental demand where the available degree of visual function is not sufficient to meet the challenges generated by the environmental conditions. In such a circumstance, since the individual has not actually learned the non-visual techniques that would be appropriate to the situation, the learners' skills and abilities to self-monitor are likely to be overwhelmed. Aside from the obvious problems that such a situation could create, this type of experience could potentially reinforce the learner's belief that non-visual techniques are neither effective nor reliable, because there is the probability that the learner will not recognize the degree to which vision was relied upon during training up to this point (Mettler, 1995, p. 76; Olson, 1982).

There are times when an individual fails to use sleepshades properly or consistently. This is generally due to fear, lack of confidence, or, in some cases, oppositional behavior. Proper and consistent monitoring by instructors who are sighted or blind throughout the instructional continuum will lead to the discovery of this problem in nearly every case. In addressing this type of behavior, the most effective recourse is to begin by determining its underlying cause. The learner is then returned to working in a less demanding environmental situation and monitored more frequently until their fear is diminished and self-confidence increases sufficiently to take on a greater challenge. In cases where the underlying cause of sleepshade lifting is oppositional behavior, counseling and philosophical discussion may be necessary before the learner is prepared to move forward once more with the sleepshades being properly utilized.

Instances and situations do exist in which the use of sleepshades is inappropriate. For example, relatively brief exposure to the sleepshades in conjunction with a trust exercise, or under the guise of increasing individuals' understanding of blindness, may instill more fear than enlightenment in the mind of the participant. The intermittent utilization of sleepshades during learning experiences is also not very beneficial. In this instance, the learner spends such a limited amount of time engaging in the use of non-visual alternatives that these skills are experienced but not incorporated into the traveler's skill set. These practices can create a circumstance in

which the participant, who is new to non-visual techniques, will likely draw comparisons with long-established and well-refined visual functioning. This can prove harmful in that these practices have a high probability of reinforcing the fears and misconceptions that are held by the participants regarding blindness (Boone, 2001; Mettler, 1995, pp. 95-96; Olson, 1982).

The intermittent use of sleepshades continues to be a relatively common practice. For example, they are often used to simulate the conditions of night travel, where the learner's available vision is ineffective. In this instructional practice, the learner receives training in the utilization of low-vision techniques, perhaps including low-vision devices that may or may not be incorporated with non-visual techniques. In daylight, well-lighted conditions, or those specific conditions that are most conducive to the individual's visual functioning, the learner is introduced to techniques that are intended to maximize their ability to make optimum use of partial vision while incorporating, where necessary, non-visual techniques. The learner may be exposed to a variety of environments or oriented to specific locations while utilizing these techniques. The sleepshades are then used to address travel through these same environments under conditions that are not conducive to visually-based functioning. Instruction in non-visual techniques is provided to the learner while under the Sleepshades. Proponents of the Structured Discovery approach believe that this practice generates inappropriate and faulty comparisons on the part of the partially sighted learner. Low-vision techniques and devices, by their very nature, are intended to emphasize and enhance a very familiar and socially accepted method of gathering environmental information, while non-visual techniques are less familiar, less socially valued, and less likely to have been adequately practiced and refined either before or during the current learning experience. In this case, the learner is likely to have a much more positive experience while traveling through those conditions where the very familiar visually-based techniques can be utilized than when traveling under conditions where non-visual techniques are necessary. Structured Discovery proponents point out that in this situation, the learner's expectation that visually-based methods of travel are superior to non-visual ones will be reinforced by this experience; and that the true reason for this difference in performance—the inadequate development of non-visual techniques—is unlikely to be recognized.

Instructor Preparation and Sleepshades

Sleepshades are used extensively in preparing instructors to teach Structured Discovery cane travel. They are not used for the purpose of increasing sensitivity to the limitations that blindness can create, but rather, to raise awareness of the true potential of properly trained blind persons. This is ideally achieved through extensive experience with non-visual techniques so that the thoroughly trained instructor is as comfortable with non-visual travel methods as his or her students will ultimately become. Relatively brief exposure to sleepshade training provides the normally or partially sighted instructor trainee with only the most basic of blindness travel skills. When comparing these limited skills with the ease and freedom with which the trainee travels using vision, it is difficult to conclude that non-visual techniques are sufficient to sustain independent living. These methods will certainly not be viewed as equal to visual travel techniques. On the other hand, should the instructor trainee receive extensive sleepshade training in a broad range of non-visual skills, including independent cane travel, there will be a very different outcome. This is especially true if at least a portion of instructor training is presented within the environment of an Orientation Center, where the trainee can freely observe consumers

receiving this same training. When training is complete, this instructor will have a firsthand positive experience with non-visual techniques upon which to draw when instructing others. Additionally, the instructor comes to recognize through the observed progress of others, especially those achieving a higher degree of skill development and refinement where non-visual techniques produce a level of freedom, success, and independence in traveling about, which is truly comparable to that enjoyed by sighted persons.

History of the Long Cane

Practitioners of the Structured Discovery learning model recognize and acknowledge the important contributions of Dr. Richard Hoover and other pioneers of O&M in first introducing the long cane as a tool for independent travel, rather than a mere symbol of blindness intended to inform the general public in order to solicit aid or evoke increased levels of caution from motorists (Mettler, 1995). Hoover's pioneering work culminated in the development of a systematized approach to instruction and the development of a cane to be used for probing in front of the traveler for locating obstacles. This profession was first labeled *Foot Travel* and was used with the blinded soldiers returning from the battle fields of World War II (Kozel, 1997).

One protocol that emerged from this early Veterans Administration model of O&M instruction was the prescriptive determination of cane length. The cane was measured at sternum height. At the time, theories regarding cane length were established primarily out of trial and error rather than through research or science. Due to the fact that this early instruction occurred in the medical ward of an Army hospital, it seems that the terminology and perspective of these early instructors reflected a view that a clinical, scientific-like approach would better lead to the development of the most effective mobility device and related techniques. While there have been refinements to the original long cane design; including minor modifications in length, handle, tip design and materials, changes to the basic configuration of the cane have been of a conservative nature.

It should be recognized that blind persons have been employing and individually developing the cane or staff as a tool of independent travel for centuries. Despite this history, many of the contributions of these early pioneers have gone largely unrecognized or unappreciated in the research literature. In addition, the mainstream writings on orientation and mobility have, for the most part, not recorded, or made case study of the true travel experiences of accomplished blind travelers (Schroeder, 1994).

The introduction and propagation of the longer cane over the course of the last forty years, has been primarily consumer-driven. The development of its design and proper utilization emerged from the experiences of skilled blind travelers who wanted a travel tool that placed them at the best advantage when traveling. The length of the cane as well as its material properties has been developed to match the requirements for safe and efficient everyday travel. This vital travel tool, the nature of its development, its composition, and the manner in which it is utilized are reflective of the Structured Discovery Learning model and complementary to its learning objectives.

Despite the relative absence of the contributions of persons who are blind to the field of O&M in the literature, the longer white cane design and the techniques related to Structured Discovery cane travel have continued to evolve, largely through the efforts of blind persons themselves. This development was initiated at the Iowa Department for the Blind in the late 1950s and early 1960s. Further refinement and development of the cane design and techniques continues today, through The National Federation of the Blind, The Professional Development and Research Institute on Blindness, The Nebraska Commission for the Blind and Visually Impaired, and other private and public agencies serving the blind. Schroeder (1994) writes

In the cane length controversy, the real scientists were blind people who refused to accept the status quo and experimented with new canes, new materials, new lengths, and new techniques until they were able to reach a level of functioning commensurate with their elevated expectations. (p. 8)

Instructors in the Structured Discovery Learning approach tend to refrain from prescribing a cane length. They will, however, recommend an appropriate cane length for meeting the needs of new learners, and may even require them to use a particular length of cane until the completion of training. Throughout this process, there is a clear understanding that once training has been completed, learners are free to choose a length of cane that they prefer or, for that matter, to decide whether or not they choose to use a cane. Throughout the training experience, the instructor will work in partnership with the learner to determine any adjustments to cane length that may be appropriate. The cane length recommended is not based upon clinical trials or computer models but on the tried and tested experience and judgment of instructors who have learned from the experiences of countless independent travelers. A learner's first cane is generally recommended at a length which reaches approximately to the traveler's chin. As training progresses, the length of the cane may vary to meet the changing needs of the individual (Altman, 1996).

Among the advantages of the longer white cane is its increased environmental preview, which provides greater reaction time for travelers and its lighter weight material, i.e., fiberglass or carbon fiber, which permits a longer cane shaft without increased weight. In addition, the resonance that results from the fiberglass materials and metal tips will enhance echo feedback from the environment. This type of cane is also more effective at allowing its user to discriminate between the texture and composition of ground surfaces. Finally, the length and round grip can be more comfortable for the user's arm position, allowing for greater endurance while traveling (Morais et al., 1997, p. 8). The development of the graphite or aluminum cane, which is commonly measured at sternum-length, had its origins in those environmental factors that were perceived to be of critical merit in the safety of blind travelers while moving through an uncontrolled environment. Based upon these expectations and through clinical trials, the materials and cane length appropriately suited to addressing these concerns was determined (Kozel, 1997; LaGrow, 1996; Wall & Ashmead, 2002). On the other hand, the design of the longer cane resulted from a response to those environmental factors that emerged through the extensive and collective experiences of blind persons traveling in real-world conditions. Many blind persons, through their collective experiences, developed significantly different expectations and concerns regarding which environmental factors were of critical merit to them as

independent travelers. For this reason, they promote a cane that displays those dynamics better suited to addressing these expectations and concerns (Schroeder, 1994).

It is often reported by very accomplished independent cane travelers who were initially trained through the conventional approach that, until provided with the opportunity to truly experience the advantages of the longer cane design, they were not aware of the limitations of the sternum-length cane. This seems to demonstrate that limited exposure and lack of information about the longer cane sometimes results in decreased ease and comfort in traveling for blind individuals. Most Structured Discovery cane travel instructors routinely expose their students to a variety of cane types and lengths. This is done without comment as to the relative virtues and vices of each. We know of no instance in which a student, who has been thus exposed, selects a shorter cane over one that reaches to their chin or above. Some instructors believe that lack of this kind of exposure can result in resistance to the longer cane on the part of some conventionally trained persons. It has been reported that some O&M instructors flatly refuse to provide the longer cane to their students irrespective of its effectiveness, because it bares the name of the National Federation of the Blind (Altman, 1996; Schroeder, 1994). The shorter, heavier design of the sternum-length cane lends itself primarily to the detection of imperfections in the ground surface that may result in tripping. When the traveler maintains a slow and measured gait, this cane is also less effective in detecting obstacles, which project upward from the ground surface, such as poles or tree trunks. In short, this type of cane is intended to clear the area where the ball of the traveler's foot will next land (LaGrow, 1996; LaGrow & Weessies, 1994, pp. 92-94).

By contrast, the longer cane, designed to provide environmental information which lies two to three steps ahead of the traveler, was crafted by the collective experience of many blind travelers in response to extensive interaction with those factors in the environment that most frequently interfered with safe and efficient movement. This aspect of the design facilitates effective detection of obstacles and most of the ground surface conditions that lead to tripping, as well as providing enough reaction time to permit travelers to avoid these potential sources of impediments entirely or with a minimum of abrupt changes of direction or forward movement (Altman, 1996).

Due to the shortness of the sternum-length cane, the prescribed arm and hand position for its effective use requires the arm to be fully extended with the elbow only slightly flexed so that the hand is positioned at waist level and at the center line of the body. The cane is gripped so that the index finger extends along the side of the handle. The flat area along the side of the handle on most graphite or aluminum canes is intended to facilitate the correct grip and position of the cane to allow proper wear and smooth functioning of the cane tip. In this position, the cane is arced across the traveler's path through the movement of the wrist (LaGrow & Weessies, 1994, pp. 115-117; Wall & Ashmead, 2002).

It is generally recognized that following the completion of training, persons utilizing the sternum-length cane will tend to modify the prescribed arm position to increase comfort. This, of course, also diminishes the effectiveness of the cane in providing critical environmental information. A further drawback to the shorter cane is that it fails to provide adequate body coverage for the user, even when a proper cane arc is maintained. This is because the cane is simply too short to consistently span the distance between the traveler's shoulders. Some

evidence suggests that the standard length of the aluminum or graphite cane may not provide information regarding smaller obstacles in the path of travel (Dodds, 1984, p. 6; Wall & Ashmead, 2002).

In contrast, the longer cane design permits the traveler to utilize an arm position that is arguably more relaxed and comfortable, with the elbow bent and resting along the person's side, and the forearm positioned to bring the hand to the center line of the body at waist level. The cane may be gripped with the palm facing upward, and several variants of this grip may be considered by the learner and instructor as the learner gains experience. The cane is manipulated so that it is arced across the traveler's path, through the movement of the fingers rather than the wrist. The nature of the longer, cylindrical cane is flexible to accommodate this *open-palm* technique as well as the traditional grip. Because the cane tip is designed to wear evenly around its circumference, the handle does not have a flat place to remind the user of its correct position, and the cane may be expected to be rotated at times while being used, resulting in no reduction in its functionality. The more comfortable open-palm hand grip and arm position can only be used effectively with a longer cane. Rather than employing a grip and arm position which restrict the rotation of the cane shaft during use in order to maintain the type of wear most conducive to the cane tip design, the longer cane design carries a tip and handle that lend themselves to the use of the open-palm technique, while not preventing a user from using the tighter, forefinger grip. Because its tip wears evenly, this cane will function smoothly and consistently, regardless of whether its tip is new or worn (Boone, 2001; Morais et al., 1997, p. 8). An added benefit to the longer light-weight cane in conjunction with the open-palm grip may reduce the fatigue and soreness that many experienced travelers endure during long trips. These occupational hazards often disappear completely when the longer, light-weight cane is used, particularly when the open-palm grip is employed.

Proponents of the conventional cane design express some concern that the greater length of the longer cane and the arm position that is employed with it may result in greater difficulty in the management of this tool, or perhaps even some danger of injury due to the close proximity of the cane handle to the body while it is being utilized (Dodds, 1984, p. 6). As it happens, the reverse may be true. According to a number of blind individuals who have used both canes, the longer cane actually comes in contact with the user's abdomen less frequently and with less force than the shorter, heavier cane. A number of factors may explain this phenomenon. The more relaxed position of the arm allows the cane to move more freely over the ground, while the smooth aluminum tip glides over uneven surfaces rather than becoming jammed in rough places as is common with many other types of tips. The cane's lightweight, flexible structure and the use of simple techniques in response to the cane encountering obstacles further enhances the fluidity of motion which this cane allows, making it easier and safer for the blind traveler while effectively detecting and interpreting the environment (Boone, 2001).

The established standards of the conventional cane design indicate that it should have a shaft that is straight, tapered slightly for strength, be as lightweight and rigid as possible, with limited conductivity regarding thermal and electric energy, yet be very effective in conducting tactual information. In addition, it should also be durable, well balanced, and relatively quiet (LaGrow & Weessies, 1994, pp. 91-93). These standards are not unreasonable, if the manner of their application is adequately addressed. In order to maximize the effectiveness of the long cane as a

tool for independent travel and to enhance its ease of use, the lightweight nature of the cane design is of greater priority than the degree to which it is rigid. In fact, some degree of flexibility is desirable in regard to reducing impact shocks being transmitted to the hand of the user and the durability of the cane when being utilized in congested conditions. The standards for thermal and electrical conductivity are certainly sensible ones, but it is interesting to note that the material of choice for the majority of canes manufactured to the conventional standards is aluminum, which is highly conductive of both thermal and electrical energy. In regard to tactual conductivity, the differences between the two types of canes may be subjective; however, proponents of the longer fiberglass or carbon fiber cane design consider the resonance of these materials to be superior to aluminum and believe that these materials are better suited to providing the sort of information that experienced non-visual travelers find useful.

It is not an uncommon practice for O&M instructors to issue folding canes to their students. Some evidence suggests that this practice stems from the policies of many programs restricting to only one the number of canes an instructor may provide. Since the new student of O&M is more concerned with storing the cane than with its optimum use, instructors know that they will meet with less resistance from the student by providing a folding cane. Although this approach may be well intended, folding canes with multiple joints and elastic cords running through them are especially heavy and less durable than straight canes, lack flexibility, and act as poor conductors of tactual information. In addition, these canes, whether rigid or folding, are often currently equipped with large heavy marshmallow tips, which produce almost no sound feedback, provide little assistance with echo-location, and easily become jammed in rough pavement or uneven terrain. These features seem rather contrary to the desired attributes of balance, lightness and smooth gliding over rough places, which are such important components of the cane (Boone, 2001; Morais et al., 1997, p. 8).

As mentioned above, one of the commonly accepted standards of cane design is that the cane should be relatively quiet. Proponents of the Structured Discovery approach to cane instruction do not share this opinion. This is not to say that they promote a noisy cane, but rather, view the sound produced by using a cane with an aluminum tip to be particularly valuable during independent travel, and that the nylon or other plastics utilized in the manufacture of tips for canes of the conventional design tend to suppress this potentially useful source of information. The aluminum or metal tip produces a reliable and consistent sound source which can aid in echo-location and the identification of environmental configurations based upon auditory feedback (Dodds, 1984, p. 14). In addition, it provides greater auditory and tactile feedback from contact with the ground surface, facilitating the recognition of surface texture and material density transitions (Boone, 2001; Altman, 1996; Mettler, 1995, pp. 122, 125; Morais et al., 1997, p. 8).

The longer cane design provides increased protection, not only when it is being used in the fully extended position but also when the pencil grip is employed. In the fully extended position, or open-palm grip, the greater environmental preview provides increased reaction time, as compared with the sternum-length cane and, therefore, reduces the probability of physical contact with obstacles that could result in injuries. This greater reach also provides greater access to information relevant to orientation. When moving in congested and unfamiliar areas, the pencil grip allows for a more thorough means of managing and exploring the environment, while

the greater length of this cane provides superior upper body protection when used in this manner. Finally, the greater length of the cane increases the likelihood that it will be seen by motorists as well as other sighted persons, perhaps improving safety in some circumstances (Boone, 2001; Altman, 1996).

The user-friendly characteristics of this cane are well suited to meeting the broader needs of a very diverse population of blind persons. Its lighter weight and flexible design, combined with a manipulation technique that does not require wrist movement, is more appropriate to the needs of persons with joint-related injuries or conditions, such as carpal tunnel, arthritis, or diabetes-related dysfunction. Proponents of the longer cane also emphasize its value in addressing the needs of young children whose fine motor skills have not yet developed sufficiently to allow them to use the extended arm grip without compromising control of the cane. Its lighter weight and greater environmental preview add further to the value of this cane for small children, as it provides a safe and effective tool that encourages environmental exploration, which is essential to proper development. Enhanced environmental preview is also considered to be particularly useful for individuals who have slower than average reaction times, including some older persons and individuals with cognitive disabilities. The excellent tactile resonance of the long, straight cane is quite beneficial to deaf-blind travelers (Boone, 2001; Morais et al., 1997, p. 8).

Emerging out of Structured Discovery Learning theory is the recognition that no matter what the instructors' intentions in providing folding canes to learners as their initial training tool, there is the potential that this will reinforce other beliefs initially held by the learner and may perpetuate dependency and denial-based behaviors. It is argued that the very nature of these types of canes—heavier, less durable, and less sensitive than canes that do not fold—makes them less viable for extensive independent travel activities. Also, the simple fact that they can easily be folded and tucked away in a pocket or purse can facilitate the efforts of learners to hide their blindness from the general public. These factors, combined with the emphases upon the utilization of low-vision techniques and devices and sighted guide techniques as a form of independent travel, could promote the acceptance of a much higher level of dependency than would otherwise be appropriate for some learners (Mettler, 1997; Morais et al., 1997).

Summary

Proponents of the Structured Discovery method believe that societal attitudes about blindness bear heavily on the self-confidence and self-esteem of blind people in our society. While there are skills and techniques commonly used under the Structured Discovery approach, the chapter explained that Structured Discovery is more than a collection of instructional methods and strategies. It is a philosophical view of blindness—a view which regards the major barrier to independence to be misconceptions about blindness, manifested through low expectations and internalized by the individual. Accordingly, it is believed that cane travel instruction cannot be approached effectively independent of its attitudinal context. It is believed that our own attitudes about blind people and their capabilities are revealed through our actions, making it essential to analyze the implicit messages that we convey through our approach to cane travel instruction. The essence of Structured Discovery is to combat negative attitudes about blindness by demonstrating to individuals that they can truly be in control of their independent travel and, indeed, of their lives. Skills are used to stimulate and reinforce attitudinal change. Problem

solving, for example, becomes more than an instructional strategy; it is used as a tangible way of demonstrating to learners that they need not be reluctant to venture into new or unfamiliar places. It is used to show individuals that they have the ability to go wherever they desire—familiar or new—and do so with confidence. It is utilized to help individual learners internalize the belief that blind persons are not damaged, not inferior, and not at the mercy of a benevolent society but merely have a characteristic requiring them to use non-visual methods—techniques and strategies—to travel independently. This is the essence of the blindness model described in the chapter. The blindness model rejects the belief that sight is the standard and that blind people are relegated to lives striving to overcome, or at least mitigate, their inherent deficiency. It rejects the belief that only through professional intervention and elaborate technology can blind people lessen their inferior status.

The information contained in the chapter, together with the recommendations which follow, provide information about the Structured Discovery method as an instructional approach and the steps necessary for O&M instructors to prepare themselves to provide Structured Discovery training. To teach using Structured Discovery, individuals must recognize that low expectations for blind people are pervasive in our society and are inevitably internalized by all of us. Long hours under the sleepshades certainly promote the development of skills but, more important, they force individuals to confront and challenge their own assumptions about blindness. They help instructors develop the habit of continuously challenging the unspoken messages about blindness conveyed by their own everyday actions. This is as necessary for professionals as it is for students. It is not something of which to be ashamed or viewed as a weakness. Internalized low expectations are as inescapable for blind people and those who work with them as they are among any minority group. Blind people need training; they need the skills and tools to travel independently and with confidence; but, above all, they need to understand, to truly believe, that blindness is nothing more than a difference, neither good nor bad, a difference which brings with it particular ways of functioning in the world.

As professionals, it is only reasonable that we will strive to meet the expectations that are properly held for instructors in virtually all fields of study. It is accepted as a matter of course that effective instructors attain and maintain mastery of the skills they teach and seek to utilize the most effective methods for providing instruction (Bransford et al., 1999). Beyond this, if we as professionals really mean it when we say we believe in the ability of blind people to live normal lives, our words and deeds must stand as testament to our beliefs. We must not be afraid or reluctant to face our own low expectations born of societal conditioning. Indeed, it is essential if we are to be able to genuinely assist our students to confront and overcome their own fears and misconceptions about blindness.

Recommendations

- Individuals and agencies interested in the Structured Discovery approach to orientation and mobility instruction should seek further education and training in this methodology, sleepshade training, and the use of the *longer* cane. The following organizations and entities should be particularly interested in learning more:
 - university programs, agencies, training centers for the blind
 - professional service providers and consumers
- Such training could be provided by the Regional Rehabilitation Continuing Education Programs (RRCEPs).
- The National Institute on Disability and Rehabilitation Research (NIDRR) should offer grants for the establishment of training programs, presentation of seminars, production of informational handouts and videos, and other forms of information dissemination relating to Structured Discovery cane travel.
- Programs and service providers who employ the Structured Discovery Learning approach should provide information, training, and partnering opportunities to those who are conventionally trained. For example, Louisiana Tech's O&M program and the Louisiana Center for the Blind may provide training through use of grants and other incentives for continuing education of professional service providers.
- Mentoring opportunities of skilled blind persons knowledgeable in Structured Discovery Learning for blind adults and blind youth should be fostered. An example of this would be the Leadership Education Advocacy and Determination (LEAD) program in New Jersey, where blind adults mentor blind teenagers on daily living skills, particularly in the area of O&M. Here, the state of New Jersey provides technical expertise from an O&M instructor, and the consumers provide the structure.

References

- Altman, J. T. (1996). Fitting the white cane to the real world, point counter point. *Journal of Visual Impairment and Blindness*, 90(7), 292-294.
- Anderson, J. R. (1996). ACT: A simple theory of cognition. *American Psychologist*, 51, 355-363.
- Bandura, A. (1997). Self-efficacy. *Harvard Mental Health Letter*, 13(9), 4-7.
- Barlow, J. M., Frank, L., Bentzen, B. L., & Sauerburger, D. (2001). Comments on the implications of using pedestrian clearance intervals for the safety of the blind and visually impaired. *Journal of Visual Impairment and Blindness*, 95(11), 663.
- Bentzen, B. L., & Barlow, J. M. (1995). Impact of curb ramps on the safety of persons who are blind. *Journal of Visual Impairment & Blindness*, 89(4), 319-329.
- Blasch, B., Long, R., & Griffin-Shirley, N. (1989). Result of a national survey of electronic travel aid use. *Journal of Visual Impairment and Blindness*, 83, 449-453.
- Boone, D. (2001). *Independent cane travel instruction*. Training Seminar for O&M Instructors, Louisiana. Unpublished document.
- Boone, D., & Boone C. (1997). Beyond city sidewalks: The blind traveler in a rural environment. *American Rehabilitation*, 23(3), 2-7.
- Bransford, J. D., Brown A. L., & Cocking R. R. (1999). *How people learn, brain, mind, experience, and school: Committee on developments in the science of learning; Commission on Behavioral and Social Sciences and Education*. Washington, DC: National Academy Press.
- Dodds, A. G. (1984). *A report to N.R.I.B. on a visit to Nebraska services for the visually impaired: Blind mobility research unit*. Report No. 138. Nottingham, England: University of Nottingham.
- Driscoll, M. P. (2000). *Psychology of learning for instruction* (2nd Ed.). Boston: Allyn and Bacon.
- Ericsson, K. A., & Charness, N. (1994). Expert performance, its structure and acquisition. *American Psychologist*, 49(8), 725-747.
- Gallagher, B. R., & de Oca, P. M. (1998). Guidelines for assessing the need for adaptive devices for visually impaired pedestrians. *Journal of Visual Impairment and Blindness*, 92(9), 633-647.

- Hodges, N. J., & Lee, T. D. (1999). The role of augmented information prior to learning a bimanual visual-motor coordination task: Do instructions of the movement pattern facilitate learning relative to discovery learning? *British Journal of Psychology*, *90*(3), 389.
- Jernigan, K. (1993). *The nature of independence*. An address delivered to the National Convention of The National Federation of the Blind, Dallas, Texas, Tuesday, July 6, 1993.
- Jernigan, K. (1995). *Blindness: Handicap or characteristic*. Retrieved September 14, 2003, from <http://www.nfb.org/bm/bm95/brlm9503.htm#1>.
- Kozel, R. (1997). The history of O&M. *Blinded Veterans Association Bulletin* (a six-part series).
- LaGrow, S. J. (1996). The case for the individual prescription of the cane length. *Journal of Visual Impairment and Blindness*, *90*(7), 292-294.
- LaGrow, S. J., & Weessies, M. (1994). *O&M: Techniques for independence*. Palmerston North, New Zealand: The Dunmore Press.
- Leahey, T. H., & Harris R. J. (2001). *Learning and cognition* (5th Ed.). Upper Saddle River, NJ: Prentice-Hall.
- Lee, Y. (1995). Effects of learning contexts on implicit and explicit learning. *Memory and Cognition*, *23*, 723-734.
- Lee, Y. S., & Vakoch, D. A. (1996). Transfer and retention of implicit and explicit learning. *British Journal of Psychology*, *87*(4), 637-652.
- Lippman, L. G., & Rees, R. (1997). Consequences of error production in a perceptual-motor task. *The Journal of General Psychology*, *124*(2), 133-143.
- Lustig, C., & Hasher, L. (2001). Implicit memory is not immune to interference. *Psychological Bulletin* *2001*, *127*(5), 618-628.
- Magill, R. A. (1998). Knowledge is more than we can talk about: Implicit learning in motor skill acquisition. *Research Quarterly for Exercise and Sport*, *69*(2), 104-111.
- Mettler R. (1995). *An application of cognitive learning theory to cane travel instruction*. Lincoln, NE: Nebraska Department of Public Institutions, Division of Rehabilitation Services for the Visually Impaired.
- Mettler, R. (1995). *Cognitive learning theory and cane travel instruction: A new paradigm*. Lincoln, NE: Nebraska Department of Public Institutions, Division of Rehabilitation Services for the Visually Impaired.

- Mettler R. (1997). The cognitive paradigm for teaching cane travel. *American Rehabilitation*, 23(3), 18-23.
- Miller, G. A. (1956). The magical number, seven, plus or minus two: Some limits on our capacity for processing information. *Psychological Review*, 63, 81-97.
- Morais, M. E., Lorensen, P., Allen, R., Bell, E. C., Hill, A., & Woods, E. (1997). *Techniques used by blind cane travel instructors, a practical approach, learning, teaching, believing*. Baltimore: The National Federation of the Blind.
- Olson, C. (1982). *On the use of the blindfold*. Lincoln, NE: Nebraska Department of Public Institutions, Division of Rehabilitation Services for the Visually Impaired.
- Plaks, J. E., Stroessner, S. J., Dweck, C. S., & Sherman, J. W. (2001). Person theories and attention allocation: Preferences for stereotypic versus counter-stereotypic information. *Journal of Personality and Social Psychology*, 80(6), 876-893.
- Schroeder, F. K. (1994). Point/counterpoint: Can research and direct action complement each other? The key word is advocacy. *Journal of Visual Impairment and Blindness*, 88(1), 7-9.
- Schroeder, F. K. (1995, November). *Philosophical underpinnings of effective rehabilitation: Sixteenth Mary E. Switzer lecture*. Washington, DC: Rehabilitation Services Administration, U.S. Department of Education.
- Schroth M. L. (1997). The effects of different training conditions on transfer in concept formation. *The Journal of General Psychology*, 124(2), 157-168.
- Wall, R. S., & Ashmead, D. H. (2002). Biomechanical movements in experienced cane users with and without visual impairments. *Journal of Visual Impairment and Blindness*, 96(7), 501-516.

Study Questions

1. The Structured Discovery model, providing Orientation and Mobility (O&M) instruction, emerges out of a consumer-driven approach to rehabilitation services and heavily draws upon Mettler's Cognitive Learning Theory, therefore viewing blindness:

- a. as a significant disability, requiring medical-like interventions by highly trained professionals and the provision of thoroughly researched and clinically refined techniques specified to meet individual needs.
- b. not as a disability but merely as an inconvenience, requiring only a minimum of instruction and extensive independent experience.
- c. as only one of the many physical characteristics that are a part of the overall make-up of an individual. Similar to other characteristics, blindness presents certain limitations that shape the nature of the techniques that will ideally lead to success in accomplishing a given task and places its emphases not on how O&M instructors teach travel skills, but rather, on how human beings learn independent non-visual travel.
- d. as both b. and c.

2. Within the Structured Discovery model, human guide is:

- a. normally only introduced toward the end of independent travel training, except in some cases involving home-based instruction, especially with older learners, to provide for safe travel between lessons.
- b. not emphasized as a form of independent travel, but is presented as one of several methods of walking with another person in order to follow that person, to remain with that person in a congested situation, or to maintain an effective distance for having a conversation.
- c. strictly discouraged during travel training, since it could tend to create a circumstance in which the learner is not truly relying upon personal non-visual travel skills or refining problem-solving techniques.
- d. all of the above.

3. In the Structured Discovery model, individual beliefs and attitudes regarding blindness are viewed as:

- a. secondary issues, since they are a part of explicit knowledge, and are easily improved once the individual has developed good skills. Therefore, the focus of effective O&M training should be on the development and refinement of human guide, good cane techniques, effective techniques for soliciting assistance, and orientation to the areas in which the person will be traveling in on a regular basis.
- b. critical factors in an individual's overall rehabilitation, which must be carefully considered both in regard to the negative impact that commonly held myths and misconceptions can have on the person's sense of self-efficacy and because these beliefs and attitudes are stored in procedural memory as implicit knowledge, which is learned through environmental experiences and is not as easily extinguished as an element of explicit knowledge.

- c. the only factors of critical value in the rehabilitation process; since with a proper attitude and philosophy of blindness, blind persons can independently discover the appropriate techniques for safe and effective non-visual travel.
- d. both b. and c.

4. Low vision techniques are not emphasized during training under the Structured Discovery model because:

- a. these methods are not considered essential to effective independent travel.
- b. the development and utilization of these techniques is not discouraged once effective non-visual techniques are fully developed.
- c. once effective information gathering and problem solving skills, along with other skills necessary for safe, independent, non-visual travel, are fully developed, the learner can freely explore the environment while independently incorporating visual and non-visual information.
- d. all of the above.

5. In the Structured Discovery model, the majority of the verbal information provided by the instructor is limited to brief questions or prompts because:

- a. the primary focus of this model is on the learner developing self monitoring, information, and problem solving skills. Any information provided to the learner by the instructor is obtained without the opportunity for deliberate practice of these skills.
- b. both through the experience of Structured Discovery practitioners and current research in Mettler's Cognitive Learning Theory, it is indicated that a Socratic and experiential approach to learning is the most effective in assuring that both explicit and implicit knowledge are well developed during the instructional process.
- c. all of the above.
- d. none of the above.

Chapter 5

Blind Orientation and Mobility Instructors

By Edward C. Bell

Introduction

There is, perhaps, no more contentious or emotionally laden issue in the orientation and mobility (O&M) field than the idea of blind people providing cane travel instruction to other blind people. Today, while not yet common, blind people are entering the O&M profession in growing numbers. While the Structured Discovery method of O&M instruction is described in detail in chapter 4, in many respects it is inseparable from a discussion of blind O&M instructors. Indeed, the Structured Discovery method defines a way of teaching cane travel independent of vision. It is not a method used only by blind O&M teachers; nevertheless, it lends itself to blind instructors, because it is not rooted in visual monitoring of the blind consumer. Instead, Structured Discovery presumes that the consumer can be, and in fact should be, responsible for his or her own safety. This chapter helps address many of the doubts and fears associated with the practice of using blind O&M instructors by describing a number of the techniques common among blind O&M specialists and discusses some of the inherent advantages of blind people teaching O&M.

Methodology

In order to understand how blind people teach O&M, it is necessary to gain an appreciation of the Structured Discovery model of teaching. While Structured Discovery is not a new concept in education, it was not used to describe O&M until the mid 1980s when a sighted mobility instructor from England visited a training center in Nebraska and learned mobility instruction from a blind person. Dodds (1984) coined the term *Structured Discovery* to describe the differences he saw between the types of lessons being taught by the blind mobility instructor as compared with those taught in the conventional approach to mobility. He observed that:

The whole mobility experience was much more in the vein of structured discovery learning, rather than the receiving of sighted wisdom at secondhand. Students were actively encouraged to explore their environment on their own, even at an early stage of training, and by making mistakes in orientation to learn that those mistakes can be overcome without external assistance. (Dodds, 1984, p. 6)

Structured Discovery cane travel works by placing the student in a position of authority during the travel instruction. The individual being taught is expected to play an integral role in the learning process. Rather than being given detailed information from the instructor about the environment, the job of the teacher is to ask questions and provide cues that will enable the student to independently gather the information. As travel performance increases, the instructor's role gradually diminishes, as the students are able to assume responsibility for their travel. While

this seems logical, the difference is that under the Structured Discovery model, this shift of responsibility begins at the first lesson. As soon as the student begins to demonstrate competence in a given area, such as cane technique, the instructor shifts responsibility to the student for the monitoring and correction of that skill. Of course, the instructor continues to provide feedback and correction; however, the responsibility for proper technique is quickly placed in the hands of the student. It is important to note that this method in no way minimizes the instructor's ultimate legal responsibility for his or her client, but rather, it recognizes that the client has the ultimate responsibility for his or her own safety outside of training sessions. Therefore, any instruction must prepare the client to meet that responsibility accordingly.

This type of instruction is not done to minimize instructor liability, but rather, in recognition of the individual's ability to gather and synthesize information and make sound decisions about his or her safety. Mettler (1995) described Structured Discovery in terms of his Cognitive Learning Theory. Under this model, the individual is given more responsibility for travel performance as a function of his or her capacity to identify elements of the environment and make decisions based on logic and common sense. In other words, the average person who is blind or severely visually impaired possesses both the innate capacity and the desire to travel independently and maintain control over the affairs in his or her life. For individuals with secondary disabilities, i.e., who lack the cognitive and/or motor function to engage in active problem solving, the Structured Discovery model expands to accommodate their needs. In other words, while this model operates by increasing client control, focusing on cognitive problem solving and reasoning and maximizing client potential, it can easily accommodate greater levels of guidance and supervision as necessary. The opposite, however, cannot be said for a model whose focus is on guided instruction, incremental task lessons, and instructor control over successful experiences (Mettler, 1995).

Mettler (1995) described conventional O&M instruction in terms of behavioral modification, where the sighted instructor provides virtually all feedback, correction, and monitoring. With a behavioral approach, the instructor is the authority figure; and, consequently, the locus of control for travel performance remains with the instructor. By continually visually monitoring the student, the instructor is satisfied that the student will remain safe; however, the unfortunate result is that the instructor demonstrates a subtle but powerful expectation that vision is necessary for safe travel. With the cognitive approach described by Mettler, the individual uses intrinsic feedback gained from the environment to initiate movement and monitor his or her own safety. Structured Discovery focuses on self-initiated movement while minimizing the use of sighted guides, upper and lower protective techniques, and other guidance procedures. As a result, the individual becomes the agent for independent travel, which results in internalized locus of control for travel success and has the added benefit of increasing travel skills and boosting confidence (Mettler, 1995).

It is important to remember that Structured Discovery cane travel focuses on the individual; thus, successful travel begins with, ends with, and is continually under the control of the blind individual. The job of the instructor is to assist the student in maximizing his or her potential through strengthening environmental awareness, problem-solving capacity, and appropriate decision making. Through extensive travel training in diverse and challenging situations, the individual can be prepared to deal with novel and unpredictable circumstances in the future.

It is important to understand the underlying tenants of this model in order to fully appreciate the manner in which the blind mobility instructor functions. With Structured Discovery, a collegial, egalitarian relationship is formed between student and instructor; and travel expertise is gained through exploration, feedback, and skill transfer. The beauty of this model is that it can work equally well for the sighted instructor, provided that the individual invests sufficient amounts of time traveling with a sleepshade to develop a rich knowledge of the more subtle skills and expectations that are necessary to achieve independent travel.

Tools and Techniques

Before further discussion of the instructional strategies used by the blind mobility instructor, it is beneficial to examine the tools that are used as well as those that are not. The long, white, fiberglass or carbon fiber cane has become the tool of choice for the blind mobility instructor. The fiberglass cane is lighter in weight than either the graphite or aluminum cane. Typically, this cane is used in a longer style, commonly reaching as high as the student's chin or nose. The cane is outfitted with a metal tip that is secured with rubber bushing. Users of this cane report that its longer size provides sufficient reach for the individual to walk at full stride with a normal posture while providing enough warning time to stop at curbs or avoid obstacles. The metal tip on the cane has two functions. First, the rounded edge and rubber bushing allow the cane to more easily glide over small cracks in sidewalks and rough terrain. Second, the metal tip provides a crisp sound when being tapped, which enhances echo feedback from the environment that assists the blind traveler in finding doorways, hallways, and discriminating between textures, such as concrete, asphalt, wood, metal, etc. Additionally, this tip wears evenly, preventing jagged edges and allowing easy use of the cane in either hand. The long, rigid cane is preferred during virtually all instructional settings for its durability, greater sensitivity, and reliability. Folding and collapsible canes are an option for students after training but are not recommended for instructional purposes. Cane travel instruction must address the student's need for independent mobility skills as well as help the student learn to feel comfortable with his or her blindness. The white cane is both a tool for independent travel and a powerful, overt symbol of blindness. Many newly blind individuals feel self-conscious about their blindness; and, accordingly, in an attempt to appear more normal, it is not uncommon for them to look to folding or collapsible canes as a way of hiding their blindness.

Because of the longer length of the fiberglass or carbon fiber cane, the *Pencil Grip* technique is often used. The pencil grip works by holding the cane in a more vertical fashion in much the same manner as one might hold a pencil. With this grip, the cane can easily be extended or shortened, which allows for greater maneuverability. This is the technique that is employed for ascending and descending stairs and walking in crowds and around obstacles, such as those found in offices, restaurants, classrooms, and shopping centers. This modification of the traditional grip affords the traveler greater travel flexibility while minimizing the potential of tripping fellow pedestrians. For these reasons, the pencil grip is the technique that is most commonly used when walking indoors and around groups of people.

While accessible pedestrian signals, global positioning systems, electronic travel aids, and other environmental modifications are becoming increasingly common, their use is not a focal point of

Structured Discovery training. The rationale is that learning to use these systems is relatively simple; however, being trained to function with these devices does not adequately prepare the individual for travel in situations where the technology is not present. Under the Structured Discovery model, students are taught to rely on the white cane and their own skills to safely navigate the environment. In this way, students can transfer travel experience to various situations regardless of the availability of environmental modifications. Additionally, teaching individuals to utilize their talents intrinsic for achieving travel results in increased confidence and internalized locus of control (Mettler, 1995; Morais, Lorensen, Allen, Bell, Hill, & Woods, 1997).

We will now turn to more specific instructional strategies used by blind cane travel instructors. In keeping with the Structured Discovery model of teaching, “It is interesting to note that there are more significant differences between these methods of training than there are between the ways in which blind and sighted instructors function when working within the ‘discovery’ method” (Morais et al., 1997, p. 2). In other words, the non-visual techniques that comprise the Structured Discovery method can be effectively employed by blind and sighted mobility instructors alike. The blind instructor is not well equipped to manage the amount of visual monitoring formerly required by the conventional O&M programs.

Many of the basic cane skills are taught by the blind cane travel instructor in much the same manner as by the conventional O&M instructor. Two-touch technique is taught where the cane is arced just beyond the width of one’s shoulders, with the tip approximately one inch off the ground and alternating such that the cane is tapped on the right side of the body as the left foot steps forward. The blind instructor monitors students by using hand-over-hand evaluation of grip, gentle touching of students’ arm position and the sound of the cane tip as the student walks. Of course, basic cane skills are taught indoors in a quiet hallway to allow students to concentrate on their technique. This is also an excellent opportunity for the instructor to provide feedback and correction. The blind instructor not only provides correction to students’ cane technique but helps students identify when they are using proper technique so students can begin to assume responsibility for proper cane use. In this manner, the locus of control begins to shift from instructor control to students acting as agents in monitoring their own travel performance very early in training.

As students masters basic cane technique, lessons often move to specific skills for indoor travel. Students are taught to utilize echo feedback from the environment to locate hallways and doorways and to use the cane to navigate these surroundings. The blind mobility instructor walks closely behind or beside students, experiencing the same sound cues and spatial negotiations. The instructor allows students to work out problems, such as, “Is this the end of the hall?” or “Did we turn yet?” The instructor may offer feedback but will usually ask questions that prompt students to utilize aspects of the environment that will provide the answer to the question. The value of blind instructors is realized in these situations, because they are simultaneously experiencing the environment non-visually consequently, aware of the subtle cues that facilitate problem solving.

Once students begin to travel indoors with a reasonable amount of comfort, travel lessons move outdoors. Typically, instructors will choose an area with a long sidewalk parallel to a street with

light to moderate traffic. The focus of these lessons is for students to practice cane technique with an emphasis on detecting drop-offs. In addition, walking along the parallel street allow students to become comfortable with the sounds of traffic and to begin learning to use this technique as a source of information for orientation. The blind mobility instructor often walks immediately behind and on the traffic side of students. This allows instructors to monitor students' progress and provide feedback in regard to students' cane technique, posture, and gait. The blind instructor can evaluate these behaviors through auditory cues from students' cane, body movement, and footsteps. A shuffling or narrow gait as well as improper arc and grip are easily detected by the deviation from that expected when students are walking normally. While the goal of this lesson is for students to gain competence in avoiding obstacles and detecting drop-offs, instructors' relative position enables them to minimize the danger of students walking out into the street. Although instructors, at this point, are protective of their students, it is necessary to begin transferring the monitoring of safety to students as soon as possible. Transference of not only skill but responsibility as well prepares students for the reality of travel experience in the post-training world.

It is important to note that the use of human guide and other alternative mobility devices has not been addressed. This is not in error, but rather, in recognition of the fundamental elements of Structured Discovery cane travel. From the very first travel lesson, the focus is on self-initiated movement with the locus of control for performance residing within the individual student. This serves two purposes. First, early and consistent reinforcement of independent travel enhances skill transfer and learning (Mettler, 1995). Second, making self-initiated travel the primary source of movement strengthens the student's trust in the cane and alternative techniques, as well as enhances students' belief that they are responsible for the success rather than their instructor (Morais et al., 1997). It is a fundamental tenant of Structured Discovery cane travel that responsibility for travel begins with, ends with, and is constantly under the control of the individual.

Once a basic proficiency in cane technique and obstacle detection is reached, travel training progresses to crossing streets and using the environment for navigation. Although *discovery* is the foundation of this instructional strategy, it would be an unnecessary waste of instructional time to expect students to discover those aspects of travel that are fixed (Mettler, 1995). As a result, instructors focuses on teaching students the use of cardinal directions (north, east, south, and west) and the use of parallel and perpendicular traffic for orientation. Here, instructors may drill on these techniques throughout the early stages of training until they are mastered.

Learning the strategies to cross simple, intermediate, and larger streets that are both controlled and uncontrolled is fundamental to independent travel. A considerable number of O&M instructors have often been criticized for teaching students to cross intersections specific to each locality, in addition to other nontransferable skills (Mettler, 1995; Morais et al., 1997; Omvig, 2002). Under the Structured Discovery model, it is assumed that the strategies employed for safely crossing one street are transferable to street crossings in most any location. Although the basic skills involved in crossing streets safely are not complex, it is critical to acquaint the student with many and varied types of intersections. This affords students rich experiences that should adequately prepare them for almost every travel experience. The job of mobility instructors is to monitor students' safety and to provide feedback and correction. Again, it is

fundamental to Structured Discovery cane travel that instructors not protect students from each and every minor mistake but only those that place them in imminent danger (Morais et al., 1997). Rather, it is advisable to allow students to make mistakes, to engage in problem solving to identify the cause of the error, and to employ reasoning skills in order to reorient themselves (Mettler, 1995). The job of the instructors is to hold back and allow students an opportunity to evaluate situations and generate solutions. Early in training, instructors may offer more assistance by drawing students' attention to environmental cues that will facilitate reorientation. As student begins to problem solve effectively, it is important for instructors to hold back more, allow larger intervals of time before offering assistance, and ask more pointed questions that place the responsibility for problem solution in the hands of students.

Perhaps the most often asked question and area of concern lodged against blind mobility instructors regards the monitoring of students. The following discussion will illustrate some common techniques used to monitor students. These examples are meant to be illustrative but not exhaustive (Mettler, 1995; Morais et al., 1997). When traveling with novice students, blind mobility instructors will remain within close proximity to students. Therefore, instructors can verbally warn students of potential dangers or reach out and physically stop students when necessary. As would be expected, the early stages of travel training often occur in familiar places where instructors are aware of potential hazards. When this is not the case, instructors will remain on the traffic side or otherwise between students and potential hazards. This does not require extraordinary or superior travel skills on the part of the instructors, but it does presume that they possess sufficient ability to perform these duties without causing injury to themselves. Monitoring of students can be accomplished simply by carrying on a conversation while walking. This does not usually present a challenge for either the student or instructor, and it has the added benefit of calming the nerves of anxious students. Additionally, the blind instructors monitor by listening to the sound of the students' bodies and cane tips as they travel. It is the view of proponents of the Structured Discovery approach that the long, white cane with the metal tip is used because it is a superior instructional device, and the metal tip has the added benefit of facilitating the auditory monitoring of students. When in heavy crowds, excessive amounts of traffic, or near lawn-maintenance equipment or construction, blind instructors have several options. They may maintain physical contact with the student with their free hand. The instructors may also use their cane to gently touch the leg of the student during street crossings, or remain within close proximity such that the student will bump into the instructor's cane if they veer toward the street. These techniques are not complex, yet they have proven to be effective for dozens of blind mobility instructors over many years.

Blind mobility instructors serve as invaluable role models for their students. However, sighted mobility instructors can also serve as effective role models provided that they possess sufficient skill and confidence to travel using sleepshades (Morais et al., 1997). Although both conventional O&M programs and the Structured Discovery method value sleepshade training, there is a striking difference in the amount and type of sleepshade experience for sighted O&M instructors under the two models. In the Structured Discovery method, sleepshade training consists of an immersion experience in which the sighted instructor trains under the sleepshade for concentrated periods of time, typically eight hours a day, five days a week, for a minimum of two months, followed by continuing sleepshade use throughout the professional preparation experience. Under the Structured Discovery method, it is not unusual for the sighted O&M

student to receive as much as 500 to 750 hours of sleepshade training during the course of his or her professional preparation.

The amount of time wearing the sleepshade is not the only distinguishing characteristic between the conventional and Structured Discovery models. Under Structured Discovery, the instructor trainee is not taught to walk without a cane, use sighted guide, or protective techniques. It is felt that these types of experiences reinforce passivity and intensify a sense of vulnerability—inhibiting the development of high expectations rather than being empowering and leading to increased confidence. It is believed that the fundamental and lasting benefits of immersion training are realized when the instructor trainee is engaged in self-initiated movement, learning from role models, and maintaining the locus of control for safe and effective travel.

In addition, the immersion experience includes many activities not directly associated with O&M. The sighted instructor learns to function fully as a blind person—learning to cook, read, and write Braille by touch, and participating in a wide range of social experiences, such as going to restaurants, movies, and other social events in the community—all the while wearing sleepshades. In this way, the sighted instructor gains a broad appreciation for the skills used by confident blind people and gains a personal understanding of the impact of social attitudes about blindness on the lives of blind people.

An important distinction between the conventional and the Structured Discovery models is that under the Structured Discovery method, sighted instructors often teach while wearing sleepshades. This enables sighted instructors to demonstrate their confidence in the techniques they are teaching and belief in the fundamental ability of blind people to travel safely and efficiently. It also has the added advantage of giving the instructor a direct knowledge of how the blind student perceives the environment. Accordingly, it is only when the sighted instructor trainees have mastered the skills needed to travel efficiently and confidently in new and challenging environments, such as using unfamiliar mass transit and traveling in new places with complex intersections, that they are adequately prepared to serve as role models for their blind consumers.

This chapter has illustrated some of the basic instructional techniques employed by the blind cane travel instructor; however, it is the travel instruction beyond this basic level where the blind instructor has natural advantages. Expertise in travel occurs as the blind person builds up an assumptive world gained through extensive experience traveling and problem solving in various environments (Mettler, 1995). It is through this rich body of knowledge that the blind person is aware of both the subtleties and commonalities in the environment that facilitate independent travel. Take the example of a blind instructor teaching his or her student to locate stores and escalators in a shopping mall. The instructors may point out obvious cues, such as carpets and sounds, but they also have the depth of experience to point out more subtle cues to the student, such as changes in air pressure, spatial changes from large open areas to enclosed hallways, echo feedback from various points, and the textual changes that might occur from tile to concrete floors. This is not to say that the sighted instructor is never aware of these phenomena but that the blind instructor is simultaneously experiencing the environment with the student in real time and can, therefore, make better-informed decisions as to the relative merits of various cues. During these lessons, the instructor is problem solving and maintaining orientation along with

the student and can, therefore, point out types of environmental cues that are transferable to novel situations and those that are irregular.

Another example of the inherent advantage that the blind mobility instructor has is realized in outdoor travel in confusing and large open spaces. When the assignment requires the student to travel across a large parking lot to locate a business, there is often not much environmental feedback except asphalt and parked cars. It is here where the travel experiences of the blind instructor come into play. For example, if a flagpole is present and there is a moderate breeze, the instructor and student can use the sound of the flapping flag as a beacon. Without experience in these unconventional techniques, the student could walk in circles around the flag pole. However, the blind teacher can instruct the student in the expected changes that the sound beacon will make as the pair approaches, walks past, and travels away from the flagpole. In order for the sighted instructor to become well versed in the subtleties of non-travel instruction, it is important to invest the time in practicing the use of changing cues. This assertion is not to challenge the ability of the sighted instructor; rather, it is in recognition that the blind instructor is employing the skills and techniques on a daily basis and, therefore, is naturally well versed in their use. This is not merely a difference of opinion but a matter of fact. This is an exceedingly important point, because the vast majority of travel in the real world occurs in an environment that is constantly changing and where typical cues are not always present. The student whose training does not extend much beyond the obvious cues, such as traffic and the sun, will be ill equipped to meet the challenges of independent travel after training is complete.

Summary

This chapter examined the impact of public attitudes about blindness on the acceptance of blind people into the O&M profession. Far from being well equipped to teach O&M to blind consumers, blind people bring a number of advantages to the teaching experience. As blind people, they automatically experience the world in the same way as their students. They do not have to try to anticipate how their students will perceive various auditory and tactile clues in the environment. Of course, blind people are not the only ones who can teach O&M to blind consumers. Nevertheless, blind people bring the added advantage to the instructional experience of being powerful role models.

In addition, this chapter described many of the techniques used by blind O&M instructors to help the reader better understand the methods and strategies blind people employ in the teaching experience. While not intended to be an exhaustive discussion of the Structured Discovery method of O&M instruction, the author believes that Structured Discovery is fundamentally linked to blind people teaching O&M. The Structured Discovery method does not employ visual observation and, in fact, views it as a dysfunction, believing that it sends a subtle message to the student that his or her safety is dependent on sight. While there are a small number of blind people who have been trained to teach O&M in conventional programs, the emphasis on visual monitoring has meant that these individuals have needed to make modifications in their teaching stratagems. To one extent or another, they use techniques similar to those used in the Structured Discovery method.

Recommendations

- **Blindness Immersion.** The O&M instructor needs to have a personal belief in the ability of blind people to live full, productive lives. This is not simply an intellectual understanding or belief but a deeply personal belief. A blindness immersion experience gives the sighted instructor the opportunity to gain an understanding of the impact of social attitudes about blindness and how those attitudes serve to limit the expectations of blind people and sighted professionals in the O&M field. The blindness immersion experience must be of sufficient duration (no less than two months of full-time training) to allow the sighted instructor to acquire skill and confidence in cane travel and in his or her ability to function competently as a blind person.
- **Role Modeling.** Role models are important in the teaching of O&M. Having a blind instructor dramatically demonstrates to the student the instructor's belief in the efficacy of the skills used by blind people to travel independently. This helps inspire and build confidence in the consumer. In addition, the blind instructor does not have to interpret visual information to assess how the blind consumer will perceive the environment. This does not mean that sighted people cannot teach O&M; rather, it is recognition of the value and importance of role modeling. Accordingly, sighted instructors should possess sufficient competence in cane travel that they can travel and teach while wearing a sleepshade.

Acknowledgements

I would like to thank Dr. Fredric K. Schroeder for his assistance with the writing, reviewing and revisions of this chapter. Dr. Schroeder is the foremost blind pioneer in the field of Orientation and Mobility. His courage in challenging the system--a system vehemently opposed to accepting the contributions of blind instructors—has not only been instrumental in the development of the Structured Discovery approach but has also helped to change the hearts and minds of many who once opposed him. His knowledge, experience, and leadership is evident in every chapter of this document; and I would especially like to thank him for his time, wisdom, and talented hand in creating this chapter. The future is indeed bright for many blind and visually impaired individuals who seek a profession in the field of orientation and mobility, and their opportunity is due, in large part, to the leadership of Dr. Schroeder.

References

- Dodds, A. G. (1984). *A report to N.R.I.B. on a visit to Nebraska services for the visually impaired: Blind mobility research unit* (Report No. 138 to the Royal National Institute for the Blind). Nottingham, England: University of Nottingham.
- Mettler, R. (1995). *Cognitive learning theory and cane travel instruction: A new paradigm*. Lincoln, NE: State of Nebraska Department of Public Institutions, Division of Rehabilitation Services for the Visually Impaired, 1-178.
- Morais, M., Lorensen, P., Allen, R., Bell, E., Hill, A., & Woods, E. (1997). *Techniques used by blind cane travel instructors: A practical approach: Learning, teaching, believing*. Baltimore: National Federation of the Blind.
- Omvig, J. H. (2002). *Freedom for the blind*. Region VI Rehabilitation Continuing Education Program, 56-58. Fayetteville: University of Arkansas. Retrieved September 9, 2003, from http://www.rcep6.org/Announcements_Publications.html#P.

Study Questions

1. Structured Discovery cane travel can be defined as:
 - a. setting curricula such that the student is responsible for discovering virtually all aspects of travel.
 - b. setting curricula such that the student is guided through basic skills, but then must develop problem-solving strategies for traveling through the environment.
 - c. allowing the student to decide the areas of learning that are going to be explored to meet his or her individual preferences.
 - d. extensive instruction given to the student by the instructor in most situations.

 2. All of the following are acceptable non-visual methods for monitoring a student's safety except:
 - a. walking immediately behind and on the traffic side of the student.
 - b. holding onto the arm of the student while walking.
 - c. verbally communicating with the student while on the route.
 - d. listening to the sound of the student's footsteps and cane tap while walking.

 3. Is it ever appropriate to send a student on a solo route and not follow the student?
 - a. No, because the safety of the student ultimately lies with the instructor.
 - b. No, because it is unsafe for the student to travel without being monitored by the instructor.
 - c. Yes, but it is ultimately up to the student to make this choice under the law.
 - d. Yes, because the instructor's job is to prepare the student for independent travel and, ultimately, must come to demonstrate this to the student.

 4. The primary reason for requiring students to wear sleepshades during training is:
 - a. to prepare the student for the eventuality of total blindness.
 - b. to bring the student down to the same level as the blind mobility instructor.
 - c. to ensure that the alternative skills of non-visual travel are learned thoroughly, irrespective of vision.
 - d. to help the student protect his or her eyes from injury during training.

 5. When considering the selection of a cane for teaching orientation and mobility, the new students should:
 - a. be able to choose whatever type of cane they want, based on choice.
 - b. use the cane that the instructor judges to be most beneficial for the students' needs during training.
 - c. be able to choose whether and to what extent they want to use a cane.
 - d. be given folding canes so they can more easily stow them away.
-

Chapter 6

Qualifications of Orientation and Mobility Instructors

By Christine Brown and Susan Benbow

Introduction

This chapter will carefully examine the characteristics of a qualified orientation and mobility (O&M) instructor from the alternative approach, including critical aspects of quality instruction. A sample of these critical aspects of instruction include: necessary skills and attitudes to be taught, effective measures of skill mastery, expected outcomes for the student, ethical responsibilities of instructors, a best practices model for instruction, the issue of certification, including the role of the Comprehensive System of Personnel Development (CSPD) requirements: establishing a personnel standard, how CSPD affects the blind O&M instructor, and the role-model component of instruction.

In addition, this chapter will highlight socially constructed views about blindness and how those views may impact expected outcomes and competency expectations. It is important that instructors examine personally held beliefs about blindness; and, if negative or limiting attitudes exist, attitudinal transformation is critical to lead to quality instruction. Quality instructors will have a positive and progressive view about blindness.

Jacobus tenBroek (1957), the first president of the National Federation of the Blind (NFB), put forth a core belief about blindness on which all other assumptions hinge. He asserted that the blind are normal human beings with “all the typical and ordinary range of talents and techniques, attitudes, and aspirations of sighted people.” Kenneth Jernigan (1990), long time president of the NFB, developed this idea further in “Blindness—Handicap or Characteristic” a speech delivered in 1963. He asserted that blindness fell on the side of a “characteristic” or “limitation.” He insisted, “It is nothing more or less than that. It is nothing more special, or more peculiar, or more terrible than that suggests.” All persons have certain characteristics—hair color, height, weight, social economic status, physical agility, mental ability, etc.—these characteristics freeze “us to some extent into a mold; each restricts to some degree the range of possibility of flexibility, and very often opportunity.” He went on to claim that blindness has no more importance than any of a hundred other characteristics with which people must live. The statements of tenBroek and Jernigan were intentional. They were designed to project a different, more accurate image of blind people as well as confronting the prevailing view of blindness. tenBroek noted that his assumption was in sharp contrast to the popular notion of “intrinsic helplessness and everlasting dependency of those who happen to lack sight.” (Ferguson, 2003, p. 1)

A key component of a qualified O&M instructor is attitudinal transformation. There are many ways that this attitudinal transformation can occur, including immersion experience, personal travel experience under sleepshades for sighted instructors, and time spent with positive blind role models. Attitudinal transformation can also occur when there is greater understanding of medical issues that may impact the student and an understanding of cultural or ethnic criteria that may apply to the student.

The end result of quality instruction will be to further develop the ability of persons who are blind or partially blind to function competently, independently and successfully, not only in their own environments, but also as fully integrated and participating citizens in the broader society. To this end, all Certified Blindness Professionals (CBPs), working at all professional levels, shall treat persons who are blind or partially blind with dignity and respect and will provide the best possible training and related vocational rehabilitation services which can be offered, based upon the most current techniques and training principles available at the time (NOMC code of ethics). Orientation and mobility (O&M) specialists recognize the significant role that independent movement plays in the overall growth and functioning of the individual and are dedicated to helping each individual attain the level of independence necessary to reach his or her full potential. (ACVREP Code of Ethics)

Certification, CSPD, and the Qualified O&M Instructor

In this section, the Comprehensive System of Personnel Development (CSPD) and its application to the O&M instructor will be discussed. First, requirements of the Rehabilitation Act of 1973, as amended, and its implementing regulations will be described. This description will be followed with implications of the requirements for O&M instructors generally. And, finally, federal policy regarding blind O&M instructors will be cited.

CSPD Purpose and Key Requirements

The 1992 Amendments to the Rehabilitation Act of 1973, as amended, was the first piece of federal legislation in the history of the public vocational rehabilitation program to require that qualified personnel serve the employment needs of persons with disabilities. The CSPD provisions for state agency personnel were carried forward in the 1998 Amendments to the Rehabilitation Act. The purpose of the CSPD provisions is to ensure the quality of personnel who provide vocational rehabilitation (VR) services to assist individuals with disabilities to achieve high quality employment through the VR program.

Section 101(a)(7) of the Rehabilitation Act Amendments of 1998 (P.L. 105-220), commonly referred to as the CSPD, requires state VR agencies to establish personnel standards that are consistent with any national or state-approved or -recognized certification, licensing, or registration that apply to a particular profession for rehabilitation professionals and paraprofessionals. To the extent that a state's existing personnel standards are not based on the highest requirements of the state, the state agency is also required to develop a plan to retrain or

hire personnel to meet standards that are based on the highest requirements in the state. “Highest requirements in the state” is defined in the regulations as the highest entry-level academic degree needed for any national or state-approved or recognized certification, licensing, or registration. When such national or state requirements do not exist, personnel standards must be based upon comparable requirements that apply to that profession. Specifically, Federal Regulations 34 CFR Section 361.18(c) state

(1) The State plan must include the State agency’s policies and describe the procedures the State agency will undertake to establish and maintain standards to ensure that all professional and paraprofessional personnel needed within the designated State unit to carry out this part are appropriately and adequately prepared and trained, including—

(i) Standards that are consistent with any national or State-approved or -recognized certification, licensing, or registration requirements, or, in the absence of these requirements, other comparable requirements (including State personnel requirements) that apply to the profession or discipline in which that category of personnel is providing vocational rehabilitation services; and
(ii) To the extent that existing standards are not based on the highest requirements in the State, the steps the State is currently taking and the steps the State plans to take to retrain or hire personnel to meet standards that are based on the highest requirements in the State, including measures to notify State unit personnel, the institutions of higher education identified under paragraph (a)(2)(i) of this section, and other public agencies of these steps and the timelines for taking each step. The steps taken by the State unit under this paragraph must be described in a written plan that includes—

(A) Specific strategies for retraining, recruiting, and hiring personnel;
(B) The specific time period by which all State unit personnel will meet the standards described in paragraph (c)(1)(i) of this section;
(C) Procedures for evaluating the State unit’s progress in hiring or retraining personnel to meet applicable personnel standards within the time period established under paragraph (c)(1)(ii)(B) of this section; and
(D) In instances in which the State unit is unable to immediately hire new personnel who meet the requirements in paragraph (c)(1)(i) of this section, the initial minimum qualifications that the designated State unit will require of newly hired personnel and a plan for training those individuals to meet applicable requirements within the time period established under paragraph (c)(1)(ii)(B) of this section.

(2) As used in this section—

(i) Highest requirements in the State applicable to that profession or discipline means the highest entry-level academic degree needed for any national or State-approved or -recognized certification, licensing, registration, or, in the absence of these requirements, other comparable requirements that apply to that profession or discipline. The current requirements of all State statutes and regulations of other agencies in the State applicable to that profession or discipline must be considered and must be kept on file by the designated State unit and available to the public.

- (ii) Profession or discipline means a specific occupational category, including any paraprofessional occupational category, that—
- (A) Provides rehabilitation services to individuals with disabilities;
 - (B) Has been established or designated by the State unit; and
 - (C) Has a specified scope of responsibility.

The State VR agency must describe the procedures and activities it will undertake to establish and maintain a comprehensive system of personnel development designed to ensure an adequate supply of qualified rehabilitation personnel. Additionally, federal regulations require that if the State agency has a State Rehabilitation Council (SRC), the Council must have an opportunity to review and comment on the development of plans, policies, and procedures necessary to meet the above requirements.

As stated above, to the extent that a state's existing personnel standards are not based on the highest requirements in the state, the state agency is required to develop a plan to retrain or hire personnel to meet the requirements. Current staff members who do not meet the highest requirements in the state must be retrained consistent with the state agency's plan for ensuring that its personnel meet the standard. New personnel hired by the state agency are expected to meet the state agency standard. However, some state agencies may face particular barriers to hiring personnel who meet that standard (e.g., some states may have a limited pool of qualified candidates; others may need time to revise pay scales in order to attract qualified candidates to the VR program). The state's plan for hiring must be reasonable in light of the particular circumstances of the state (Schroeder, 1998).

Finally, the professions or disciplines for which standards are to be maintained are established or designated by the State VR agency (34 CFR Section 361.18(c)(2)(ii)). The appendix to the Regulations states

We decline to define the professional and paraprofessional disciplines for which a State unit must establish personnel standards, as some commenters requested. While a State unit must apply to its staff the highest personnel requirements that exist in the State and that apply to each profession, determining the types of professionals and paraprofessionals needed to effectively administer its VR program and establishing the scope of functions for each job are the responsibility of the State unit. (*Federal Register*, 2001, p. 4424)

Thus, as a first step in establishing a comprehensive system of personnel development, the agency must determine the professional and paraprofessional disciplines for which it will establish personnel standards. The Rehabilitation Services Administration (RSA) has provided guidance on the categories of professional and paraprofessional disciplines most closely associated with the VR program for which the State agency should give priority in developing both specific job criteria and appropriate qualification standards. Those professions include rehabilitation counselors, vocational evaluators, job coaches for individuals in supported employment or transitional employment, job development and job placement specialists, and personnel who provide medical or psychological services to individuals with disabilities. State agencies are to supplement this listing as appropriate to their situation.

CSPD Implications for O&M Instructors: Establishing a Personnel Standard

Based on the above requirements, the State agency, in conjunction with its State Rehabilitation Council (SRC), must establish personnel standards for professionals and paraprofessionals it determines are needed to effectively administer its VR program. It is the State agency that judges its staffing needs and establishes staffing arrangements that meet the particular needs of the agency's blind consumers. Therefore, if the state agency, in conjunction with its SRC, determines that O&M Instructors are necessary to meet the needs of its blind consumers, it must establish specific job criteria and appropriate qualification standards for this category of professional.¹

The most basic issue is what standard must a state agency maintain for O&M instructors? The state agency determines which standard it will use based on the above requirements. As previously stated, personnel standards for a particular profession must be based on the "highest requirements in the state," which is defined in the regulations as the highest entry-level academic degree needed for any national or state-approved or -recognized certification, licensing, or registration. When such national or state requirements do not exist, personnel standards must be based upon comparable requirements that apply to that profession. Thus, for O&M instructors, if state-approved or -recognized certification, licensing or registration requirements *do* exist within the state, then the state VR agency must base its personnel standards on one of the following:

- The highest entry-level degree needed under the existing state requirements;
- A degree that exceeds the degree needed under the existing state requirements; or
- The degree required for any national certification, licensing, or registration requirements, i.e., the degree required for certification from the Academy for Certification of Vision Rehabilitation and Education Professionals (ACVREP) or the degree required for certification from the National Blindness Professional Certification Board (NBPCB).

If there are no State-approved or recognized certification, licensing, or registration requirements for O&M Instructors in the state, the state VR agency must base its personnel standards on

- The degree needed to meet any national certification, licensing, or registration requirements, i.e., the degree required for certification from the ACVREP or the degree required for certification from the NBPCB; or
- New state certification, licensing, or registration requirements for O&M instructors developed by the appropriate certification, licensing, or registration body of the state.

Additionally, RSA does not require the state to choose actual *certification* from any certifying body as its standard. The standard must be *consistent with* any national, state-approved, or recognized certification or licensing and must be based on the highest requirements in the state. Thus, a state agency has several options based on its individual circumstances. The state agency may choose ACVREP certification as its standard; it may choose NBPCB certification as its standard; or it may choose certification from either the ACVREP or the NBPCB as its standard. On the other hand, its standard may require that an individual be eligible for certification from either the ACVREP or the NBPCB but not require the actual credential, i.e., meet the requirements that make an individual eligible to take the certification exam or exams. Given the

historic discrimination faced by blind people in the O&M profession discussed later, it is suggested that agencies choosing to recognize ACVREP certification also recognize NBPCB certification to insure full and equal access to employment opportunities in the O&M field for qualified blind applicants.

Finally, alternatively, the state agency may choose to base its standard on new state certification, licensing, or registration requirements developed by the appropriate state body.

Blind O&M Instructors and CSPD

After the passage of the 1992 Amendments to the Rehabilitation Act that established CSPD requirements, RSA promulgated regulations to implement the new provisions. During the regulatory comment period, several commenters recommended that the regulations specifically provide for state agency employment for individuals who, due to the existence of their disability, were unable to satisfy certification or licensure standards applicable to a particular profession. As an example, these commenters stated that, historically, blind individuals had been excluded on the basis of their disability from obtaining necessary certification to teach O&M to other blind individuals, even though they were otherwise qualified to work in that profession. As a result, in the preamble to the 1997 final regulations implementing the 1992 Amendments, the Secretary of Education recognized the concerns of those commenters who sought to safeguard state agency employment opportunities for individuals who, because of their disability, had been historically prohibited from obtaining the license or certification applicable to their particular profession. Specifically, the Secretary stated

[t]he Secretary is cognizant of the particular difficulty experienced by blind individuals who, historically, have been excluded on the basis of their disability from becoming certified as orientation and mobility instructors. The Secretary emphasizes that these regulations do not inhibit DSUs or other VR service providers from hiring blind individuals as orientation and mobility teachers even though those individuals may not meet current certification requirements. To the extent that a DSU employs blind individuals who do not meet the highest requirements in the State applicable to the orientation and mobility profession, the State agency's plan under paragraph (c)(1)(ii) of this section must identify the steps the agency plans to take to assist employees in meeting those requirements. In this regard, the Secretary is supporting a national project to develop alternative certification standards for orientation and mobility instructors in order to ensure that individuals who are blind can meet necessary certification standards within the timeframe outlined in the DSU's plan under paragraph (c)(1)(ii) of this section. (*Federal Register*, p. 6318)

Thus, state agencies are permitted to hire blind O&M instructors who do not meet the agency's current certification standards. Additionally, in an effort to support the development of alternative certification standards that would meet the unique training needs of blind O&M instructors, RSA provided a grant to Louisiana Rehabilitation Services, the VR agency in the State of Louisiana. This RSA-funded project ultimately led to the development of alternative

standards for the certification of O&M instructors. These alternative certification standards are currently administered by the National Blindness Professional Certification Board.

As previously stated, the 1998 Amendments to the Rehabilitation Act retained the CSPD provisions established in the 1992 Amendments. RSA published a Notice of Proposed Rule Making on February 28, 2000, implementing the 1998 Amendments. In the preamble discussion to the proposed rule, the Secretary of Education, once again recognized the historical discrimination faced by blind individuals wishing to enter the O&M field. The preamble states

We continue to recognize the need to safeguard DSU employment opportunities for individuals who, because of their disability, are prohibited from obtaining the license or certification applicable to their particular profession. As RSA has previously stated, to the extent that certification and licensing requirements are discriminatory on the basis of disability, these issues should be addressed as compliance issues under section 504 of the Act and the Americans with Disabilities Act (ADA). Nevertheless, we remain aware of the particular difficulty experienced by blind individuals who, historically, have been excluded on the basis of their disability from becoming certified orientation and mobility instructors. The proposed regulations, like the current regulations, would not inhibit DSUs or other VR service providers from hiring blind individuals as orientation and mobility instructors, even though those individuals may not meet current certification requirements. To the extent that a DSU employs blind individuals who do not meet the “highest requirements in the State” applicable to the orientation and mobility profession, the State agency's detailed plan under paragraph (c)(1)(ii) of this proposed section would identify the State's strategies, timeframe, and evaluation procedures related to the retraining of these employees to meet the highest requirements. In addition, the Secretary will continue to support the development of alternative certification standards for orientation and mobility instructors in order to ensure that individuals who are blind can meet necessary certification standards within the timeframe outlined in the DSU's plan under paragraph (c)(1)(ii) of this proposed section. (*Federal Register*, 2000, p. 10623)

Thus, state agencies continue to be permitted to hire blind O&M instructors who do not meet current agency personnel standards.

In summary, the state agency, in conjunction with its SRC, has considerable flexibility in establishing personnel standards for qualified O&M instructors. In fact, if a state agency is currently in the process of developing or modifying specific job criteria and appropriate qualification standards for its O&M instructors, it should use the information in this chapter as the basis for the development or modification of those criteria and standards.

Understanding Socially Constructed Views of Blindness

Socially constructed views about blindness exist, and each instructor must critically examine how his beliefs may impact instruction. If students become sheltered or dependent on the

instructional setting, a vicious circle is fostered. The circle represents the idea of a public perception that blind people are less competent than sighted people; instruction received during vocational rehabilitation training may produce students who are dependent on the instructional setting and who lack confidence to travel independently; and the result is that blind people are viewed as less competent by the public. Dr. Ronald Ferguson (2001), author of *We Know Who We Are: A History of the Blind in Challenging Educational and Socially Constructed Policies*, asserts

My assumption is that social problems are social constructions, and thus, any analysis of the “problem” of the blind must consider what happened prior to the emergence and social identification of this “problem” as a problem. For example, the blind are seen as a “problem” group in that there is a high incidence of unemployment among the blind (and many that are employed are under employed), a disproportionately high number of blind adults are on welfare, and approximately forty percent of blind persons are illiterate. These problems appear to be natural in that it is assumed that blind people are severely handicapped by their blindness and as a consequence will face these kinds of problems. Generally, it is believed that the handicap of blindness is the reason for the troubles the blind face. My analysis maintains that the majority of problems the blind face are not just because of blindness but are the result of the socially constructed misconceptions about the blind. There are numerous examples which show how the constructive grid of conditions, assumptions, and forces have contributed to the creation of an environment that has allowed the targeting and labeling of the blind as a problem, as well as directed the way the sighted see the blind and respond to their situation. Furthermore, this network of factors, along with the grid of social regularities, has a powerful influence on how the blind see themselves. Two examples that illustrate this are seen when we deconstruct the ideas and assumptions that were the underpinnings for the creation of residential schools for the blind by humanitarians in the early nineteenth century, and the establishment of the American Foundation for the Blind by professionals and "friends of the blind" near the beginning of the twentieth century. Arena I of policy archaeology recognizes that social and educational problems associated with the blind are seen and interpreted through the complex grid that I have just described.

It is through this interpretive lens that social agents, particularly socially legitimated social agents like professionals and policy analysts, determine acceptable and unacceptable behavior for the blind. When the blind fail to live up to (or down to) behaviors constructed within this framework, the fault lies with the blind because blindness, and not the structures in society, is assumed to be the problem. If the blind resist the guidelines set by the policy makers they are labeled as being uncooperative. Furthermore, this network of factors, along with the grid of social regularities, has a powerful influence on how the blind see themselves.

Part of the bigger picture here is that O&M techniques are not the only curriculum being learned and absorbed by students during instruction. There are ancillary issues, such as overcoming fear, developing positive attitudes about blindness, and building self-confidence. Schroeder (1995) summarizes the need for the O&M profession to look carefully at the level of impact this issue can have.

It will take a long time to change society's views of blindness and, for that matter, the views of the orientation and mobility profession. It is clear; however, that a change must come. Those of us who have grown up as blind children understand the negative impact which these attitudes have had on our lives. We have experienced the heartache of being left behind, and the degradation of being taken along by brothers and sisters who became unwilling caretakers. The tragedy is not that of blindness, but rather the ease with which we and society sold ourselves short. Blindness does not isolate us, but our inability to travel as freely as others did. To participate in society was to be at society's mercy—to accept gratefully the opportunity to be brought along, even if not included. No professional pride or theoretical dogma should be allowed to isolate and degrade blind people in the future. No one has the right to rob another of his or her self-respect by imposing arbitrary limitations. (pp. 63-67).

Schroeder goes on to emphasize that blind people must claim the right to live with dignity and to experience life to its fullest offerings. He encourages the teaching of independent principles, rather than fostering a life style of overprotection, underachievement, and lost potential. O&M taught using problem-solving alongside structured discovery learning, raising the bar on expectations set by instructors, and encouraging blind students to set and attain specific goals with towering expectations will contribute to the development of competent, confident, and independent blind citizens.

Skills and Attitudes

The skills and attitudes that a qualified instructor must possess and be able to teach are those that lead to a destination of independence. The road to independence involves the teaching of a skill set that focuses on a clear understanding of the rehabilitation process, problem-solving skills, effective cane technique, the ability to use environmental cues to make navigation decisions, effective use of cardinal directions, and a high level of self-efficacy to travel independently.

Skill: A Clear Understanding of the Rehabilitation Process

Rehabilitation is not something that is done *to* a blind person or *for* a blind person but *with* the blind person (Omvig, 2002, p. 11). It is important to view rehabilitation in these terms. Part of this process includes O&M training. O&M training should begin with the end in mind. The concept of proper training is an important consideration. Following is a detailed definition of this concept:

Proper training can best be described as providing blind persons with the philosophical counseling and learning experiences that will allow them to return

to an active and meaningful lifestyle. In order to do this an Orientation Center must effectively focus on five critical aspects of the blind person's life.

1. The blind person must come emotionally, as well as intellectually, to know that he or she truly can be independent and self-sufficient.
2. The blind person must really learn and become competent in those skills (alternative techniques) which will make it possible for him or her truly to be independent and self-sufficient.
3. The blind person must learn to cope on a daily basis with the public attitudes about blindness—with those things that will be said or done to him or her because of other people's misunderstandings and misconceptions.
4. The blind person must develop self-discipline, be reliable, have proper appearance and grooming, and have a healthy work ethic. This must be equal to or exceed the standards of a similar sighted person.
5. The blind person must develop the confidence and competence to willingly and meaningfully contribute to the personal growth and advancement of other blind individuals, and to his or her community in general. (Omvig, 2002)

Skill: Effective Cane Technique

The student should be taught that the cane must be viewed as a tool. When used properly, it will provide information as to what is in the traveler's path, help to locate and negotiate obstacles, and locate drop-offs. Effective cane travel skills are the foundation in teaching O&M. The cane should be used at all times by the student, not just during instruction. This will ensure that the student is comfortable using the cane in varied situations and will be comfortable overcoming possible social stigma of friends and family seeing the cane. Good skills can only be built with solid, consistent practice and application. It is also important to note that when dealing with children, early introduction of the cane is a very important component to develop a lifelong skill.

Skill: Problem-Solving Ability

Problem solving is part of a concept called Structured Discovery Learning that is based on a cognitive model. Problem solving refers to behaviors that alter the environment in such a way that they prompt a solution. It is thinking behaviors that one must teach in order to produce efficient and competent problem solvers (Paige, 1992). When problem solving is encouraged and taught, the student relies on intrinsic feedback for knowledge of results. With this concept, the instructor asks questions to get the student to find the answers, rather than the instructor providing constant information. When students utilize problem-solving techniques, they are reliant on their own thoughts and how they perceive the environment. In contrast, when protection and guided learning techniques are employed, the student relies on feedback from the instructor; the perceptions of the student become extrinsic and, thus, come from the instructor. During initial instruction, guidance from the instructor should gradually diminish until the student has a sufficient grasp of fundamental skills and knowledge, at which point the teaching strategy changes (Mettler, 1997). Mettler cautions that extrinsic feedback can become part of the task and states that the learner who does not receive guidance is forced to struggle somewhat more during initial phases of instruction and may not perform as well; however, this person will learn the capability to perform effectively without guidance and, thus, out-performs guided

learners on retention tests. Effective cane travel calls for serial, controlled information processing with fixed attention capacity (Mettler, 1997).

With structured-discovery learning and problem solving, the shift from extrinsic to intrinsic feedback begins during the first travel lesson (Mettler, 1995). Mettler cites the following positive attributes of this method:

. . . greater active involvement, which increases the meaningfulness of what is learned through greater attention that discovery demands; discovery learning teaches problem-solving skills and an appreciation of the scientific method; discovery experiences are a good means of testing whether reception has become meaningful; discovery learning encourages the reflective thinking and identification of relationship through association; discovery learning promotes self-direction and motivates further learning. (Mettler, 1995, p. 26)

During initial instruction, the instructor will teach travel techniques to the student. This necessitates that the instructor work closely with the student on skill building and identify key trouble spots (Hill, 1997). This provides a mentoring opportunity and establishes a good foundation of self-confidence on the part of the traveler. The primary goal of Structured Discovery Learning is to shift decision-making capacity solely to the student. The instructor's role fades as the student acquires the understanding and skills used in self-management (Mettler, 1995). This idea can be related to a concept used in Lev Vygotsky's cognitive theory of psychology called scaffolding. Scaffolding in learning is the temporary support that the instructor gives a student to complete a task until the student can do it alone. It is important for this support to be removed as soon as possible to allow for independent decision making by the student. When this occurs, an accurate assessment can be made by the instructor of the student's skill level and level of understanding. This will expose strengths and areas of opportunity for skills to be honed. When problem solving is taught, the students' safety becomes their responsibility after they have been provided minimal guidelines and instruction.

Skill: Ability to Travel Independently

Once a student has mastered basic skills, such as good cane technique and basic navigation skills, the student should be sent on solo routes without the instructor. It is important to consider the individual physical and developmental characteristics of each traveler, when making the decision to graduate to solo routes. There are students who may have developmental or physical disabilities other than blindness, and require some supervision. In addition, the difficulty of independent travel assignments should be based on the student's specific skill level and should consider the presence of any cognitive delays that may exist as a result of traumatic brain injury, age, or any other factor that affects the student. If a student has any cognitive delays, independent travel should still be encouraged; however, the difficulty of the assignment will reflect those factors as appropriate.

Regarding the age of the travelers, it is important to consider what is age-appropriate on an individual basis for both the young and elderly students. These routes will incrementally increase in distance and difficulty as the student's skills develop. These solo routes will instill confidence in the student to be able to travel independently and will decrease a dependence on the instructor

and instructional settings. This stair-step technique will prepare students to handle varying situations and environments when they complete training.

O&M's emphasis on the instructor's reported observations of the student's performance, an instance of extrinsic feedback, supports O&M's monitoring commitment beyond concerns for student safety. The presumption is that this extrinsic feedback is the only reliable source for the student to access knowledge of results (KR) with regard to travel performance. It is acknowledged that KR is necessary for learning. It is also acknowledged that extrinsic feedback and other forms of guidance are useful in the initial period of the acquisition phase of skill learning. But extrinsic feedback and other forms of learning quickly outlive their usefulness for student learning. When continued beyond the point where the student can learn independently, this assistance becomes part of the task of cane traveling. (Mettler, 1995)

Mettler goes on to point out that when students are asked to travel independently, retention and transfer can be accurately assessed. In a training model where the instructor's presence tapers off, substantive learning begins when the students rely on themselves for good decision making and problem solving. The result that ensues is that extrinsic feedback is withheld, and the student makes the shift to relying on intrinsic feedback for KR. In this case, he develops internal error detection mechanisms and self-correction procedures from intrinsic feedback

This skill can be fostered by a qualified instructor when he views information presented to the student as material for the student to develop independent problem-solving ability (Mettler, 1995).

When the instructor is doing the work in directing and assessing student performance, the student lacks both the attention resource and motivation to process intrinsic, response-produced feedback. But the student must be able to process this information independently in the instructor's absence. The result is that the travel the student is practicing for is a different task than the one he or she will confront after training. Schmidt (1991a) states that during practice where guidance is present, the learner relies too strongly on its powerful performance enhancing properties, which actually changes the task in several ways. Physical guidance modifies the feel of the task. When the instructor tells the learner what to do, decision making changes. (Mettler, 1995)

As mentioned earlier, O&M instruction should begin with the end in mind; the end for students should be viewed as the ability to travel independently, without assistance.

Attitude: High Level of Self-Efficacy

This high level of self-efficacy is an attitude that can be taught by placing the responsibility of decision making on the student. If the instructor makes decisions for the traveler during instruction, it creates a dependence on the instructional setting. For example, if the instructor

consistently prompts or warns the student, the student will have a diminished confidence level and a lessened ability to make decisions when he is alone.

Attitude: Belief in the Student's Ability to Compete Equally with Sighted Peers

It is important for the instructor to set an expectation that the student will be able to compete equally with sighted peers in terms of independence. Blind travelers should be equally weighted against their equal sighted counterpart as far as age, development level, and skill level. For example, if a sighted student is expected to plan a bus route, find the bus, and take the bus to a given location, so should the blind student. It is important not to impose limitations in terms of attitudes about blindness. A qualified instructor will challenge the student to reach his highest potential and will view this benchmark of *highest potential* side-by-side with the expectations set for a sighted counterpart of the student.

Mastery of Skills and Expected Outcomes

One key expected outcome is that the blind person should be able to travel and navigate independently, without the assistance of another person. Independent travel will be a key factor in setting future educational and vocational goals. It is important to define independent travel as an expected outcome.

Independence is the ability to go where you want when you want without inconvenience to yourself or others. Normal independence means not rationalizing your fear or inability by saying that you don't feel the need to prove something when in fact you are as helpless as a baby. It means getting to the place where you are comfortable enough with yourself and secure enough about your own inner feelings that you don't have to spend much time bothering with the matter one way or another. It means reducing blindness to the level of a mere inconvenience and making it just one or more of your everyday characteristics. (Jernigan, 1993)

Immersion Experience in Blindness

Instructors will benefit from an immersion experience in blindness. In order to achieve maximum benefit from immersion, experience should include time spent learning to travel under sleepshades. The time spent under sleepshades will assist in a change in perception. Mettler (1995) makes a case for this point.

Instructor trainees will gather their most useful knowledge through the experience of working their way through a graduated cane travel curriculum while wearing sleep-shades. Nothing else learned can reach its full impact unless the trainee succeeds at the same tasks he or she will later assign to travel students. There is no substitute for understanding the experiences of their students as their students work through such a curriculum.

It is also important to introduce varied activities during experience under sleepshades, such as attending a movie or play, or participating in a recreational sport such as water skiing. The result of participation in these types of activities will be part of an attitudinal shift that expands the scope of what instructors believe their students are capable of achieving. Additional benefits include a perceived immediate personal value to the student in pursuing ordinary activities of life, an opportunity for instructors to interact with students in relaxed settings on the basis of equality, and an opportunity for instructors to think beyond blindness and get to know blind persons as individuals (Mettler, 1995).

The Role Model Aspect of Training

It is important for the student to have a clear idea of how to model his own expectations. People, whether blind or sighted, benefit from the experience of others and encouragement to succeed. One key factor here is that being a good role model does not necessarily occur just because the role model is blind. There are blind people who are not well adjusted to blindness, who do not have good skills, and who would not be good role models because of this lack of skills. A good role model is someone who has good skills of blindness, confidence, and proven ability in the skills of blindness. This person can either be a well-adjusted blind person or a sighted person with the same proven abilities under sleepshades.

If the student says “I can’t do it,” the role model should be able to reply “yes you can; if I can do it, you can do it, too” (Omvig, 2002). A good role model sets his expectations high because he has firsthand experience, a clear understanding of any existing variables that may impact the student, and proven success in the given skill. Further, it is critical, in the case of a sighted role model, to include the example of a successful blind person as part of the package. Although some sighted instructors have good skills of blindness and practice under sleepshades, these cannot replace the authentic experience of the student meeting a successful blind person and seeing firsthand what is possible as a blind person.

Competencies Indicated by Certification or Agency Training

It is important to divide competencies into two categories: (a) technical and (b) attitudinal. This division of categories combines the mechanics of cane travel with an instructor’s personal belief in the ability of the ordinary blind person to function independently, and each factor should be considered equally.

Ethics

The qualified O&M instructor has a responsibility to act in an ethical and professional manner with regard to teaching and interacting with clients and support personnel, such as family members, rehabilitation counselors, or school personnel. There are two excellent resources for ethical standards: The ACVREP Orientation and Mobility Code of Ethics and the NOMC Code of Ethics. These documents are included as Appendix G and Appendix H, respectively.

Teaching Across Age Groups

The qualified O&M instructor will be able to successfully teach across age groups by tailoring the instruction style to the age, physical ability, and maturity level of the individual.

O&M instruction should be age-appropriate for children and will always consider factors such as physical health, special considerations such as diabetic complications, and issues such as strength and/or frailty in senior adults. The qualified O&M instructor will be able to accurately evaluate each individual on the basis of these criteria and will design and execute a program of instruction that has a foundation of high expectations.

Summary

This chapter outlined the Comprehensive System of Personnel Development (CSPD): establishing a personnel standard and how CSPD affects the blind O&M instructor. Federal regulations and policy are cited to provide a clear picture of the CSPD implications for hiring qualified O&M instructors.

In addition, this chapter defined important components of what defines a qualified O&M instructor. Each of the components mentioned must function in concert to ensure that the instructor is qualified. A few of these components include necessary skills and attitudes to be taught, effective measures of skill mastery, socially constructed views about blindness, expected outcomes for the student, the issue of ethics, teaching across age groups, the consideration of multiple disabilities and age, and the role model component of instruction.

Recommendations

- Should use the information in this chapter as the basis, if a state agency is currently in the process of developing or modifying specific job criteria and appropriate qualification standards for its O&M instructors.
- Should conduct training with staff to address the issues of attitudinal transformation, immersion experience, and creative confidence-builders with students. Suggestions for training exercises could include seminar discussions about how the blind are portrayed in the media (movie clips from movies about blind people could be shown), examining socially constructed attitudes surrounding blindness issues to raise awareness, and time spent under sleepshades to experience a non-visual model. In addition, a challenge could be put forth to staff to come up with local and regional confidence-builders, such as water skiing, horseback riding, and attending a local event such as a State Fair, concert, or festival with students. When designing these types of exercises, staff should encourage maximum exploration and experience for the student and minimal intervention as appropriate to the skill level of the students attending.
- Should implement activities for students designed to be problem-solving activities. Students would be encouraged to gather information and implement it as part of instruction. For

example, ask the students to independently obtain the address of a place of business that is of interest to them, i.e., a library, local attraction, or store. Next, have the student determine the most appropriate bus route by contacting the local bus authority, and have the student map out the plan of how to reach the appropriate destination. The final step of this activity would be to have the student implement the plan and seek out the destination.

- Should implement cross-training exercises that would take another component of the student's training and apply it to an O&M activity. For example, if the student is involved in training with cooking, have the student select a recipe, shop for the groceries, and prepare the dish. This will give the student direct experience with seeking out a nearby grocery store, obtaining the groceries, and bringing the concept to fruition by preparing the recipe.
- Should have students and instructors attend conventions or gatherings of blindness consumer groups. Attending these gatherings will expose students to other blind travelers and will reinforce what is possible with comprehensive training. This role modeling opportunity will expose students and instructors to varying skill levels. This information can provide a benchmark for the student that will help define his or her level of independence and encourage dialogue regarding what defines good O&M skills. In addition, this type of experience will expose students to educational opportunities surrounding issues pertaining to blindness.

Footnote

¹Historically, state agencies have also designated other professional and paraprofessionals to assist their blind consumers in learning independent travel. These may be referred to as cane travel instructors, travel instructors, etc. If a state agency designates such categories of professionals and paraprofessionals it must also establish standards. However, if there are not licenses, certifications, or registration requirements for a cane travel instructors, travel instructors, or other categories designated by the state agency, the state must use or develop other comparable requirements, such as State personnel requirements for that profession or discipline. The scope of these comparable requirements that are applied to jobs for which no licensing or similar requirements exist is left to the reasonable judgment of the state agency.

References

ACVREP Orientation and Mobility Code of Ethics.

Code of Federal Regulations (CFR), 34 CFR Sec. 361.18(c) (2001). *Title 34, Volume 2, Parts 300 to 399*, 284-285. Revised July 1, 2001. Washington, DC: U.S. Government Printing Office.

Federal Register, Vol. 62, No. 28, Tuesday, February 11, 1997, 6318.

Federal Register, Vol. 65, No. 39, Monday, February 28, 2000, 10623.

Federal Register, Vol. 66, No. 11, Wednesday, January 17, 2001, 4424.

Ferguson, R. (2001). *We know who we are: A history of the blind in challenging educational and socially constructed policies*. San Francisco: Caddo Gap Press.

Ferguson, R. J. (2003). *Blind mobility instructors: A graduate program designed with blind people in mind*. Paper presented at the 11th International Mobility Conference, March 30, 2003, Stellenbosch, South Africa.

Hill, A. (1997). Teaching cane travel: A blind professional's perspective. *American Rehabilitation*, 23(3), 23-24.

Jernigan, K. (1993). *The nature of independence*. Baltimore: National Federation of the Blind.

Mettler, R. (1995). *Cognitive learning theory and cane travel instruction: A new paradigm*. Lincoln, NE: State of Nebraska, Department of Public Institutions, Division of Rehabilitation Services for the Visually Impaired.

Mettler, R. (1997). The cognitive paradigm for teaching cane travel. *American Rehabilitation*, 23(3), 19-20.

NOMC Code of Ethics.

Omvig, J. (2002). *Freedom for the blind: The secret of empowerment*. Fayetteville, AR: University of Arkansas Press.

Paige, G. (1992). Teaching the thinking process that occurs during problem solving. *Journal of Instructional Psychology*, 19, 30-33. Mobile, AL: V-U Publishing.

P.L. 105-220 (1998). *Workforce Investment Act of 1998. Title IV: Rehabilitation Act Amendments of 1998, Section 101*. State plans.

Schroeder, F. K. (1995). Growing up with independence: The blind child's use of the white cane. *The Braille Monitor*. Baltimore: National Federation of the Blind.

Schroeder, F. K. (1998). *State plans for comprehensive systems of personnel development*. Commissioner's Memorandum CM-98-12 issued on May 29, 1998. Washington, DC: Rehabilitation Services Administration, Office of Special Education and Rehabilitative Services, Department of Education.

Study Questions

1. The purpose of the Comprehensive System of Personnel Development (CSPD) is:
 - a. to serve as an in-service training program for state Vocational Rehabilitation (VR) agencies.
 - b. to ensure the quality of personnel who provide VR services to assist individuals with disabilities to achieve high quality employment through the VR program.
 - c. to ensure that all State VR agency personnel are certified by a national certifying body.
 - d. none of the above.

2. CSPD requires state agencies to establish personnel standards for rehabilitation professionals and paraprofessionals. The professions or disciplines for which standards are to be maintained are established by the:
 - a. Commission on Rehabilitation Counselor Certification (CRCC)
 - b. Rehabilitation Services Administration (RSA)
 - c. State VR agency
 - d. Council on Rehabilitation Education (CORE)

3. True or False. The RSA requires that all O&M instructors who work for State VR agencies be certified by a national certifying body.

4. True or False. State agencies are permitted to hire blind O&M instructors that do not meet the agency's current certification standards.

5. Please choose the statement that best describes the circle that surrounds socially constructed views about blindness.
 - a. The circle represents the idea of blind people being so affected by the socially constructed views about blindness that they have an insurmountable personal perception that they cannot advance in achieving their personal goals.
 - b. The circle represents the idea that instruction received during vocational rehabilitation will produce students who do not consider socially constructed views about blindness significant and, therefore, will not aspire to overcome the public's perception of blindness.
 - c. The circle represents the idea that the public's perception of blindness fosters independence and confidence in blind people that leads to a low unemployment rate.
 - d. The circle represents the idea of a public perception that blind people are less competent than sighted people. Instruction received during vocational rehabilitation training may produce students who are dependent on the instructional setting and lack the confidence to travel independently, and the result is that blind people are considered less competent by the public.

Chapter 7

Safety and Liability

By Christine Boone

Introduction

In an increasingly litigious society, it is small wonder that orientation and mobility (O&M) instructors and other rehabilitation professionals are becoming more concerned about the liability they may incur when providing instruction to their customers who are blind and visually impaired. In this chapter, we will consider the safety, liability, and insurability concerns that surround the profession of O&M. Among the questions we will address are these: Is the teaching of O&M an inherently dangerous profession? How susceptible is the average O&M instructor to incurring liability for accidents, which may occur during a lesson? What are some of the ways in which instructors might protect themselves from any liability which might attach to them? Finally, and most important, what are the real and pressing safety issues in the teaching of O&M, and how can they best be addressed?

Several articles have appeared in recent years that address the issue of liability as it relates to O&M instruction. Many of these writings have focused upon legal theories, such as Negligence, Tort claims, Assumption of Risk, and Contributory Negligence. This chapter will attempt to translate legal doctrines and treatises on the subject of liability into practical information that applies to the average O&M instructor in the field of work with the blind. In addition, the chapter will seek to offer simple solutions and approaches that can assist an instructor in ensuring that the student will be a safe traveler as well as an effective one, both during the training process and thereafter.

While injuries during O&M instruction are far from commonplace, they can and do occasionally occur. Most instructors who have taught for any length of time will have experienced an occasion when one of their students has twisted an ankle or tripped during a travel route. In most instances, the student sustains nothing more substantial than a bruise or sprain, and no legal action is taken by these individuals or their families. In rare instances, a family or an individual will seek to bring suit against the instructor or their employer as a result of such an incident. While these occurrences are unfortunate, they generally do not lead to any economic recovery on the part of the litigant. An exhaustive search of all reported cases on pedestrian injuries in the United States failed to uncover any instance in which an instructor was found to be personally liable for any injury sustained by a student.

This is the good news. The bad news is that we continue to see an increase in the number of legal claims filed in the United States each year, and it is understandable that many instructors may continue to limit themselves and/or the instruction they provide to students out of concerns over safety issues or fear of liability. As you read this chapter, you will see that these fears are, in large part, unfounded. The evidence, and in some cases the lack thereof, suggests that O&M

instructors are not engaging in an inherently dangerous activity, when providing instruction to persons who are visually impaired or blind, as previously thought. Nonetheless, some simple safeguards do exist that O&M instructors can employ in order to ensure that they provide the finest instruction possible to students while protecting themselves against liability and their students against injury.

The Danger in Teaching and Learning O&M

It has been speculated that independent travel by persons who are blind or visually impaired constitutes one of the most dangerous activities in which these persons might engage. There are those who continue to believe that a pedestrian who is blind or visually impaired runs an exponentially greater risk of injury along the highways and byways of America than does a sighted traveler. In examining case law and government reports on pedestrian safety, we find no evidence to support these concerns. According to the U.S. Department of Transportation National Highway Traffic Safety Administration (2002), persons with disabilities accounted for just 65 (1.3%) of all pedestrians killed in motor vehicle accidents in 1991 (4,882). This percentage is actually smaller than the estimated 2% of the total U.S. population that is made up of persons with significant disabilities, according to the U.S. Census Bureau (2000). These numbers are supported by the insurance industry, which forbids added liability requirements for persons who are blind or disabled because no actuarial evidence exists to suggest that these individuals constitute a higher risk than does the general population.

From time to time, those who have examined various methods of O&M instruction and instructor preparation have expressed a concern that certain teaching methods might lead to increased risk to the student or added liability for the instructor (Olson, 1981, p. 338). Specifically, it has been postulated that the method of instruction commonly termed Structured Discovery Learning may carry with it a higher risk, because students who are taught using this method are not always in the company of an instructor. At the time of this writing, no research has been conducted concerning the link between the instruction provided to persons who are blind or visually impaired and any subsequent serious injury or death that may occur in pedestrian accidents. Anecdotal evidence suggests that approximately 20 blind persons have lost their lives in pedestrian accidents involving motor vehicles during the last 20 years. One of these persons had received partial training in the Structured Discovery Learning model. All of the remaining fatalities were individuals who had received no training, or limited conventional instruction. In some of these instances, the actual or proximate cause of the pedestrians' injuries or deaths was a driver's negligence or a sudden, intervening medical emergency, such as a heart attack or stroke affecting either the driver or the pedestrian.

In short, the theory that O&M instruction is a profession fraught with safety concerns finds no support in case law or research. In fact, even English law cases from the seventeenth and eighteenth centuries provide no reference to blind persons encountering grave danger, elevated risk, or injury in traveling about (Dobbs, 1993).

Necessary Safeguards and Protective Action

Insurance

The first and most basic safeguard is to carry adequate insurance. In general, those who work for state agencies will not need to purchase any insurance in addition to that which is automatically provided in conjunction with state employment. An exception to this rule may occur with respect to an individual's automobile insurance (see below). Most states are self-insured, but some may purchase liability and omissions and errors coverage from an outside provider. In either case, the state's coverage extends to all employees as long as they are acting within the scope of their employment. Any O&M lesson that takes place between a customer of the agency and an O&M instructor and which does not involve illegal or illicit activity will fall safely within an employee's scope of employment. This is the case even if the lesson is provided at a time that is not within an employee's normal working hours, i.e., during an evening lesson (Dobbs, 1993).

While most private agencies are not large enough to be self-insured, these entities will carry insurance, including coverage for Workers Compensation and errors and omissions. This will protect employees who are acting within the scope of their employment. Because these private insurance policies can vary among carriers and among agencies, the wise O&M instructor will want to be certain that the nature of their work and the hours during which they might be providing instruction are known to their employer. All of this information should be contained in an ordinary job description, which every employee should have. Both employee and employer should sign this job description so that there can be no doubt as to the full scope of duties connected with the O&M instructor's employment.

As for the private or contracting O&M instructors, they will need to carry insurance for errors and omissions in order to contract with most entities. These policies will again provide coverage for most accidents as long as the instructor and student are not involved in any illegal or illicit activities, and the instruction is provided in accordance with the terms of the contract. In other words, instructors cannot expect to be covered if, for example, they have used up all of the hours in the contract or undertaken an activity that clearly falls outside the range of activities anticipated by the contract.

When developing a contract for the provision of O&M instruction, it is generally wise for an instructor to include broad parameters for the provision of instruction rather than enumerating specific lessons to be learned or techniques to be taught. Not only will this allow for variances between students that might not be anticipated by an instructor at the outset of training, but also it allows the instructor to use sound judgment in modifying his or her approach during the course of training in response to changing circumstances or broadening goals on the part of the student. For example, rather than stating that a student will "learn the route from his home to the campus and be able to travel to all of his classes independently," the following contract language is suggested: "Instructional areas to be addressed will include the following: indoor travel, residential travel, campus travel, bus travel, urban travel, and travel etiquette." Not only will this language allow for flexibility in the provision of travel instruction, it will serve to protect the instructor in the unlikely event that a student sustains an injury during the course of a travel route.

Itinerant instructors will have an additional insurance-related concern, because they customarily transport students to and from lesson sites in their personal vehicles. In general, in order to avoid liability in the event of an accident involving such vehicle, an itinerant will need to carry a policy rider for Business Usage. This involves additional cost for personal auto insurance; however, absent such coverage, the employer could be found liable for injuries sustained by a student during a motor vehicle accident under a number of legal theories. Consequently, it is reasonable that an employer, including a school district or a state, would reimburse the itinerant O&M instructor for carrying Business Usage coverage.

Instructors who are fortunate enough to have access to an employer-owned or -leased conveyance will be protected against personal liability in the event of an accident, as long as they are acting within the scope of their employment. It is important to note that stopping for a soda or running an errand during transport to or from a travel lesson could be considered to be a *frolic*. Believe it or not, frolic is a legal term as used here (Dobbs, 1993), and it immediately takes the employee out of the scope of employment, nullifying the employer's insurance coverage and exposing the instructor to total liability in the event of an accident.

Instruction in O&M often includes the teaching of bus, subway, light rail, or train travel; and it has been suggested that riding on public transportation will expose an instructor to added liability (Marsh, Hartmeister, & Griffin-Shirley, 2000). In actuality, this particular element of O&M instruction raises no undue liability or safety concern. In the event that a student sustains an injury while riding public transportation, the incident would be handled in the same manner as would a similar occurrence involving a sighted passenger, and the transportation company's insurance would apply. The only exception to this rule might occur if the student were engaging in an inherently risky behavior, such as standing on a seat, in the presence of an instructor and the instructor failed to intervene to correct such behavior. Note that standing on a moving conveyance when no seats are available is NOT considered to be an inherently risky behavior. This is because passengers on public transportation routinely stand on crowded conveyances, and no actuarial evidence exists to substantiate the notion that persons who are blind or visually impaired constitute a higher safety risk than does the general population when engaging in routine activities.

Joint Planning

One of the best ways to protect oneself in the performance of any job is careful planning. As the saying goes, plan your work and work *your plan*. The establishment of a comprehensive plan for the provision of O&M instruction will not only make for a more successful teaching and learning experience for instructor and student, it will also help to protect the instructor from liability. This is because, as O&M professionals well know, the plan details a carefully choreographed instructional road map, outlining a methodical progression through the elements of safe travel with a long cane or dog guide. Adherence to this plan will help to counter any negligence claims, which might arise because it demonstrates that the instructor was acting in a reasonable manner and exercising reasonable care in the performance of their job.

For optimum effectiveness, the instructional plan must be developed in concert with the student and should be signed, at the bottom of the document, by both the instructor and the student. The signatures of both parties at the end of the training plan signify that both have read the entire document and agree to its terms. If the student is a minor, the training plan should be signed by a parent or guardian as well as the student.

As is the case with the contract language indicated above, it is not necessary to provide exhaustive detail as to the method and minutia of the instruction to be provided. An outline will allow for some flexibility, thereby maximizing the effectiveness of the training while allowing for changes in circumstances and/or goals.

A good training plan is not lengthy and may include language such as the following:

Goal: Travel independently in the community and on campus—instruction to be provided

1. Use of the long cane
2. Indoor travel, including hallway navigation; using stairs, escalators, and elevators; and room location
3. Residential outdoor travel, including travel along residential streets, address location, and crossing unlighted intersections
4. Campus travel, including building location and travel across the campus
5. Use of public transportation
6. Urban travel, including crossing lighted intersections and travel along busy streets
7. Travel etiquette, including asking directions, locating an empty seat (on a bus or train and in a room), and travel in crowds.

Some instructors may shy away from the joint development of a training plan, believing that the student, not being acquainted with the particulars of O&M instruction, will not benefit from involvement in plan development. While it is true that most students will not be familiar with the particulars of O&M instruction, they will benefit from a discussion of the plan in which they will play so integral a role (Dodds, 1987). The instructional plan for the travel student is much like the syllabus in an independent study course at a college or university. It charts the course for both instructor and student and tells each what is expected of them. Like the contract, the jointly-developed plan signifies that both parties agree with the instruction being provided.

An O&M instructor might not use the jointly-developed plan because it is felt that the student will unnecessarily be limited by their own lack of self-confidence and will, therefore, agree to a far more limited level of instruction than the optimum. It is important to realize that, like any contract including an Individual Plan for Employment, the O&M instructional plan can and should be modified to reflect a student's broadening goals. Again, the modification or amendment should be signed by both parties as an indication of agreement.

Documentation

Perhaps the most vital link in the chain that protects the O&M instructor against liability is careful and routine documentation. This is really not a complicated or lengthy process. Each time

an instructor meets with a student, whether by telephone or in person, a notation should be made in the student's case file. The notation should include the student's name, the date of contact, and type of contact, i.e., telephone or in person. Then, a brief paragraph should indicate the subject of the meeting and, if a lesson was provided, a rough outline of the things covered and the level of performance demonstrated by the student.

Instructors who receive referrals from vocational rehabilitation (VR) counselors or other rehabilitation professionals working in the same agency should automatically place these contact reports in the customer's master file so that others working with the individual can access them and follow the customer's progress. Contracting instructors should also make it a practice to forward case notes to the contracting agency on a monthly basis. Certainly, the instructor will likely wish to maintain a copy for his or her own records as well.

Absent any problems in a particular case, these contact reports may never need to be read after they are placed in the file. However, in the event of a customer appeal, dispute, or injury, these records will serve to protect the instructor by outlining the professional nature and appropriateness of the instruction provided. The contact reports can also link the instruction provided to the instructional plan that was previously mentioned and agreed to by the student.

Health Concerns and Additional Disabilities

In the event that instruction is being provided to an individual with a legal guardian, the plan should be shared with and signed by a guardian. Each day's lesson should be shared with the student immediately before it takes place so that the student will know what the goal is for that day. This approach can and should be modified in accordance with the functional level of the student in question.

Instructors who work with persons who are brittle diabetics or frail elderly or whose physical strength is otherwise compromised will know that these factors must be taken into account when planning an O&M curriculum for these individuals. If persons with multiple disabilities or major health issues are to enjoy a reasonable quality of life, they will have the need to travel independently, to the best of their ability. Certain steps can be taken by the instructor to protect the health and safety of these students while traveling.

In the case of the diabetic, education and preparedness are essential to the well-being of the customer and the achievement of any rehabilitation goals, including those related to O&M. If an instructor is asked to provide travel instruction to a diabetic who is unable to administer his or her own insulin and/or otherwise independently manage their diabetes, this customer should immediately be referred to a diabetic specialist in order to learn these essential skills. It is recommended that only basic cane use, indoor travel, and limited residential travel instruction be provided prior to a student's mastering diabetic management.

Once students are able to self-administer insulin and self-manage this disease, they will be able to prepare adequately for longer and more complicated routes. Remember that many individuals who are blind and visually impaired are quite sedentary before embarking on a VR plan.

Instruction in O&M in particular requires a significant amount of exertion and can sometimes lead to fluctuation in blood sugar levels.

The instructor should thoroughly educate all students with diabetes in the importance of carrying emergency sugar (in whatever form they choose) with them on any and all travel excursions. These students should also have medical information on their persons in case of emergency. These safeguards, if practiced habitually during training, will carry over into these students' lives after training and will help to keep them alert and safe while traveling.

Persons with multiple disabilities may need to use other supportive devices in addition to the long cane. The most common of these is the support cane. Many instructors will provide a support cane to the individual in lieu of the long cane, believing that support is the most important element in the person's ability to travel safely. This practice, in fact, exposes an instructor to liability. This is because the support cane, when used for support, CANNOT give the individual information about what lies ahead. If the support cane is being used to detect objects that do lie ahead, it cannot provide support. The student must be taught to use the support cane in conjunction with the long cane. When applicable, dual cane instruction should be accompanied by some practical tips, such as using a backpack to carry personal items. If the customer later chooses to travel using only one of the canes provided and an accident ensues, the instructor is protected, because the proper instruction was provided and the student chose to disregard that instruction.

Persons who are frail elderly will generally need to use a walker, support cane, or wheelchair in tandem with their long cane. Yes, this will be somewhat challenging, and these persons may not travel extensively. However, this instruction will give them the freedom to travel independently in their residential setting or around the block. As always, a record of this instruction, and the additional devices required by the traveler, is contained in the customer's case file.

Genuine Safety Concerns

Are there real environmental factors or other circumstances which pose actual safety risks for travelers who are blind or visually impaired? Certainly there are, but the accomplished O&M instructor will already be well aware of these and will have some favorite methods and techniques for instructing students in the proper management of these situations.

First, because the traveler who is blind generally places a good deal of reliance upon their hearing and gathers a plethora of environmental information from auditory cues, a large amount of ambient noise can constitute a tangible safety risk to such a traveler. Students of O&M should be instructed to recognize situations in which there is too much noise to allow them to hear traffic sounds and other important cues properly. Generally, noise becomes a problem when crossing streets with or without traffic controls. It is quite appropriate, and advisable, for an instructor to teach students to refrain from crossing streets when the ambient noise is too great for them to hear properly. The two appropriate alternatives which the student might employ in such a situation are (a) walk one or two blocks further along the street, until the noise has abated, then make a crossing and return to the original route and (b) ask a passing pedestrian for assistance in determining when it is safe to cross.

It has been suggested that the presence of certain architectural or environmental conditions poses an additional safety threat to students and travelers who are blind and visually impaired. For example, the August 2000 *Journal of Visual Impairment & Blindness* article on Legal Issues contains an example of a child, who has received considerable instruction in self-protective technique, receiving a severe abrasion on her head when she failed to use this technique and walked into a tree branch (Marsh et al., 2000). In actuality, it is scarcely surprising that this young girl would decline to use a technique that is socially unappealing. We challenge any sighted person to stroll the streets of America with one arm and hand held out in front of their face. Yet, it is certainly true that a long cane will not detect overhanging tree branches, and these can cause injury to travelers who are blind and visually impaired. The solution to this conundrum lies in the wearing of a brimmed hat during O&M instruction. Instructors should ask students to wear a cap of their choosing, as long as it has a brim, when traveling. Some instructors may also want to suggest the wearing of glasses to protect the eyes. A reasonable person will wear a hat, and this accessory can be as fashionable as the wearer's creativity allows. The hat and glasses will act in concert to protect the student's head and eyes from protruding branches and other elevated objects that a cane, used in the ordinary and acceptable manner, cannot detect. Because hat wearing is a socially acceptable behavior, it is far more likely that an individual will continue to wear a hat when traveling, after all instruction has been completed. Consequently, the instructor is again protected against subsequent liability.

Adequate Preparation

“The ultimate goal of orientation and mobility, then, is to enable the student to enter any environment, familiar or unfamiliar, and to function safely, efficiently, gracefully, and independently by utilizing a combination of [orientation and mobility] skills” (Hill & Ponder, 1976, p. 1).

Hill and Ponder's (1976) premise suggests that the properly trained student of O&M is able to travel safely and independently in any environment that might be encountered in the course of daily life. It does not suggest that O&M students should be sheltered from hazards or that hazards will constitute an ongoing safety risk for students or instructors of O&M. At the same time, Section 1.3 of the Association for the Education and Rehabilitation of the Blind and Visually Impaired (AER) Code of Ethics (1994) for O&M instructors states that “the orientation and mobility specialist will take all reasonable precautions to ensure the safety of the student from conditions which interfere with learning.” The code is not specific as to whether this statement applies to extraordinary and unusual conditions or conditions that regularly occur in the built environment.

Hill and Ponder's (1976) work encourages the O&M instructor to intentionally expose students to hazards and conditions that routinely occur in the environment in order to adequately prepare them to travel independently throughout their lives.

The legal theory of negligence holds that one who fails to exercise reasonable care in the performance of a duty is considered negligent. Ordinary care means that, in the performance of a duty, one must take into account anything that a reasonable person would expect to occur

(Dobbs, 1993). Applying this theory to O&M instruction, we begin with the premise that the O&M instructors are preparing the students to travel in the built environment. A reasonable person would anticipate that the built environment might include such factors as construction zones, parking lots, and places with a high level of ambient noise. In order to exercise reasonable care in the provision of instruction, then the instructors should, throughout the instructional process, expose the students to these situations. More important, the instructors must provide the students with the tools they will need to safely and efficiently navigate in these areas, both anticipated and unexpected. The students are, thus, prepared to remain safe when encountering these situations after the conclusion of O&M instruction.

Weather is another variable that is sometimes inadequately addressed during O&M instruction. Again, the reasonable person would anticipate that an individual who is blind or visually impaired would need to travel during inclement weather at some point. This is particularly the case if the student is employed or attending school. While it is not pleasant to travel out of doors in rain or snow, these elements can and do affect the environment in significant ways. Consequently, instructors should provide substantial O&M instruction in all types of weather that occur with any regularity in their geographic location. The intentional exposure to elements and situations, which the reasonable person would expect to occasionally occur during the normal course of events, should effectively counter any negligence argument that might be brought against the instructor following training.

Summary

Like drivers' education courses for prospective motorists or freshmen orientation for the young college student, instruction in O&M prepares blind and visually impaired persons to travel safely and efficiently in their communities and around the world. These activities may engender some exposure to and assumption of risk, but they also open new vistas of opportunity to those who take advantage of them. Joint planning with the student helps to ensure that the course of O&M study will meet the needs of the student. Following a planned, progressive, and thorough course of instruction helps to ensure the safety of the student both during training and upon completion of the training program.

Adequate and routine preparation of contact reports will document the plan and its execution and will serve as excellent protection for the instructor and his or her employer in the event that any legal action is brought by a current or former O&M student. As in all professions today, adequate insurance coverage should always be in place prior to the provision of any instruction. Reasonable care should always be exercised in the provision of O&M instruction, and students should be routinely exposed to variables that are found in the built environment.

While the flag of safety and liability continues to be waved by some professionals and consumers alike, the facts unequivocally indicate that this profession, and both of the predominant models by which it is practiced, is exceptionally safe for instructors and students alike.

Recommendations

Any O&M instructor, whether employed by a public or private entity or working as an independent contractor, should adopt the following practices:

- Carry adequate insurance for errors and omissions and (for itinerant instructors only) proper automobile coverage.
- Prepare an Individual Training Plan with every student. The student should take an active role in preparing this plan with the involvement of a parent or guardian, where appropriate.
- Incorporate significant exposure to and experience with as many variables as possible in the O&M curriculum, including variations in weather, construction areas, excessive ambient noise, urban and rural settings, and the unexpected.
- Document each and every contact with a student, as well as contacts with family members, educators, and other professionals involved with the student.
- For students who are also customers of a Vocational Rehabilitation agency (including those receiving services under an Independent Living Older Blind Program), the instructor should provide the customer's counselor with copies of the training plan and all other documentation.
- Practitioners who continue to believe that O&M instruction is an inherently dangerous profession should feel free to consult government statistics and case law in order to satisfy themselves that this belief is not supported by the facts.
- All O&M instructors should exercise reasonable care at all times in the performance of their jobs.

References

Association for the Education and Rehabilitation of the Blind & Visually Impaired, Code of Conduct (1994).

Dobbs, D. B. (1993). Torts & compensation: Personal accountability and social responsibility for injury (2nd ed.). St. Paul, MN: West Publishing Co.

Dodds, A. G. (1987). Mobility training for visually handicapped people: A person centered approach. London, England: Croom Helm Ltd.

Hill, E., & Ponder, P. (1976). Orientation and mobility techniques. New York: American Foundation for the Blind, Inc.

Marsh, R. A., Hartmeister, F., & Griffin-Shirley, N. (2000). Journal of Visual Impairment and Blindness, Legal Issues for Orientation and Mobility Specialists: Minimizing the Risks of Liability.

Olson, C. (1981). Paper barriers. Journal of Visual Impairment and Blindness, 75, 338.

U.S. Department of Transportation, National Highway Traffic Safety Administration (2002). 2001 data report, table 98. Washington, DC: U.S. Department of Transportation.

U.S. Census Bureau (2000). Census 2000.

Study Questions

1. Which of the following safeguards are appropriate for the itinerant O&M instructor to employ?
 - a. Prepare a written report following each lesson.
 - b. Carry adequate insurance.
 - c. Accompany the student at all times during a lesson, maintaining a distance of not more than 150 feet between instructor and student.
 - d. Only a. and b.

2. In what instance(s) should another individual add their signature to a student's O&M training plan?
 - a. When the student is married, the spouse should sign.
 - b. When the student is a minor child, a parent or guardian should sign.
 - c. If, in addition to blindness, the student has a cognitive disability, a care-giver should sign.
 - d. Only b. and c.

3. True or False. If an O&M instructor accompanies a student, the instructor will be considered within the scope of employment and thereby protected against liability, no matter what activities instructor and student pursue together.

4. True or False. Once developed, a training plan cannot be significantly altered. If it is, this will result in the student being closed "unsuccessfully from training."

Chapter 8

Partnerships

By Tyra Rice Hawkins and Joe D. Cordova

Introduction

“*Partner*: a relationship, frequently between two parties, in which each has equal status and certain independence, but also implicit or formal obligations to the other” (Webster’s New World Dictionary, 2002).

This chapter addresses the importance of establishing and maintaining partnerships with relevant stakeholders within the rehabilitation system and, in particular, discusses how these partnerships directly impact the provision of quality orientation and mobility (O&M) services to blind consumers. Emphasis is given to the roles and responsibilities of various stakeholders, including the roles and responsibilities of the state agency; university partners; orientation and mobility community service providers; and O&M travel instructors. The chapter also describes the unique and vital role of consumer organizations of the blind and how strong working relationships with consumers in a state serve as an important resource to clients as well as offering important political support. In addition, the chapter examines the specific requirement for a formal partnering relationship between vocational rehabilitation and special education in the area of transition from school to work.

Background

The vocational rehabilitation (VR) program is authorized by the Rehabilitation Act of 1973 and is administered by the Rehabilitation Services Administration (RSA) within the U.S. Department of Education. RSA is committed to providing the assistance and opportunities needed to achieve high quality employment and independence in their communities to blind people and other individuals with disabilities (particularly individuals with significant disabilities) (Wilson, 2001).

Throughout the years, the rehabilitation system in this country has evolved from a prescriptive or medical model of rehabilitation to a more self-directed model of rehabilitation, which emphasizes consumer empowerment and individual choice. The strategic development of viable partnerships with a variety of entities closely collaborating throughout the rehabilitation process becomes a critical function in this new paradigm of rehabilitation. Effective partnerships will enhance the rehabilitation professional’s ability to provide quality services and improve the blind consumer’s overall rehabilitation experience. This process includes (a) the setting of goals and benchmarks; (b) collection and analysis of self-assessment data; (c) identification of critical issues; and (d) the development, implementation, and oversight of improvement strategies to ensure compliance and improved results for consumers who are blind (Wilson, 2001).

The Role and Responsibility of the State Agency Partner

In 1920, the Smith-Fess Act created the Vocational Rehabilitation program in the United States. It began with a small budget and provided counseling, training, prostheses, and placement services to people with physical disabilities. The passage of the Social Security Act of 1935 established the state-federal vocational rehabilitation program as a permanent program that can only be discontinued by an act of Congress. However, blind people were not routinely offered rehabilitation services until the Bardonia-LaFollette Act of 1943, nearly a quarter of a century after the program's creation. For many years, blind people presumed that rehabilitation professionals knew what was in their best interest. However, as time moved on and consumer organizations grew and developed, blind people increasingly learned to view themselves as capable of guiding their own destinies and, accordingly, rejected the paternalistic, medical model of rehabilitation. Although it was a long time coming, gradually the program began to recognize the capacity of blind people. Perhaps the most dramatic manifestation of this recognition is evidenced in what has come to be known as the *choice* amendments. The 1992 amendments to the Act introduced the principle of *informed choice* into the statute and provided individuals with disabilities expanded opportunities for increased involvement in the direction of their vocational rehabilitation programming. The Rehabilitation Act Amendments of 1998 strengthened the previous requirements that expanded opportunities for increased participation of individuals with disabilities in developing and implementing their vocational rehabilitation programs. Section 100(a)(3)(C) of the Act states that the VR program must be carried out in a manner consistent with the following principle:

Individuals who are applicants for such programs or eligible to participate in such programs must be active and full partners in the vocational rehabilitation process, making meaningful and informed choice—(i) during assessments for determining eligibility and vocational rehabilitation needs; and (ii) in the selection of employment outcomes for individuals, services needed to achieve the outcomes, entities providing such services, and the methods used to secure such services.

The Act makes clear in its policy statement that all programs, projects, and activities funded under the Act must be “carried out in a manner consistent with the principles of respect for individual dignity, personal responsibility, self-determination, and pursuit of meaningful careers, based on informed choice, of individuals with disabilities” (Section 2[c][1] of the Act).

The Role and Responsibility of the University Partner

The Vocational Rehabilitation Act Amendments of 1954 included funding to colleges and universities for preparation of rehabilitation professionals. The U.S. Office of Vocational Rehabilitation in June 1958 identified the education of orientation and mobility specialists as its second highest priority in the area of preparing rehabilitation personnel (Voorhees, 1962). A national conference funded by the American Foundation for the Blind (AFB) in 1959 established the criteria for the orientation and mobility personnel, developed university curriculum, recommended the length of preparation, and identified sponsors.

University training programs offering advanced degrees in O&M can serve as an important partner in the rehabilitation process. There are a limited number of university programs in this country that specialize in the study of O&M. Consequently, these programs have been unable to meet the demands for O&M professionals by rehabilitation agencies across the country. Thus, the formation of partnerships with these university training programs is essential in the VR agency's efforts to recruit qualified professional personnel and assist in the professional development of current staff in order to fulfill the agency's Comprehensive System of Personnel Development (CSPD) requirements. VR agencies can also serve as valuable field practicum sites for student interns enrolled in university O&M programs, thereby helping in the preparation of new O&M instructors while increasing the amount of O&M services available to consumers in the state.

The Role and Responsibility of the O&M Community Service Providers

Private service providers, referred to in the Act as Community Rehabilitation Programs (CRPs), play a crucial role in the rehabilitation process. Due to budgetary constraints and staffing shortages, VR agencies are increasingly turning to private service providers to perform many of the rehabilitation services traditionally offered by VR agencies. Providers of O&M services should share information about the types of curriculum, qualifications of staff, success rate of graduates, and consumer satisfaction with the blind consumer in order to assist the consumer in making an informed choice in the selection of a particular service provider. On-site visits and tours to the actual facility where the service provider is located is a highly effective way for a blind individual to gain firsthand information that can assist the consumer in making an informed choice about a particular service provider. The rehabilitation counselor should support the consumer in visiting potential service programs by assisting with travel and related costs as part of the consumer's Individualized Plan for Employment. The blind consumer should take this opportunity to explore the program in detail by visiting with staff as well as other blind participants in the program in order to gain a more in-depth view of the program. Blind consumers should be provided guidance by the VR professional about the various models and strategies of orientation and mobility and the benefits of such practices and techniques to the consumer.

It is important to note that informed choice is at the program level and does not mean that service providers can be made to alter their training methods or curriculum under the concept of informed choice. If an individual or program uses a particular type of cane or makes use of ocular occlusion (sleepshades), consumers should be made aware of these requirements before entering the program. Once the consumers have selected service providers, they cannot expect the program to fundamentally alter its training philosophy or approach under the concept of informed choice. Informed choice means that the individual has the most complete information possible when selecting a service provider, including information concerning program philosophy and requirements.

The Role and Responsibility of the O&M Travel Instructor

An orientation and mobility specialist is a professional who specializes in teaching travel skills to visually impaired persons (Blasch, Wiener, & Welsh, 1997). Orientation and mobility services

are provided in a variety of ways by state rehabilitation agencies. While the term *orientation and mobility* encompasses many different types of independent travel instruction, state VR agencies typically offer cane travel training. Instruction in independent travel using a dog guide is provided by private schools specializing in this type of training and is not a part of independent travel instruction available through state rehabilitation agencies.

Historically, rehabilitation teachers, many of whom have been trained by state rehabilitation agencies, have provided much cane travel instruction. A rehabilitation teacher (RT) is a professional whose primary goal is the rehabilitation of individuals who are visually impaired; that is, the provision of instruction and guidance to help individuals to acquire the skills and knowledge to manage their daily lives (Asenjo, 1975); and to achieve self-confidence and self-sufficiency at their highest attainable level (LaGrow, 1992). Rehabilitation teachers are often referred to by a variety of titles, such as blind rehabilitation specialist, independent living specialist, and living skills instructor. The role of the rehabilitation teacher, while quite broad, often includes some O&M services.

While AER does not approve this policy as a best practice, many state agencies use rehabilitation teachers to provide at least some O&M services due to the chronic shortage of O&M professionals. The use of rehabilitation teachers varies widely from state to state. A small number of state rehabilitation agencies restrict cane travel training to certified O&M instructors, while others permit rehabilitation teachers to provide basic cane travel instruction to blind consumers in their immediate home environment. Still, other state agencies have provided comprehensive training to enable rehabilitation teachers to carry out the full range of O&M services. Regardless of whether the instructor is university- or agency-trained, it is important that state agencies ensure that O&M training is provided by personnel who have the requisite training and experience to offer consistent, high-quality instruction.

The Role of Consumer Organizations of the Blind

Building strong partnerships and cultivating harmonious relationships with consumer organizations of the blind can often be the best safeguard against potential political threats to a rehabilitation agency, such as in today's environment of consolidation of services and budgetary cutbacks. While state governments throughout the country continue to struggle with the problem of dealing with increasing budget deficits, separate VR agencies for the blind face the ongoing threat of being consolidated into larger umbrella agencies within state government.

Governmental and elected officials perceive this strategy of consolidating government programs and services into much larger umbrella agencies, such as human services or workforce agencies, simply as a means for improving management efficiency and reducing costs. These political considerations tend to ignore the higher level of performance, in terms of the quality of employment outcomes and general satisfaction with services by blind consumers, demonstrated by separate agencies for the blind over the years (Cavanaugh, 1999). Consumers of rehabilitation services can be strong allies to the VR agency, if they perceive that they are regarded as valued customers and are actively engaged in the rehabilitation process. Consumer organizations have been strong advocates for increased funding and for improved quality of services and outspoken proponents of categorical and specialized services for the blind. They can also be highly

influential in educating elected public officials on the local and national level about the special rehabilitation needs of the blind and of the important benefits to the greater society for investing in the public rehabilitation program.

Peer Mentoring

Consumer organizations also serve as a valuable resource for providing a vast pool of role models and peer mentors from whom the VR agency must draw in order to further enhance the rehabilitation experience of blind individuals. Role models and peer mentors are a vital part of an individual's growth experience in the rehabilitation process. Constant exposure of the blind O&M consumer to experienced blind cane travelers is essential and has a tremendously enriching and positive reinforcing effect on the learning experience of the blind student. The experienced blind cane traveler is a great source of inspiration, support, and encouragement for the novice cane traveler and can offer opportunities for beginning travelers to experience practical real-life situations, can present challenges that can further stretch the individual's personal expectations toward independent cane travel, and increase the individual's confidence level.

Empowerment

The major barrier to the employment and independence of blind consumers and other individuals with disabilities arises from the low expectations held by society, state rehabilitation agencies, other service providers, and blind consumers themselves. Blind people and other people with disabilities are capable of making informed choices about their own lives, including employment options, the types of services they need, and the selection of service providers. Information about key partners in the field of O&M can, therefore, be extremely important in empowering a blind consumer with the necessary information to make informed choices with regard to the selection of available O&M services. Blind consumers are capable of assuming responsibility for their decisions and should be treated accordingly.

Transition from School to Work

The relationship between special education and vocational rehabilitation is longstanding and in many states has led to the development of organized systems to assist in the seamless transition of special education students from school to adult employment services. Over the years, specific requirements have been added to the acts governing special education and rehabilitation to ensure effective transition planning.

RSA data for FY 1999 statistical reports revealed that 176,455 individuals received post-secondary education, and \$274,146,765 was spent on post-secondary education. While graduation rates for transition age youth with disabilities has increased nationally to 64%, it continues to lag significantly behind the graduation rate for non-disabled students (Johnson, 2000). In addition, youth with disabilities are less likely to go on to higher education than students without disabilities. Only 17% receive post-secondary education as compared to 68% of the national population. The number of students with disabilities who complete college is

essentially unknown (Johnson, 2000). According to the 2000 Harris Survey, only 12% of people with disabilities graduated from college, compared with 23% of non-disabled adults. The Department of Education also estimates that only one-third of young people with disabilities receive needed job training and assistance. These data support the urgent need to strengthen planning and services to facilitate transition from school to work.

Key Requirements Related to Transition under the Individuals with Disabilities Education Act

Since many rehabilitation consumers received special education services while in school, requirements aimed at facilitating a smooth transition from school to work are included in both the Rehabilitation Act and the Individuals with Disabilities Education Act (IDEA). While both acts place certain responsibilities on each system—special education and rehabilitation—the overarching policy intent is to insure that planning for adult life begins prior to the student leaving school.

IDEA includes specific transition-related planning provisions. However, IDEA makes a distinction between a statement of *transition service needs*, beginning no later than age 14, and a statement of *needed transition services*, which must begin by age 16.

Much confusion exists concerning the requirements applicable to students age 14 and those applicable to students age 16, because the wording in the two requirements is so similar. For a comprehensive description of the differences between transition service needs and needed transition services, the reader should be referred to Storms, O’Leary, and Williams’ (2002) *Transition Requirements: A Guide for State, Districts, Schools, Universities, and Families*.

Transition service needs are identified through the educational planning process. In developing a student’s Individualized Education Plan (IEP) starting at age 14 (or younger, when appropriate), the IEP team must invite students to participate in developing their plans. This requirement continues until the students exit special education. In developing the IEP, the team must base the plan on the students’ needs, taking into account the students’ preferences and interests. Planning is not limited to services needed by students while they are in school but may include developing post-school goals. And, finally, the team must include a statement identifying the students’ transition service needs.

Transition service needs typically consist of courses of study or a multi-year description of coursework to achieve the students’ post-school goals. The intent is to assist the students in achieving their post-high-school goals by selecting courses that are pertinent to their future and will motivate them to finish school. The students’ transition service needs must be reviewed annually until the students graduate with regular high school diplomas or are no longer eligible for special education services.

At age 16, additional transition requirements apply but include all of the planning requirements applicable at age 14. As required at age 14, at age 16 (or younger, when appropriate) the IEP team must invite the student to participate in his or her IEP development. The IEP must be based on the student’s needs, taking into account the student’s preferences and interests and may

include refining the student's desired post-school goals. The team must review the student's transition service needs, such as the courses of study or multi-year description of coursework, adjusting them as needed to achieve the student's desired post-school goals. However, at age 16, the team is also required to develop a statement of needed transition services.

A statement of needed transition services has been required since 1990. Transition services include "instruction, related services, community experiences, the development of employment and other post-school adult living objectives; and if appropriate, acquisition of daily living skills and functional vocational evaluation" (IDEA, 34 CFR 300.29[a][3]). In addition, the statement of needed transition services must include a statement of the interagency responsibilities or any needed linkages (IDEA, 300.347[b][2]).

The requirement for the consideration of *related services*¹ in the statement of needed transition services is particularly important for blind and visually impaired special education students. Related services (added in the 1997 IDEA Final Regulations) include, among other things, orientation and mobility services.

Parent involvement in the IEP planning process is specifically required by IDEA. The amendments of 1997 strengthen the importance of parent involvement and require documentation of parent notification and attempts at gathering information from parents before an IEP is developed to address transition. Families may invite an advocate from an advocacy organization to assist them with interpreting information and to provide other support and guidance.

Schools are required to notify parents that the purpose of the IEP meeting will be to consider transition planning and identify needed services for their son or daughter. The notification must also include a list of any other agencies that will be invited to send a representative.

IDEA requires that the school invite a representative of any other agency that is likely to be responsible for providing or paying for transition services. Some of the possible agencies may include vocational rehabilitation, employment and training, mental health, mental retardation/developmental disabilities, social security, housing, recreation, and other agencies relevant to the individual's needs and preferences.

If the agency fails to provide the transition services described in the IEP, the school must reconvene the IEP team to identify alternative strategies to meet those objectives. This does not relieve any participating agency, including a state vocational rehabilitation agency, of the responsibility to provide or pay for transition services that it would otherwise provide to students with disabilities who meet its eligibility criteria. The financial responsibility for meeting a student's transition goals does not apply solely to the education system but also to the agencies that the IEP team involves in meeting the transition objectives described in the IEP.

Key Requirements Related to Transition under the Rehabilitation Act

Definition

The term *transition services* means a coordinated set of activities for a student, designed within an outcome-oriented process that promotes movement from school to post-school activities, including post-secondary education, vocational training, integrated employment (including supported employment), continuing and adult education, adult services, independent living, or community participation. The coordinated set of activities shall be based upon the individual student's needs, taking into account the student's preferences and interests, and shall include instruction, community experiences, the development of employment and other post-school adult living objectives, and, when appropriate, acquisition of daily living skills and functional vocational evaluation (Section 7[37] of the Act).

Coordination with Education Officials

“The State plan shall contain plans, policies, and procedures for coordination between the designated State agency and education officials responsible for the public education of students with disabilities that are designed to facilitate the transition of the students with disabilities from the receipt of educational services in school to the receipt of vocational rehabilitation services under this title, including information on a formal interagency agreement with the State educational agency that, at a minimum, provides for:

- (i) consultation and technical assistance to assist educational agencies in planning for the transition of students with disabilities from school to post-school activities, including vocational rehabilitation services;
- (ii) transition planning by personnel of the designated State agency and educational agency personnel of the designated State agency and educational agency personnel for students with disabilities that facilitates the development and completion of their individualized education programs under section 614(d) of the Individuals with Disabilities Education;
- (iii) the roles and responsibilities, including financial responsibilities, of each agency, including provisions for determining State lead agencies and qualified personnel responsible for transition services; and
- (iv) procedures for outreach to and identification of students with disabilities who need the transition services.” (Section 101[a][11][D] of the Act)

Vocational Rehabilitation Services for Individuals

“Transition services for students with disabilities, that facilitate the achievement of the employment outcome identified in the individualized plan for employment” (Section 103[a][15] of the Act).

Services to Groups

“Consultative and technical assistance services to assist educational agencies in planning for the transition of students with disabilities for school to post-school activities, including employment” (Section 103[b][6] of the Act).

State Rehabilitation Council

“At least one representative of the State educational agency responsible for the public education of students with disabilities who are eligible to receive services under this title and part B of the Individuals with Disabilities Education Act” (Section 105[b][1][A][x] of the Act).

Cooperation with Agencies Responsible for Students with Disabilities

“The IPE for a student determined eligible for vocational rehabilitation services must be developed and approved before the student leaves the school setting” (34 CFR 361.22[a]).

“When conducting the statutorily-required outreach to students with disabilities, it is essential for the designated State agency to inform these students of the purpose of the VR program, the application procedures, the eligibility requirements, and the potential scope of services that may be available” (34 CFR 361.22[b][4]).

“The State plan must assure that the IPE for a student with a disability who is receiving special education services is coordinated with individualized education program (IEP) for that individual in terms of the goals, objectives, and services identified in the IEP” (34 CFR 361.46[d]).

Summary

The orientation and mobility profession has suffered ongoing shortages throughout its relatively brief history. Accordingly, state rehabilitation agencies have and continue to struggle to offer consistent, high-quality O&M services. The number of university programs produces only a small number of the trained professionals needed to meet the demand for O&M training. Consequently, state rehabilitation agencies have used a combination of university- and agency-trained personnel to provide O&M services. The Act gives state agencies a great deal of flexibility in developing approaches to address the need for qualified personnel. It is clear that in an ideal world, uniform training of personnel would help ensure consistency in the quality of training available throughout the nation; nevertheless, agencies are faced with the very real problem of trying to meet increasing service needs with insufficient numbers of trained staff. For this reason, the importance of strengthened and innovative partnerships is greater than ever. To meet the needs of blind consumers, agencies need to work with consumers (particularly consumer organizations) to develop agreed-upon methods, consistent with the beliefs, values, and philosophy of blind consumers and service providers in the state.

Recommendations

- The primary role of VR agencies and other RSA-funded entities is to empower individuals with disabilities by providing the information, skills training, education, confidence, and support services that individuals need to make informed choices about their professional and personal lives. It is the blind consumer's responsibility to educate themselves about the various services that they are entitled to (the various service providers available in their community) and, based upon this information, determine which services will enable them to reach their maximum potential for success.
- It is important that rehabilitation agencies be committed to employing a significant number of O&M instructors to ensure that every blind consumer is provided orientation and mobility services in a timely manner. Rehabilitation agencies should (a) have clear written policy and procedures for the provision of O&M services in their mission statement; (b) be consumer-friendly; (c) recruit, employ, and retain qualified O&M instructors (including blind individuals); (d) employ instructors who are trained to work with consumers from various cultures and respect cultural differences; (e) ensure the provision of continuous professional development for O&M staff (staff need to remain current on new trends and advances in the field of blindness); (f) consider the cross-training of staff; (g) employ instructors trained in blindness; and (h) develop external and internal program evaluations. Services are better delivered within a framework of accountability, efficiency, and with the least administrative burden.
- University programs preparing professional O&M instructors should (a) have clearly written standards addressing the competencies of qualified orientation and mobility instructors; (b) actively recruit blind and minority faculty and students into their programs; (c) include in its curriculum the cultural, emotional, and attitudinal factors affecting adjustments to blindness; (d) ensure that admittance to their programs is nondiscriminatory (including equal opportunity for blind applicants and minorities); (e) recruit, employ, and retain qualified staff trained in the field of blindness; (f) ensure the provision of continuous professional development of staff; (g) develop collaborative, cross-training curriculum to prepare other rehabilitation personnel to provide O&M services; (h) use Web-based training for professionals and paraprofessionals; (i) incorporate approved national standards from the Academy for Certification of Vision Rehabilitation and Education Professionals (ACVREP) and the National Blindness Professional Certification Board (NBPCB); (j) develop external and internal program evaluations; and (k) ensure that graduates are prepared to train consumers to lead normal, independent, competitive, and successful lives.
- Consumer organizations, such as the American Council of the Blind and the National Federation of the Blind, are valuable partners in the rehabilitation process and can serve as strong allies to the VR system in promoting issues that affect the lives of blind consumers. All professionals who work in the field of blindness should become familiar with consumer organizations of the blind, as well as attend local, state, and national meetings of these organizations.

- The most effective VR, Independent Living Training, university programs, and other programs result from a strong alliance between individuals with disabilities, grantee agencies, service providers, and consumer organizations. These alliances encourage accountability through systematic and ongoing assessments of grantees' policies, programs, and practices.

Footnote

¹Orientation and Mobility as a Related Services
Individuals with Disabilities Education Act 105-17
1997 Regulations, 34 CFR Part 300, Part B, Subpart A

(a) General. As used in this part, the term related services means transportation and such developmental, corrective, and other supportive services as are required to assist a child with a disability to benefit from special education, and includes speech-language pathology and audiology services, psychological services, physical and occupational therapy, recreation, including therapeutic recreation, early identification and assessment of disabilities in children, counseling services, including rehabilitation counseling, orientation and mobility services, and medical services for diagnostic or evaluation purposes. The term also includes school health services, social work services in schools, and parent counseling and training.

(b) Individual terms defined. The terms used in this definition are defined as follows:

(6) Orientation and mobility services

(i) Means services provided to blind or visually impaired students by qualified personnel to enable those students to attain systematic orientation to and safe movement within their environments in school, home, and community; and

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

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

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

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

(D) Other concepts, techniques, and tools.

References

- Asenjo, J. A. (1975). *Rehabilitation teaching for the blind and visually impaired the state of the art, 1975*. Final report of the National Workshop on Rehabilitation Teachers. New York: American Foundation for the Blind.
- Blasch, B., Wiener, W., & Welsh, R. (1997). *Foundation of Orientation and Mobility* (2nd ed.). New York: AFB Press.
- Cavanaugh, S. B. (1999). *Effects of agency structure and client characteristics on rehabilitation services and outcomes for consumers who are blind*.
- Johnson, D. (2000). *School-to-work for youth with disabilities: State and community policies to serve all youth: A forum brief*. Minneapolis, MN: National Center on Secondary Education and Transition. Retrieved September 15, 2000, from <http://64.226.111.21/forumbriefs/2000/fb120100.htm>.
- La Grow, S. J. (1992). *The rehabilitation of visually impaired people*. Auckland: Royal New Zealand Foundation for the Blind.
- P.L. 105-17 (1997). *Individuals with Disabilities Education Act Amendments of 1997 (IDEA)*.
- P.L. 105-220 (1998). *Workforce Investment Act of 1998. Title IV: Rehabilitation Act Amendments of 1998 (Section 101)*. State plans.
- Storms, J., O'Leary, E., & Williams, J. (2000). *Transition requirements: A guide for states, districts, schools, universities and families*. Minneapolis, MN: University of Minnesota, Institute on Community Integration.
- University of Minnesota Extension Services (1999). *Keys to quality youth development*. Retrieved July 10, 2003, from <http://interact.uoregon.edu/wrrc/trnfiles/trncontents.htm>.
- Voorhees, A. (1962). Professional trends in mobility training. *New Outlook for the Blind*, 56(1), 3-9.
- Webster's New World Dictionary* (2002). Weston, FL: Paradise Press Inc.
- Wilson, J. (2001). *Principles of the Rehabilitation Services Administration*. Rehabilitation Services Administration, Policy Directive RSA-PD-01-03. Implementation of Informed Choice.

Study Questions

1. The principle of “informed choice” in the Amendments of the Rehabilitation Act was first introduced in:

- a. 1992
- b. 1996
- c. 1998

2. The Individuals with Disabilities Education Act (IDEA) specifies that “transition services needed” begin no later than age:

- a. 14
- b. 15
- c. 16

3. The Individuals with Disabilities Education Act (IDEA) regulations addressed the needs of related services, which included the provision of orientation and mobility services for the blind in:

- a. 1990
- b. 1992
- c. 1997

3. The major barrier to employment and independence of blind consumers is the:

- a. lack of orientation and mobility skills.
- b. poor economy and job market.
- c. low expectations held by society, service providers, and the blind consumer.

4. The identification of the orientation and mobility specialist in the area of rehabilitation personnel occurred:

- a. by the passage of the Bardón-LaFollette Act of 1943.
- b. in June 1958 in the U.S. Office of Vocational Rehabilitation.
- c. at a National Conference hosted by the American Foundation of the Blind.

5. A partnership is a relationship between:

- a. two or more parties, with one partner selected as the head of the partnership.
- b. two or more parties, with each partner having equal status and independence.
- c. two or more parties, with each partner independently functioning but working towards a common goal.

Appendix A

Glossary of Terms

Actuarial Evidence: Statistical data that directly supports a postulation or assumption. This term is generally associated with insurance coverage, because actuarial evidence is necessary to support an insurance company's charging an increased premium to a specific class of persons.

Age-appropriate: Concept that serves as a benchmark for assessing skill levels, introducing concepts, and establishing reasonable expectations. For example, if a sighted six-year-old child is expected to independently walk from the school bus to the classroom, it is considered *age-appropriate* for a blind student to demonstrate this same ability.

Automaticity: A behavior, or set of behaviors, that is conditioned to the degree that the necessary skills or knowledge to successfully conduct them are accessed without the need for conscious processing.

Behavioral Learning Theory: An approach to learning focusing on behavior modification through the provision of information and closely guided instruction. The theory of behaviorism concentrates on the study of overt behaviors that can be observed and measured. Behaviorism labeled as a teaching approach is often referred to as directed instruction. This learning style uses stimulus and response, shaping and chaining, positive reinforcement, and continuous observation to convey the lessons to be learned and to ensure that learning has actually taken place.¹

Built Environment: Any area in which the hand of humanity is present. In other words, a protected wilderness is not considered to be part of the built environment. Towns, cities, suburban neighborhoods, and even National Park lands fall into this category.

Cognitive Learning Theory: An approach to learning, springing from the field of Cognitive Psychology, in which the underlying thought process and active involvement of the learner comprise the critical elements in acquiring knowledge. This learning style uses self-analysis, personal assessment of readily available information, information processing, problem solving, and frequent observation to convey the lessons to be learned and to ensure that learning has actually taken place.

Cognitive Paradigm: A belief system that views human beings as having the ability to learn highly effective adaptive approaches for management of the environment, through appropriate environmental information-gathering techniques and effective problem solving, regardless of the sensory systems through which they gather the relevant information in order to do so. In this paradigm, vision is given no greater value than any other sensory modality, and blindness is viewed as simply one of the many characteristics that are a part of an individual's overall makeup.

Declarative Memory: Those memory structures responsible for the storage of knowledge that is based upon propositions, imagery, and strings. Propositions are the smallest units of language that hold meaning. Imagery is not simply visually grounded but includes all forms of sensory experiences. Strings are the memories for the sequence of familiar events and social interactions. Often, this information is in the form of explicit knowledge.

Empower: To give legal or moral power; to authorize.

Explicit Knowledge: Knowledge that is specific, factual, detailed, easily verbalized, recallable, language- or image-based, dynamic, and able to be manipulated. Usually associated with declarative memory. There is a continuum between explicit and implicit knowledge, and the majority of human experiences involves a blend of both forms of knowledge.

Extrinsic Feedback: Information and analysis that is received from an outside source. It can include direct feedback from an instructor, messages shouted at a traveler by passers-by, or the circumstances and reactions that surround the traveler at any given time. Intentional extrinsic feedback is often utilized, when the fundamentals of a skill are being introduced; and, in this application, it is equated with guidance.

Guided Learning: The provision of instruction through direct explanations, demonstrations, rote memorization, and other forms of extensive instructor involvement.

Human Guide: Also commonly known as *Sighted Guide*, this is a technique that allows a blind person to walk with another person by maintaining physical contact, by gripping the guide's arm just above the elbow.

Immersion Experience in Blindness: An extended period of time spent relying exclusively on the alternative skills of blindness. This time is spent under sleepshades for those who are sighted or who have significant residual vision. The experience includes instruction in non-visual techniques and enables the participant to incorporate these skills into the daily routines of life and work. The *Immersion Experience* is designed to instill an ultimate belief in the effectiveness, efficiency, and value of alternative skills and their potential to positively impact the lives of those who learn them.

Implicit Knowledge: Knowledge that is general, recognition-based, and difficult to verbalize. It is procedural and consists of complex rules and belief systems, and automatic behaviors. There is a continuum between explicit and implicit knowledge, and the majority of human experiences involves a blend of both forms of knowledge.

Inherently Dangerous Activity: Any activity that is likely to result in harm to the individual who engages in it and for which actuarial evidence exists to demonstrate that participants in the activity have, in fact, suffered harm. For example, skydiving, tight-rope walking, and acting as a stunt person are considered to be inherently dangerous activities.

Informed Choice: Introduced in the 1992 Amendments to the Rehabilitation Act of 1973, *informed choice* requires active involvement by both customer and rehabilitation professional in

the Vocational Rehabilitation process. Customers have the responsibility to actively choose the particular goal or goals that they will pursue and will play an active role in selecting the institutions, organizations, facilities, and entities from which they will obtain the education and training necessary in the pursuit of those goals. The Rehabilitation Professional is responsible for assisting the customer in gaining thorough and accurate information about a suitable variety of appropriate institutions, organizations, facilities, and entities from which the customer can choose. As with all Vocational Rehabilitation services, the availability of financial resources plays a role in informed choice.

Intrinsic Feedback: Feedback naturally received from producing a movement. Intrinsic feedback occurs inside the student's mind and stems from the perception of personal experience. For example, if a grass line is encountered, the student may confirm that a driveway has been crossed. When using an internal error-detection mechanism, the student will form conclusions without assistance. (Cited in Mettler R. [1995]. *An application of cognitive learning theory to cane travel instruction*. Lincoln, NE: Nebraska Department of Public Institutions, Division of Rehabilitation Services for the Visually Impaired.)

Long Cane Design: A cane generally made of light-weight fiberglass or carbon fiber, which is significantly longer than the once standard, sternum-length aluminum cane. Often, this cane is straight or rigid rather than folding and, when stood vertically before the user, is approximately 8 inches shorter than the user, reaching to between the chin and nose.

Meta-Cognitive: Commonly defined as “thinking about thinking,” “knowing about knowing,” and *learning about learning*. Metacognition involves knowledge and control of self in addition to knowledge and control of process. Successful students are aware of, monitor, and control their learning. Central to this knowledge of self and self-regulation are commitment, attitudes, and attention.

Occluders: A term used in reference to the blindfold.

Open Palm Technique: A manner of holding the cane, usually used with the longer cane design, involving a more relaxed grip and the forearm held close to the body. The cane handle rests on the palm, and cane manipulation is accomplished through flexing of the fingers while the wrist remains stationary.

Partner: A relationship, frequently between two parties, in which each has equal status and certain independence but also implicit or formal obligations to the other.

Pencil Grip: A technique for holding the cane. The user grasps the cane just below the handle, in a manner similar to a pencil, and in a more vertical position. This technique keeps the tip of the cane closer to the traveler's feet and is well suited to travel in congested areas or when walking with a group. The *pencil grip* also minimizes the risk of tripping others and provides greater upper body protection when employed in conjunction with the longer cane design.

Procedural Memory: Memory structures that hold information for complex physical behavior and conditioned responses, complex environmental concepts, and cognitive processes.

Rehabilitation Teacher: A professional who provides instruction to individuals who are blind or visually impaired. The Rehabilitation Teacher may teach individuals in their homes or in a residential training environment. Both one-on-one and group instruction may be provided by this professional. Subject areas include, but are not limited to, Braille, cooking, home management, home repair and maintenance, sewing and needle work, access technology and communication skills, and personal management (encompassing everything from grooming and hygiene to check-writing and mail-handling).

Rote Travel: Following a specific route which travelers have memorized because they have limited understanding of environmental, spatial and mapping concepts, problem solving, reasoning, and decision making cognitive skills. Individuals who are rote travelers are usually developmentally delayed or have neurological impairments.

Route Travel: Travel method whereas the blind person determines and travels routes and alternate routes, in familiar and unfamiliar areas, using knowledge of environmental, spatial and mapping concepts, along with problem solving, reasoning, and decision-making cognitive skills.

Scaffolding: The involvement of the instructor in assisting the learner in developing a particular skill or obtaining task-related knowledge that is sufficient to allow the individual to perform the task. It is then withdrawn as soon as the learner has developed the minimum skills to perform the task independently.

Self-Efficacy: In Bandura's original presentation, he defined self-efficacy expectations as beliefs about an individual's own ability to successfully perform a given task or behavior. Self-efficacy expectations are hypothesized by Bandura (1977, 1982, 1986) to be the primary mediators of behavior and behavioral change, determining whether a given behavior will be initiated, how much effort will be expended, and how long the behavior will be maintained in the face of challenging circumstances. (Cited in Luzzo, D. A. [1996]. A psychometric evaluation of the career decision-making self efficacy scale. *Journal of Counseling & Development*, 74[3], 276-280.)

Sleepshades: A term used in reference to the blindfold.

Standard Grip: A manner of holding the cane, usually used with the sternum-length cane and a slightly extended forearm. The index finger is extended along the side of the cane handle, while cane manipulation is accomplished by flexing the wrist.

Sternum-Length Cane: A cane that, when stood vertically before the user, reaches a height of approximately 5 centimeters above the base of the sternum. This cane may be rigid or folding and is generally made of aluminum or slightly heavier composite materials.

Vision Paradigm: A belief system that views blindness as a significant deficit; since, in this approach, vision is considered to be a vitally important source of environmental information or means of self-management in the environment. Proponents of the Structured Discovery model assert that this is the belief system held by the majority of human beings in regard to blindness and that this same belief system underpins the conventional model.

Zone of Proximal Development: The space between the level of skill development where the individual has mastery over the required skills, or the necessary level of maturity to easily perform a given task, and the point at which the task or environmental demands would overwhelm the individual's skills and knowledge. It is within this zone that learning occurs, since nothing new can be gained through the repetition of existing skills, and placing learners in a circumstance that overwhelms their existing skills and knowledge will only produce frustration without benefit.

Footnote

¹Behavioral Learning Theory: There are four types of behaviorist learning theories.

1. *Contiguity*—any stimulus and response connected in time and/or space;
2. *Classical (Respondent) Conditioning*—association of stimuli (an antecedent stimulus will reflexively elicit an innate emotional or physiological response; another stimulus will elicit an orienting response);
3. *Operant (Instrumental) Conditioning*—connection of emitted behavior and its consequences (reinforcement and punishment); and
4. *Observational (Social) Learning*—learning through observing and modeling is sometimes considered a behavioral learning theory.

Appendix B

Orientation and Mobility Academic Competencies of the Conventional Method

A#	MEDICAL ASPECTS OF BLINDNESS AND VISUAL IMPAIRMENT
A-1	The candidate has demonstrated knowledge and understanding of the visual system and how it works.
A-2	The candidate has demonstrated knowledge and understanding of the etiology of visual impairments and the effects of these impairments on visual functioning.
A-3	The candidate has demonstrated knowledge and understanding of the roles and functions of low vision clinics.
A-4	The candidate has demonstrated knowledge of the resources for low vision devices and care.
A-5	The candidate has demonstrated a basic knowledge and understanding of hearing impairments and the impact of hearing impairments on auditory functioning and communication.
A-6	The candidate has demonstrated basic knowledge and understanding of the following health conditions and disabilities: alcoholism and substance abuse, AIDS, deafness, stroke or cerebral vascular accidents, traumatic brain injury, mental retardation, cerebral palsy, amputations, epilepsy, diabetes mellitus, spinal cord injury, pulmonary dysfunction, multiple sclerosis, cardiovascular disease, rheumatic disease, and mental illness.
A-7	The candidate has demonstrated a knowledge of the roles of the professionals involved in the health care and rehabilitation of persons with the conditions in A-2, A-5, and A-6.
B#	SENSORY MOTOR FUNCTIONING
B-1	The candidate has demonstrated knowledge and understanding of the basic development, anatomy, physiology, perceptual processes, and training of each sensory system (visual, auditory, vestibular, kinesthetic, touch, olfactory, proprioceptive) and the interrelationships of these systems.
B-2	The candidate has demonstrated knowledge and understanding of the common pathologies associated with each sensory system and the implications for orientation and mobility.
B-3	The candidate has demonstrated knowledge and understanding of perception as it pertains to cognition, sensation, attention, memory, cognitive mapping, orientation, and the utilization of information conveyed through sensory stimulation.
B-4	The candidate has demonstrated knowledge and understanding of the manner in which sensory information affects safety and access in travel environments.
B-5	The candidate has demonstrated knowledge and understanding of sound measurement, classifying and quantifying hearing loss, the special auditory needs of persons with visual impairments, the use of hearing aids by persons with visual impairments, auditory training programs, and the uses of audiometric data for traffic interpretation.
B-6	The candidate has demonstrated knowledge and understanding of the rudimentary practices used for screening of hearing function, including the use of hearing questionnaires and localization tests.

B-7	The candidate has demonstrated knowledge and understanding of the mechanics of human locomotion and the psychomotor factors influencing mobility, such as sensory awareness, integration of reflexes, muscle tone, and coordination, as well as problems with balance, posture, gait, endurance, strength, flexibility, agility, and coordination.
B-8	The candidate has demonstrated knowledge and understanding of the principles of non-visual locomotion, including movement theories, theories of spatial orientation, veering and its remediation.
C#	PSYCHO-SOCIAL ASPECTS OF BLINDNESS AND VISUAL IMPAIRMENTS
C-1	The candidate has demonstrated a basic beginning knowledge and understanding of the different counseling theories, such as psychodynamic, person centered, gestalt, cognitive, rational emotive, behavioral, and reality therapy.
C-2	The candidate has demonstrated knowledge and understanding of the psycho-social consequences of congenital and adventitious blindness.
C-3	The candidate has demonstrated knowledge and understanding of the adjustment process that may accompany visual impairment and concomitant disabilities.
C-4	The candidate has demonstrated knowledge and understanding about the impact of vision loss on the family and the strategies available to include family members, caregivers, and support systems as encouragers of independence.
C-5	The candidate has demonstrated knowledge and understanding of the impact that motivation, fear, anxiety, self-concept, self-efficacy, and social interactions have on the educational and rehabilitative processes.
C-6	The candidate has demonstrated knowledge and understanding of the importance of establishing appropriate interaction skills and rapport with students and their families or significant others.
C-7	The candidate has demonstrated knowledge and understanding of the importance of counseling students about setting mobility goals, choosing a mobility system, and other topics related to the use of mobility skills for daily living.
C-8	The candidate has demonstrated knowledge of the resources that are available to assist students in dealing with psycho-social problems that affect O&M learning or performance.
C-9	The candidate has demonstrated knowledge and understanding of the impact on learners of socio-cultural factors, including social class identification, ethnic/racial background, and cultural group attitudes towards blindness.
C-10	The candidate has demonstrated knowledge and understanding of society's attitudes towards blindness and visual impairments and the methods for effecting attitude change that can be utilized by both the instructor and the student.
C-11	The candidate has demonstrated knowledge and understanding of the importance of discussing and analyzing the feelings and reactions they may have in response to working with persons with visual impairments and persons with multiple disabilities.
C-12	The candidate has demonstrated knowledge and understanding of the available coping strategies and community resources that may be used by the student and the instructor for resolving issues related to physical losses, trauma, and death.
D#	HUMAN GROWTH AND DEVELOPMENT OVER THE LIFESPAN
D-1	The candidate has demonstrated knowledge and understanding of the principles of child development.
D-2	The candidate has demonstrated knowledge and understanding of the typical and atypical sensorimotor development patterns of children and youth who are blind or visually impaired.

D-3	The candidate has demonstrated knowledge and understanding of the effects of visual impairments on affective, psychomotor, and cognitive development and processes.
D-4	The candidate has demonstrated knowledge and understanding of how the developmental patterns of children with visual impairments affect the acquisition and performance of O&M skills and techniques.
D-5	The candidate has demonstrated knowledge and understanding of the aging process.
D-6	The candidate has demonstrated knowledge and understanding of how the aging process affects the acquisition and performance of O&M skills and techniques.
D-7	The candidate has demonstrated knowledge and understanding of the manner in which students' attitudes toward O&M instruction may change over the lifespan.
D-8	The candidate has demonstrated knowledge and understanding of the strategies and methods that are used to teach O&M to students of all ages.
D-9	The candidate has demonstrated knowledge and understanding of effective ways to convey information regarding the implications of the developmental patterns associated with blindness and visual impairments over the lifespan to students and their families, other professionals, and individuals in the community.
E#	CONCEPT DEVELOPMENT
E-1	The candidate has demonstrated knowledge and understanding of the role that body image, spatial, temporal, positional, directional, and environmental concepts play in moving purposefully in the environment.
E-2	The candidate has demonstrated knowledge and understanding of the effects of visual impairment and blindness on concept development and the manner in which persons who are blind or visually impaired acquire and utilize conceptual information.
E-3	The candidate has demonstrated knowledge and understanding of the manner in which individuals who are blind or visually impaired acquire and use body image, spatial, temporal, positional, directional, and environmental concepts.
E-4	The candidate has demonstrated knowledge and understanding of the published lists of concepts that are related to O&M.
E-5	The candidate has demonstrated knowledge and understanding of the manner in which concept development is incorporated in conducting O&M assessments, designing and implementing O&M programs, and evaluating students' progress.
E-6	The candidate has demonstrated knowledge and understanding of the manner in which mental retardation and other concomitant disabilities affect the acquisition and utilization of concepts by students who are blind or visually impaired.
E-7	The candidate has demonstrated knowledge and understanding of the methods and strategies used to adapt concept development instruction for students with mental retardation and other concomitant disabilities.
E-8	The candidate has demonstrated knowledge and understanding of the value of communicating information about the relationship between concept development, visual impairment, and O&M to students' families and significant others and to other professionals involved in the students' special education or rehabilitation program.
F#	MULTIPLE DISABILITIES
F-1	The candidate has demonstrated knowledge and understanding of the effects of additional impairments, including sensory, sensorimotor and physical impairments, mobility impairments not related to blindness, mental retardation, learning disabilities, diabetes, organic brain damage, and challenging behaviors, on the orientation process and mobility.

F-2	The candidate has demonstrated knowledge and understanding about the effects of deaf-blindness on communication, orientation, and mobility.
F-3	The candidate has demonstrated knowledge and understanding of the environmental demands that affect the mobility of visually impaired students with physical and sensorimotor impairments as well as the factors to consider when evaluating these students' travel environments.
F-4	The candidate has demonstrated knowledge and understanding of the unique assessment and instructional needs of learners with multiple impairments and learners who are deaf-blind.
F-5	The candidate has demonstrated knowledge and understanding of the multidisciplinary, interdisciplinary, and transdisciplinary approach to instruction for students with multiple impairments and students who are deaf-blind.
F-6	The candidate has demonstrated knowledge and understanding of the instructional strategies and methods used, including the use of specialized communication systems, modes, devices and adapted mobility systems and devices, for teaching students with multiple impairments and students who are deaf-blind.
G#	SYSTEMS OF ORIENTATION AND MOBILITY
G-1	The candidate has demonstrated knowledge and understanding of the use of the long cane as a mobility system.
G-2	The candidate has demonstrated knowledge and understanding of the different types of long canes, adapted canes, and adaptive mobility devices, and their strengths and limitations as travel tools considering individual travel needs and travel environments.
G-3	The candidate has demonstrated knowledge and understanding of the techniques used to prescribe canes, adapted canes, and adaptive mobility devices.
G-4	The candidate has demonstrated knowledge and understanding of the construction, assembly, and maintenance of the long cane and adaptive mobility devices, knows the nomenclature of the cane and its parts, is aware of resources for procuring long canes and other devices, and has demonstrated proficiency in maintaining and repairing canes and adaptive mobility devices.
G-5	The candidate has demonstrated knowledge and understanding of the dog guide as a mobility system, the methods and strategies for providing orientation assistance to a dog guide user, and knows the process for making referrals to dog guide training centers.
G-6	The candidate has demonstrated knowledge and understanding of electronic travel aids (ETAs) and their uses and applications as a supplementary mobility system, knows how ETAs are classified, and is knowledgeable about the basic principles of operating commercially available ETAs.
G-7	The candidate has demonstrated knowledge and understanding of optical and non-optical devices and their uses and applications as a supplementary mobility system; knows and understands how optical and non-optical devices are classified, their basic principles of operation, and the various ways persons with visual impairments can use these devices in travel environments.
G-8	The candidate has acquired knowledge and understanding regarding the use of ambulatory aids, such as support canes, walkers, crutches, and wheelchairs and the manner in which these devices are used by persons who are blind or visually impaired.
G-9	The candidate has demonstrated knowledge and understanding of the relative advantages and disadvantages of the mobility systems, including the long cane, optical and non-optical devices, ETAs, and the human guide for a range of persons with blindness and visual impairments, and can communicate this information effectively to students and their families.

H#	ORIENTATION AND MOBILITY SKILLS AND TECHNIQUES
H-1	The candidate has demonstrated knowledge and understanding of the human guide techniques and their applications, including: position and grip, transferring sides, narrow passageways, accepting or refusing assistance, doorways, stairways, and seating.
H-2	The candidate has demonstrated knowledge and understanding of basic skills and their applications, including: upper hand and forearm, lower hand and forearm, and trailing techniques, squaring-off, taking direction, and locating dropped objects.
H-3	The candidate has demonstrated knowledge and understanding of the cane techniques and their applications in indoor and outdoor environments, including diagonal cane and touch technique, touch technique modifications, including three point touch, touch and slide, touch and drag, constant contact technique, and the use of the cane for shore-lining.
H-4	The candidate has demonstrated knowledge and understanding of the techniques for using adaptive mobility devices for children and adults in indoor and outdoor environments.
H-5	The candidate has demonstrated knowledge and understanding of the methods used to handle the long cane, including: cane grip, placement, and manipulation; utilizing the cane to contact and examine objects, and handling the cane when switching from one side of a human guide to another side.
H-6	The student has demonstrated knowledge and understanding of techniques used for familiarization to indoor and outdoor environments, including the use of landmarks, clues and cues, search patterns, and numbering systems.
H-7	The candidate has demonstrated knowledge and understanding of the techniques used for soliciting assistance and declining assistance, when necessary.
H-8	The candidate has demonstrated knowledge and understanding of orientation and travel skills, including route planning, direction taking, distance measurements and estimations, utilization of compass directions, recovery techniques, analysis and identification of intersections and traffic patterns, use of traffic control devices, techniques for crossing streets, techniques for travel in indoor environments, outdoor residential, small business and business districts, mall travel, and travel in rural areas.
H-9	The candidate has demonstrated knowledge and understanding of the O&M skills and techniques used for travel on public and private transportation.
H-10	The candidate has demonstrated knowledge and understanding of the O&M skills and techniques used to negotiate public conveyor systems, including elevators, escalators, people movers, and revolving doors.
H-11	The candidate has demonstrated knowledge and understanding of modifications to O&M skills and techniques that are appropriate for students with unique individual needs.
I#	INSTRUCTIONAL METHODS, STRATEGIES, AND ASSESSMENT
I-1	The candidate has demonstrated knowledge and understanding of the basic principles of learning theory, including: classical conditioning, operant conditioning, cognitive theory, memory and information processing, guided and discovery learning, and the manner in which these theories relate to O&M instruction.
I-2	The candidate has demonstrated knowledge and understanding of the media and materials that are used to support O&M instruction, (e.g., visual, tactile, and auditory maps and models, graphic aids, and tape recorded information), proficiency in designing and producing instructional materials, and knowledge of the resources for obtaining commercially available media and materials.
I-3	The candidate has demonstrated knowledge and understanding of the observational techniques that are appropriate for O&M instruction.
I-4	The candidate has demonstrated knowledge and understanding of the strategies and methods used to select, design, and implement non-clinical procedures for assessment and instruction in the use of sensory information in travel environments.

I-5	The candidate has demonstrated knowledge and understanding of the strategies and methods used to design and implement instructional programs using the optical and non-optical devices recommended by eye care professionals for use in travel environments.
I-6	The candidate has demonstrated knowledge and understanding of the strategies and methods used to assess environments for accessibility and safety.
I-7	The candidate has demonstrated the knowledge and understanding of the strategies and methods used to analyze and select environments for introducing, developing, and reinforcing O&M skills and techniques.
I-8	The candidate has demonstrated knowledge and understanding of the strategies and methods for selecting an appropriate position (i.e., in front of, behind, or to the side of the student) for effective instruction and student safety as the student advances through the O&M program.
I-9	The candidate has demonstrated knowledge and understanding of the importance of selecting and maintaining appropriate distances between the instructor and the student as the student progresses from early learning situations, when skills are introduced, to advanced learning, when skills are applied to environments of various types and complexities.
I-10	The candidate has demonstrated knowledge and understanding of the commonly used distances between the instructor and the student: <i>close</i> (arm's length), <i>intermediate</i> (from approximately beyond arms length to 13'), <i>distant</i> (approximately 13' to 20'), and <i>remote</i> (beyond 20').
I-11	The candidate has demonstrated knowledge and understanding of the considerations involved in selecting monitoring distances (close, intermediate, distant, and remote) to promote skill development, safety, and independence.
I-12	The candidate has demonstrated knowledge and understanding of the use of "drop-off" lessons for the assessment of O&M skills and knows the strategies and methods for selecting, designing, and implementing <i>drop-off</i> lessons.
I-13	The candidate has demonstrated the knowledge and understanding of the strategies and methods used to develop and conduct "solo" (independent) lessons and independent travel experiences.
I-14	The candidate has demonstrated knowledge and understanding of the strategies and methods used to communicate with students regarding instructional travel experiences during which the distance between the instructor and the student is remote.
I-15	The candidate has demonstrated knowledge and understanding of the role of the rehabilitation counselor, rehabilitation teacher, special education teacher, adapted physical education teacher, occupational therapist, physical therapist, social worker, and other related professionals who may be involved in interdisciplinary, multidisciplinary, or transdisciplinary instruction.
I-16	The candidate has demonstrated knowledge and understanding of standardized and non-standardized O&M assessment instruments and knows how to conduct assessments using these instruments.
I-17	The candidate has demonstrated knowledge and understanding of the appropriate procedures used to assess O&M skills and foundation areas such as motor, cognitive, and sensory skills.
I-18	The candidate has demonstrated knowledge and understanding of the strategies and methods used to analyze, interpret, and utilize O&M assessment information for selecting, designing, and implementing O&M programs consistent with individual needs.
I-19	The candidate has demonstrated knowledge and understanding of the strategies and methods for using assessment information to maintain ongoing evaluation of student progress and appropriately implement program modifications and remediation.
I-20	The candidate has demonstrated the knowledge and understanding to analyze and interpret assessment reports from related professional fields and has demonstrated the ability to utilize information in these reports in conjunction with O&M assessments.

I-21	The candidate has demonstrated knowledge and understanding of the strategies and methods used to conduct O&M assessments and instruction in itinerant-, school-, and center-based settings.
I-22	The candidate has demonstrated knowledge and understanding of the strategies and methods used to conduct assessments and to select, design, and implement O&M instruction that accommodates cultural and life style differences.
I-23	The candidate has demonstrated knowledge and understanding of the strategies and methods used to evaluate the effects of health conditions and physical and sensory impairments on the orientation process and mobility.
I-24	The candidate has demonstrated knowledge and understanding of the strategies and methods used to assess sensory motor functioning.
I-25	The candidate has demonstrated knowledge and understanding of the strategies and methods used to assess psycho-social needs related to O&M instruction.
I-26	The candidate has demonstrated knowledge and understanding of the strategies and methods used to assess human growth and development over the life span for planning and implementing O&M instruction.
I-27	The candidate has demonstrated knowledge and understanding of the strategies and methods used to assess concept development and to select, design, and implement instruction for concept development that is consistent with students' O&M needs.
I-28	The candidate has demonstrated knowledge and understanding of the specific strategies and methods used to assess the O&M skills of students who are deaf-blind and to select, design, and implement O&M instruction that meets the needs of students who are deaf-blind.
J#	HISTORY AND PHILOSOPHY OF O&M
J-1	The candidate has demonstrated knowledge and understanding of the major historical events leading to the establishment of university personnel preparation programs in O&M.
J-2	The candidate has demonstrated knowledge and understanding about the history and philosophy of educational and rehabilitation practices as they relate to O&M instruction.
J-3	The candidate has demonstrated knowledge about the development and nature of O&M programs and services in countries around the world.
J-4	The candidate has demonstrated knowledge and understanding of the Code of Ethics for O&M specialists.
J-5	The candidate has demonstrated knowledge and understanding of the accrediting processes for educational and rehabilitation facilities.
J-6	The candidate has demonstrated knowledge and understanding of the history of the profession of O&M as well as ongoing and new developments in the following areas: long cane and adaptive mobility devices, dog guide programs, low vision services, ETAs, university personnel preparation programs, recruitment, and personnel development.
J-7	The candidate has demonstrated knowledge and understanding of the strategies and methods that are used to empower students and their families to be informed and effective consumers of special educational and rehabilitation services in O&M.
J-8	The candidate has demonstrated knowledge and understanding of the strategies and methods used to advocate with consumers for quality programs and services for persons who are blind or visually impaired.

K#	PROFESSIONAL INFORMATION
K-1	The candidate has demonstrated knowledge and understanding about the sources of current literature pertinent to the profession of O&M.
K-2	The candidate has demonstrated knowledge and understanding about the professional organizations relevant to the practice of O&M and knows about the services they provide.
K-3	The candidate has demonstrated knowledge about how to maintain professional competence and stay abreast of new information and evolving trends pertinent to the profession of O&M.
K-4	The candidate has demonstrated knowledge and understanding of the basic research approaches used to study O&M, including descriptive, exploratory, experimental, and single subject design.
K-5	The candidate has demonstrated knowledge and understanding of the considerations involved in evaluating new ideas, instructional techniques, and research findings in the field of visual impairment and blindness, including sampling problems, ethical issues, and design compromises related to research and demonstration projects conducted with small samples.
K-6	The candidate has demonstrated knowledge and understanding of how to evaluate the strengths and limitations of research reports pertinent to the practice of O&M.
K-7	The candidate has demonstrated knowledge and understanding of national and local environmental accessibility standards.
L #	DEVELOPMENT, ADMINISTRATION, AND SUPERVISION OF O&M PROGRAMS
L-1	The candidate has demonstrated knowledge and understanding of the O&M service delivery models, including the residential rehabilitation center, the non-residential rehabilitation center, and itinerant rehabilitation services; residential and special school programs; and community-based itinerant and resource room school programs.
L-2	The candidate has demonstrated knowledge and understanding of the kinds of practice models available for O&M specialists, including staff positions in educational, rehabilitation, and health care settings; private contracting of direct care O&M services; and independent consulting.
L-3	The candidate has demonstrated knowledge and understanding of the major federal and state/provincial legislation and policy affecting the preparation of personnel in O&M and the provision of O&M services for persons with visual impairments.
L-4	The candidate has demonstrated knowledge and understanding of local, state/provincial, and national resources that support the effective provision of O&M programs and services.
L-5	The candidate has demonstrated knowledge and understanding of the role of the O&M specialist, the O&M assistant, and other personnel involved in interdisciplinary, multidisciplinary, and transdisciplinary approaches to providing service to persons with visual impairments.
L-6	The candidate has demonstrated knowledge and understanding of the methods used to develop and organize O&M programs.
L-7	The candidate has demonstrated knowledge and understanding of the issues involved with student safety and instructor liability.
L-8	The candidate has demonstrated knowledge of the sources of products used in the delivery of O&M services.
L-9	The candidate has demonstrated knowledge and understanding of the indicators of quality O&M instruction, including individualized clinical assessment, program development, and planning; and service delivery that is responsive to individual needs, age-appropriate, respects multicultural differences, and provides appropriate follow-up.

L-10	The candidate has demonstrated knowledge and understanding about designing O&M instructional goals, objectives, and implementing instructional programs that are compatible with service delivery systems and available resources by considering: planning that is responsive to students' training needs and the availability of personnel, equipment, and materials; providing written schedules that reflect the O&M instructor's activities; and submitting written reports consistent with the administrative requirements of the service delivery system.
L-11	The candidate has demonstrated knowledge and understanding of the systems used for appropriate record keeping in the provision of O&M programs and services.
L-12	The candidate has demonstrated knowledge and understanding of the roles, training levels, and procedures appropriate for O&M assistants, ancillary personnel, and volunteers with respect to the provision of O&M services.
L-13	The candidate has demonstrated knowledge and understanding of appropriate communication about students' O&M programs, including goals and progress, to family members and significant others, and knows how to carry out this communication in the context of client confidentiality.
L-14	The candidate has demonstrated knowledge and understanding about how to plan and conduct in-service presentations and workshops regarding O&M skills and knows how to conduct these workshops and presentations.
L-15	The candidate has demonstrated knowledge and understanding regarding how to plan and present effective public education programs related to topics in O&M.

Appendix C

Orientation and Mobility Clinical Competencies of the Conventional Method

CL#	Demonstration of Competence During Supervised Clinical Hours (Examines Application of Assessment, Instruction, and Monitoring)
CL-1	The candidate has demonstrated proficiency in establishing rapport and interacting with students.
CL-2	The candidate has demonstrated proficiency in seeking and accessing records and resources within a facility.
CL-3	The candidate has demonstrated proficiency in evaluating students utilizing appropriate assessment tools, methods, and settings for developing instructional programs.
CL-4	The candidate, in various environments, has demonstrated the ability to evaluate the manner in which a student with low vision uses visual information for travel with residual vision and non-optical devices. The candidate will also demonstrate these abilities with optical devices after consultation with a low-vision eye-care specialist.
CL-5	The candidate has demonstrated proficiency in designing and implementing activities, with and without non-optical devices, to maximize the use of functional vision in travel environments. The candidate will also demonstrate these abilities with optical devices after consultation with a low-vision eye-care specialist.
CL-6	The candidate has demonstrated proficiency in evaluating functional hearing.
CL-7	The candidate has demonstrated proficiency in designing and implementing activities, with and without hearing aids, to maximize the use of functional hearing.
CL-8	The candidate has demonstrated proficiency in teaching the application of techniques used to maximize the use of auditory information.
CL-9	The candidate has demonstrated proficiency in writing behaviorally stated goals and objectives based on evaluation findings that are realistic and appropriately sequenced.
CL-10	The candidate has demonstrated skills in planning, conducting, and evaluating lessons according to the individual's learning style, stage of development, age, or other unique personal attributes that affect learning.
CL-11	The candidate has demonstrated proficiency in planning and delivering lessons that have a stated goal, appropriate site or setting, clear instructions, and stated desired behavior or action.
CL-12	The candidate has demonstrated the ability to obtain, construct, and utilize instructional materials that are appropriate for the student's level of functioning and the particular lesson.
CL-13	The candidate has demonstrated proficiency in designing instructional programs based on knowledge of the various means and levels of communication and how the communication affects lesson planning and implementation as well as the student's response to instruction.

CL-14	The candidate has demonstrated proficiency in observation skills, the ability to interpret and analyze observations, and the flexibility to change lessons and program sequences based upon observations.
CL-15	The candidate has demonstrated proficiency in writing anecdotal notes that are concise and contain pertinent information.
CL-16	The candidate has demonstrated proficiency in providing timely, accurate, and effective feedback to a student regarding progress within a lesson and within a program.
CL-17	The candidate has demonstrated proficiency in consulting with the client, family, and other appropriate personnel regarding the student's O&M program, while respecting agreed-upon parameters of confidentiality.
CL-18	The candidate has demonstrated proficiency in modifying or adapting instructions in situations or environments that may affect an O&M lesson, such as adverse weather, fatigue, emotional upset, unexpected noise, construction, etc.
CL-19	The candidate has demonstrated proficiency in acknowledging and effectively dealing with a student's needs, fears, dependency, unrealistic goals, personality, socioeconomic level, living arrangement, or the effects of degenerative disease or the sudden onset of disease.
CL-20	The candidate has demonstrated proficiency in establishing and maintaining an appropriate position and physical distance between the instructor and the student for effective instruction, while maintaining a level of awareness for student safety, considering the instructional circumstances, lesson site, and student skills.
CL-21	The candidate has demonstrated discretion in the timing of interventions with students, indicating appropriate understanding of the student's need for support and opportunities to achieve independence throughout the instructional process.
CL-22	The candidate has demonstrated proficiency in teaching students to use their remaining senses in establishing their position, location, and direction in relationship to the travel environment.
CL-23	The candidate has demonstrated proficiency in teaching body awareness, body image, body parts, and body movement.
CL-24	The candidate has demonstrated proficiency in teaching environmental concepts.
CL-25	The candidate has demonstrated proficiency in teaching laterality, directionality, positional/relational, spatial, measurement, and temporal concepts.
CL-26	The candidate has demonstrated proficiency in selecting, designing, and implementing non-clinical procedures for instruction in the use of residual vision, as well as other remaining senses, with consultation, as appropriate.
CL-27	The candidate has demonstrated proficiency in distinguishing between a clue and a landmark in teaching a student to use them appropriately.
CL-28	The candidate has demonstrated proficiency in providing appropriate clues during instruction and requesting appropriate responses from the student.
CL-29	The candidate has demonstrated proficiency in teaching kinesthetic, visual, and auditory distance awareness.
CL-30	The candidate has demonstrated proficiency in teaching compass directions and the application of compass directions to labeling corners at intersections.
CL-31	The candidate has demonstrated proficiency in teaching the use of indoor and outdoor numbering systems.
CL-32	The candidate has demonstrated proficiency in teaching the following in appropriate travel environments: human guide techniques, protective techniques, direction taking, retrieving dropped objects, trailing, execution of turns, and self-familiarization.

CL-33	The candidate has demonstrated proficiency in teaching cane techniques in appropriate travel environments, such as diagonal cane technique—touch, touch and slide, touch and drag, three point touch, and continuous contact—techniques for ascending and descending stairs; storage of the cane; cane techniques for object negotiation; entry and exit through doors; and manipulation of the cane when traveling with a human guide.
CL-34	The candidate has demonstrated proficiency in teaching sidewalk travel.
CL-35	The candidate has demonstrated proficiency in teaching students to identify the location of intersecting sidewalks.
CL-36	The candidate has demonstrated proficiency in teaching corner detection and negotiation.
CL-37	The candidate, when monitoring at close (arm's length) distances, has demonstrated the ability to determine that a student has arrived at a drop-off in indoor environments.
CL-38	The candidate has demonstrated the ability to effectively monitor the student as the student approaches a stair drop-off, to identify the position of the cane tip in relation to the stairs as the student descends, and to make contact with the student, as appropriate, while the student negotiates the stairs.
CL-39	The candidate, when monitoring at close (arm's length) and intermediate (from approximately beyond arm's length to 13') distances, has demonstrated the ability to identify adequate and inadequate cane techniques.
CL-40	The candidate, when monitoring at close (arm's length) and intermediate (from approximately beyond arm's length to 13') distances, has demonstrated the ability to determine that a student reacts appropriately to obstacles.
CL-41	The candidate, when monitoring from close (arm's length), intermediate (from approximately beyond arm's length to 13') and distant (approximately 13' to 20') positions, has demonstrated the ability to determine effectively, in any manner, the position, movement, and safety of the student at all times.
CL-42	The candidate, when monitoring from close (arm's length), intermediate (from approximately beyond arm's length to 13'), and distant (approximately 13' to 20') positions, has demonstrated the ability to communicate effectively to the traveler, in any manner, that the traveler must come to an immediate stop.
CL-43	The candidate, when monitoring from a close distance (arm's length), has demonstrated the ability to determine, within 2 seconds of its occurrence, that the student has stopped or has failed to stop at street corners.
CL-44	The candidate has demonstrated proficiency in teaching alignment using environmental sounds and lines of reference.
CL-45	The candidate has demonstrated proficiency in teaching street crossings.
CL-46	The candidate, at stop sign and traffic light controlled intersections, has demonstrated the ability to accurately assess that the student has chosen the correct moment to cross the street.
CL-47	The candidate has demonstrated the ability to determine the correctness of alignment of a student at stop sign and traffic light controlled intersections.
CL-48	The candidate, when monitoring from an intermediate distance at stop sign or traffic light controlled intersections, has demonstrated the ability to identify vehicles turning in front of the student from the parallel and onto the perpendicular street.
CL-49	The candidate, when monitoring from an intermediate distance, has demonstrated the ability to determine if the student has veered unsafely during a crossing (beyond the crosswalk lines or the distance equivalent).

CL-50	The candidate has demonstrated proficiency in teaching travel skills to students in complex environments, such as areas with random hazards and drop-offs, areas not previously traveled, and areas with congested pedestrian travel.
CL-51	The candidate has demonstrated proficiency in teaching cane techniques in environments with escalators, revolving doors, turnstiles, and elevators.
CL-52	The candidate has demonstrated proficiency in teaching the use of traffic controls.
CL-53	The candidate has demonstrated proficiency in teaching students to negotiate service stations, parking lots, and railroad tracks.
CL-54	The candidate has demonstrated proficiency in teaching the use of public transportation.
CL-55	The candidate has demonstrated proficiency in teaching appropriate skills and procedures for independent travel in the following areas: Indoor, residential, business, rural, and special areas (e.g., malls, campuses).
CL-56	The candidate has demonstrated proficiency in communicating with students about travel experiences when the distance between the instructor and the student is remote (beyond 20') and when immediate physical or verbal communication may not take place.
CL-57	The candidate has demonstrated the ability to effectively determine the appropriateness of the student's interactions with the public and to evaluate these interactions with the student.
CL-58	The candidate has demonstrated proficiency in teaching modifications for adverse weather conditions and seasonal travel.
CL-59	The candidate has demonstrated proficiency in assisting students in choosing the most appropriate mobility system (cane, dog, ETA) to meet the student's needs at a particular time.
CL-60	The candidate has demonstrated proficiency in planning, implementing, and/or adapting lessons that incorporate the use of a dog guide or ETAs.
CL-61	The candidate has demonstrated proficiency in developing efficient and effective scheduling for O&M programs.
CL-62	The candidate has demonstrated proficiency in writing evaluation reports that describe specific tasks, conditions, and responses, and that contain recommendations based on the interpretation of these evaluations.
CL-63	The candidate has demonstrated proficiency in writing concise progress reports containing pertinent information.
CL-64	The candidate has demonstrated proficiency in maintaining ongoing records and files.
CL-65	The candidate has demonstrated proficiency in meeting with appropriate personnel to ensure accurate follow through with established skills, techniques, and program sequences.
CL-66	The candidate has demonstrated respect for student confidentiality.
CL-67	The candidate has demonstrated proficiency in locating professional information and resources.
CL-68	The candidate has demonstrated proficiency in developing and maintaining professional relationships.
CL-69	The candidate has demonstrated proficiency in providing in-service education and continuing education to assist related professionals in functioning as effective interdisciplinary, multidisciplinary and transdisciplinary team members.
CL-70	The candidate has demonstrated conduct consistent with the Orientation and Mobility Code of Ethics.

Appendix D

NBPCB Competencies

The National Blindness Professional Certification Board has been established to ensure that blind persons receive orientation and mobility instruction from qualified teachers who meet professional standards for orientation and mobility. This certification is unique in that it requires the candidate to demonstrate before examiners: (a) personal mastery of the skill of independent cane travel under sleep shades; (b) practical and academic knowledge of the field of orientation and mobility; and (c) evidence of strong positive personal convictions regarding the abilities of blind individuals.

The applicant must satisfy one of the following in order to be eligible to apply for the certification examination:

1. Documentation of a minimum of a high school diploma and two years of successful, supervised teaching experience in the field of Orientation and Mobility (it is recognized that certain employers may have additional university degree and/or experience requirements); or
2. Successful completion of a university Bachelor's or Master's Degree program with a concentration in Orientation and Mobility or a degree with a related major, which requires course work that is equivalent to a concentration in Orientation and Mobility.

An application form must be completed and sent, along with a processing fee of \$50, to the Chair of the Orientation and Mobility Examination Committee. Once all application materials have been received, the Chair, or representative appointed by the Chair, will contact the applicant to arrange for the examination. There is an examination fee of \$100 that is payable at the time of the examination.

The Orientation and Mobility Examination Committee consists of 14 members who have expertise in orientation and mobility. An examination panel of three members from the Orientation and Mobility Examination Committee will evaluate the candidate. The three areas that will be examined include (a) fundamental cane techniques for indoor and outdoor travel demonstrated under blindfold in an unfamiliar environment, (b) body of knowledge in the field of orientation and mobility, and (c) philosophy of blindness. The candidate must achieve a score of 80% in each area in order to earn certification.

It is a basic tenet of the National Blindness Professional Certification Board that cane travel instructors must personally possess the skills they will teach their blind students. Therefore, each candidate for certification, sighted or blind, must demonstrate specific travel skills without the use of sight. Candidates should bring to the examination an appropriate long, white cane and a sleepshade for use during the examination.

While the National Blindness Professional Certification Board recognizes that it is imperative that Orientation and Mobility Instructors possess excellent travel skills and comprehensive knowledge of the field of Orientation and Mobility, ultimately, it is an instructor's personal philosophy of blindness that determines his or her student's level of success as a skilled, confident independent traveler. Thus, the certification process evaluates the candidate's foundational philosophy of blindness as well as his or her travel skills and professional knowledge.

The examination of the candidates include (a) all 22 travel skills considered essential for instructor competency from Section One and (b) a minimum of eight questions from the Knowledge Competencies, Foundational Philosophy and professional Scenarios from Section Two. The candidate will be assigned points for each of the 22 skills in Section One. The scoring will be as follows: 1 (unsatisfactory) to 5 (exemplary). Each question in Section Two will also be scored in a similar fashion. Candidates for certification must earn a minimum of 80% on each section of the exam. Candidates not receiving the required 80% composite score may apply to retake the examination. Feedback will be given to the candidates in order for them to prepare for retaking the examination. Remedial training from an approved agency or university is strongly recommended to ensure successful future certification.

The National Blindness Professional Certification Board is the final authority in all matters pertaining to application, examining, and certification matters for the certification of Orientation and Mobility teachers.

SECTION ONE: *Travel Skills*

Indoor Travel

The candidate should demonstrate the ability to perform fundamental indoor and outdoor travel assignments with comparative ease. If the candidate becomes disoriented due to insufficient environmental information, points are not deducted when appropriate problem-solving techniques are used to regain orientation. Disorientation resulting from failure to utilize available information will result in a reduction in points. The use of a sleepshade is required during all performance sections of the evaluation. The candidate will be evaluated in the following areas:

- cane position, grip (traditional or open palm grip and pencil grip)
- cane arc (height, width, even tap, coverage)
- posture, stride, instep
- walking speed and gait
- obstacle detection while walking
- detection of doorways and hallways
- texture discrimination (glass, metal, tile, carpet, etc.)
- orientation (maintains orientation during a short indoor route of 200 yards)
- ascending and descending one flight of stairs
- ascending and descending an escalator
- locating an elevator; traveling to an assigned floor and return
- discriminates between large indoor open areas and small enclosed areas

Outdoor Travel

In order to provide an opportunity for the examiners to evaluate the candidate's fundamental outdoor travel skills, the candidate will be assigned a route designed to demonstrate his or her travel skills. To ensure that the candidate has ample opportunity to demonstrate the practical use of discovery techniques, the assigned route should not be familiar to the candidate. The candidate will be evaluated in the following areas:

- locating parallel and perpendicular streets
- walking on a sidewalk or path without significant veering or disorientation
- following verbal instructions regarding a route, including an alternative return route
- locating drop-offs (curbs, stairs, etc.) and obstacles
- navigating sidewalks by detecting obstacles with cane rather than through body contact
- identifying intersection types and appropriate crossing opportunities
- crossing streets with safety and accuracy
- problem solving during travel route
- locating addresses or specific locations
- understanding and using cardinal directions and environmental cues

Scoring: 1 = mastery level is unsatisfactory; 2 = mastery level is minimal; 3 = mastery level is average; 4=mastery level is above average; 5=mastery level is exemplary

SECTION TWO: Knowledge Competencies and Foundational Philosophy

The knowledge competency and foundational philosophy evaluation is an oral examination administered by the Orientation and Mobility Examination Committee. Candidates are asked to demonstrate an understanding of topics relevant to the skill of independent travel. Along with evaluating the candidate's specific knowledge of orientation and mobility and philosophy of blindness, the examiners will assess the candidate's knowledge of problematic issues which may arise in the course of cane travel instruction. Given a scenario of common orientation and mobility issues, the candidate should combine his or her expertise in teaching cane travel with his or her own understanding of blindness to provide an appropriate response. Knowledge of the following areas is necessary for this section of the evaluation:

- the visual system
- common eye diseases and disorders
- functional implications of common disabilities and impairments
- typical human growth and development
- professional ethics
- resources for low vision aids and training; hearing assessments
- sensory motor, perceptual, and cognitive processes
- skills of blindness and alternative techniques used by the blind
- adjustment to blindness and expectations for normalcy and independence
- societal attitudes about blindness and methods for effectively dealing with those attitudes

- basic counseling techniques and resources
- the effects of blindness on concept development
- addressing and resolving fears and misconceptions about independent travel
- fundamental learning theory, including *guided learning* and *discovery learning*, as it applies to independent cane travel
- alternative mobility systems, methods, and techniques
- legislation, service delivery systems, rehabilitation and education systems, and issues
- assessment strategies and methods
- report writing and case management
- history of blindness, the professional field of work with the blind, and orientation and mobility
- philosophy of blindness

Appendix E

Visual Occlusion Position Paper

Endorsed Statement of the Orientation and Mobility Division of the Association for Education and Rehabilitation of the Blind and Visually Impaired

Use of Visual Occlusion in Orientation and Mobility Instruction

Programs providing instruction in independent travel to individuals with functional/usable vision are most effective when they recognize the importance of using both visual and non-visual techniques to travel safely and efficiently. Although multiple references on low vision mobility exist, as early as 1982, Marron and Bailey recognized the fact that “any residual vision, even if it is only light perception, enhances orientation-mobility skills.” In 1989, this belief continued with Dodds and Davis (1989) reporting a new tool for evaluating the progress of individuals with low vision, that being the Percentage of Preferred Walking Speed. This precedence continues in the field with Geruschat and Smith (1997) stating that “significant differences exist in the way information is obtained for those who are sighted or blind, and these are reflected as different styles of travel” (p. 60). In review of the literature, it is clear that people travel differently, depending upon the amount and type of vision that they possess (Beggs, 1991; Clark-Carter, Heyes, & Howarth, 1986; Dodds, Carter, & Howarth, 1983; Geruschat, Turano, & Stahl, 1998; Haymes, Guest, Heyes, & Johnston, 1994; Haymes, Guest, Heyes, & Johnston, 1996; Haymes, Guest, Heyes, & Johnston, 1996; Kuyk, Elliott, Biehl, & Fuhr, 1996; Long, Rieser, & Hill, 1990; Lovie-Kitchin, Mainstone, Robinson, & Brown, 1990; Massof, Dagnelie, Benzschawel, Palmer, & Finkelstein, 1990; Morrissett, Marmor, & Goodrich, 1983; Smith, De l’Aune, & Geruschat, 1992).

For some individuals, blindfolding may be an effective method for teaching reliance on the use of other senses; however, best practice incorporates instruction in the use of remaining vision so that individuals will learn to use both visual and non-visual information simultaneously. While the use of visual occlusion is an appropriate instructional technique for some individuals (Jacobson, 1993, p. 79), it must not be mandated as a condition for the receipt of any services. The Rehabilitation Act, through its various reauthorizations, made it clear that consumer choice is a key ingredient in service provision. Therefore, when occlusion is to be used, it should be provided with the prior expressed consent of the individual receiving instruction. The professional orientation and mobility specialist, in consultation with the consumer and, when appropriate, the consumer’s family, should determine whether and how to make use of visual occlusion.

The Challenges of Travel with Partial Vision

There are four travel challenges for people with functional vision. They must learn:

(a) non-visual techniques and how to trust the non-visual information; (b) how to use vision reliably and efficiently, while (c) not allowing vision to distract them from effective non-visual information; and (d) how to use non-visual and visual information together.

Consumers with visual impairment who have some degree of available functional vision benefit from learning to perceive and utilize information received by all their senses, including their vision, to travel safely and effectively. Those who have functional vision can benefit by learning to use their vision for safe and effective travel.

In order to travel most efficiently, consumers with available functional vision need to perceive and utilize both visual and non-visual information simultaneously. Many consumers with low vision are unable to use visual and non-visual information together, unless they receive instruction in how to integrate the use of both types of information as they travel. Therefore, it is necessary to provide visual training along with non-visual modes of travel.

Visual occlusion is one of several strategies available to teach consumers with functional vision to perceive and utilize non-visual information. For individuals who have unreliable vision or decreasing vision, the use of visual occlusion is often the best method of providing instruction. For others who have reliable vision that is stable, instruction while using both vision and non-visual methods of travel may be the appropriate approach.

Teaching the Use of Vision

Consumers who have impaired vision do not automatically know how to use that vision efficiently. They must learn how much of their vision can be used reliably and also learn the limits of their vision; that is, learn when they cannot rely on visual information or when they can get the information much more effectively using non-visual techniques.

Individuals with central scotomata need to learn how to use their maximum point of fixation for eccentric viewing. Individuals with peripheral visual loss need to learn to use scanning techniques effectively. In general, individuals with low vision need to learn to use their vision to identify the critical features in the environment that will provide the most information for travel.

It is important for people to learn to travel with vision in real-life situations, where conditions limit the amount they can see. Traveling in bright sunlight, in shaded areas, on overcast days, and at night will teach people how much they can rely on their vision and when they need to rely on one or more non-visual techniques in varying lighting conditions.

Individuals who can use optical devices to enhance their vision must also learn when and how to most effectively use those devices. This includes: positioning the device, viewing through the device, focusing, scanning, locating the target, interpreting what is seen, and changing position when necessary for improved viewing (Wiener & Vopata, 1980, pp. 74, 49-56).

The Use of Visual Occlusion

For some individuals, the use of blindfolding will serve as a helpful means of learning non-visual techniques. Blindfolds can help a person acquire non-visual techniques, because they prevent visual distractions and, thus, heighten awareness of the non-visual information that is present. With blindfolds in place, the individual is able to concentrate on other sensory information. With experience, the traveler learns to use the remaining sensory information and trust the information gained through senses of audition, touch, proprioception, kinesthetic, olfactory, and the vestibular sense.

When using a blindfold for training, consumers are prevented from being distracted by vision; but, when the blindfold comes off, many people will revert back to their old habits and let the vision interfere with their ability to notice and use the non-visual information. Thus, no visual occlusion program is complete, unless the client learns to notice and use the non-visual information when the blindfold is removed.

The Integration of Visual and Non-visual Techniques

Most often, the issue is not simply whether to use or not to use a blindfold. Rather, the issue is how to provide instruction in the use of visual and non-visual information so that both can be used simultaneously. Such integration of visual and non-visual information can be taught by using intermittent and/or partial occlusion.

With intermittent occlusion, the consumer may perform a task visually and then repeat the task wearing a blindfold. The order of presentation may be varied, but the intent is to allow the individual to compare the information available both with and without vision. This helps the individual understand the uses and limitations of vision. It prepares the person for use of vision in real-life situations.

With partial occlusion, the bottom half of the client's vision may be covered so that they cannot see what is on the ground in front of the next step. The individual must rely completely on the non-visual information that the cane provides, while, at the same time, looking ahead to gain clues about the surroundings. Partial occlusion has been shown to be effective in enabling people to notice and use their cane information at the same time that they notice and use visual information.

When to Introduce Visual Occlusion

A final consideration in the use of visual occlusion is the adjustment of the individual to his or her loss of vision. Instructors must be cognizant of the fact that although, clinically, the visual occlusion method may be beneficial to specific individuals, it is vitally important to take into consideration the emotional acceptance by the consumer of this teaching strategy prior to its use. According to Livneth's Model of Adaptation to Disability, there are five phases of adjustment. During "initial impact" and "defense mobilization" phases, the individual resists awareness of the disability. In the "initial realization," "retaliation," and "reintegration" phases, the individual

moves from realizing the disability to fully accepting the disability (Stewart, 1999, pp. 303-313). The cognitive defenses and emotional components are distinctly different in each of the phases.

Introduction of visual occlusion before the individual is ready to accept the challenges of the disability can result in rejection of training or return to an earlier phase of adjustment. It, therefore, takes an instructor with a sensitivity toward the individual's adjustment to determine when occlusion is appropriate.

Who Should Determine the Use of Occlusion?

As with any intervention technique used in education and therapy, the direct service provider is in the better position to understand the consumer's needs and consult with the consumer regarding potential service approaches. In teaching orientation and mobility strategies, the orientation and mobility specialist is uniquely prepared to evaluate the consumer's use of functional vision and design an instructional program that is appropriate for the consumer's needs. Together with the consumer and, where appropriate, with the consumer's family, the O&M specialist is the professional designated to determine when instruction in the use of available vision, occlusion of available vision, or a combination thereof are effective strategies in the provision of orientation and mobility instruction.

Selected Bibliography

- Beggs, W. D. A. (1991). Psychological correlates of walking speed in the visually impaired. *Ergonomics*, 34(1), 91-102.
- Clark-Carter, D. D., Heyes, A. D., & Howarth, C. I. (1986). The efficiency and walking speed of visually impaired people. *Ergonomics*, 29(6), 779-789.
- Dodds, A. G., Carter, D. D., & Howarth, C. I. (1983). Improving Objective Measures of Mobility. *Journal of Visual Impairment and Blindness*, 438-442.
- Dodds, A., & Davis, D. (1989). Assessment and training of low vision clients for mobility. *Journal of Visual Impairment and Blindness*, 439-446.
- Geruschat, D. R., & Smith, A. (1997). *Low vision and mobility*. In B. Blasch, W. R. Wiener & R. L. Welsh (Eds.), *Foundations of orientation and mobility* (2nd ed., pp. 60-103). New York: AFB Press.
- Geruschat, D., Turano, K., & Stahl, J. (1998). Traditional measures of mobility performance and retinitis pigmentosa. *Optometry and Vision Science*, 75(7), 525-537.
- Haymes, S., Guest, D., Heyes, A., & Johnston, A. (1994). Comparison of functional mobility performance with clinical vision measures in simulated retinitis pigmentosa. *Optometry and Vision Science*, 71(7), 442-453.
- Haymes, S., Guest, D., Heyes, A., & Johnston, A. (1996). Mobility of people with retinitis pigmentosa as a function of vision and psychological variables. *Optometry and Vision Science*, 73(10), 621-637.
- Haymes, S. A., Guest, D. J., Heyes, A. D., & Johnston, A. W. (1996). The relationship of vision and psychological variables to the orientation and mobility of visually impaired persons. *Journal of Visual Impairment and Blindness*, 314-324.
- Jacobson, W. H. (1993). *The art and science of teaching orientation and mobility to persons with visual impairments*. New York: AFB Press.
- Kuyk, T., Elliott, J., Biehl, J., & Fuhr, P. (1996). Environmental variables and mobility performance in adults with low vision. *Journal of the American Optometric Association*, 67(7), 403-409.
- Long, R. G., Rieser, J. J., & Hill, E. W. (1990). Mobility in individuals with moderate visual impairments. *Journal of Visual Impairment & Blindness*, 111-118.
- Lovie-Kitchin, J., Mainstone, J., Robinson, J., & Brown, B. (1990). What areas of the visual field are important for mobility in low vision patients? *Clinical Vision Science*, 5(3), 349-263.

- Marron, J. A., & Bailey, I. L. (1982). Visual factors and orientation-mobility performance. *American Journal of Optometric Physiology and Optics*, 59, 413-426.
- Massof, R. Q., Dagnelie, G., Benzsawel, T., Palmer, R. W., & Finkelstein, D. (1990). First order dynamics of visual field loss in retinitis pigmentosa. *Clinical Vision Science*, 5(1), 1-26.
- Morrisett, D., Marmor, M., & Goodrich, G. (1983). An evaluation of night vision mobility aids. *American Academy of Ophthalmology*, 90(10), 1226-1230.
- Smith, A. L., De l'Aune, W., & Geruschat, D. R. (1992). Low vision mobility problems: Perceptions of O&M specialists and persons with low vision. *Journal of Visual Impairment and Blindness*, 86(1), 58-62.
- Stewart, J. R. (1999). Applying Beck's cognitive therapy to Livneth's model of adaptation to disability. In R. P. Marinelli & A. Dell Orto (Eds.), *The psychological and social impact of disability* (4th ed., pp. 303-312). New York: Springer Publishing Company.
- Wiener, W., & Vopata, A. (1980). Suggested curriculum for distance vision training with optical aids. *Journal of Visual Impairment and Blindness*, 74, 49-56.

Appendix F

Individual and Group Lessons

AER Resolution 2002—7 Individual/Group O&M lessons

WHEREAS, each child or adult consumer who is blind or visually impaired is entitled to instruction that will enable the person to reach his or her greatest travel potential; and

WHEREAS, the consumer who is blind or visually impaired is entitled to orientation and mobility instruction that is designed to meet his or her unique needs, abilities, and potential; and

WHEREAS, the safety of the consumer who is blind or visually impaired is paramount in determining the manner in which services in orientation and mobility are provided; and

WHEREAS, the structure and content of orientation and mobility services must therefore be based on knowledge and individual assessment of the consumer; and

WHEREAS, certified orientation and mobility specialists (COMS) are specially qualified to conduct assessments for the purpose of determining individual needs; and

WHEREAS, instructional services that meet the specific needs of individual consumers typically are provided with a consumer to instructor ratio of one to one; and

WHEREAS, at times instructional services can be provided in small groups when instruction is carefully planned to address each consumer's specific needs and safety; and

WHEREAS, certified orientation and mobility specialists (COMS) are specially qualified to determine the appropriate means for providing orientation and mobility services while considering safety and individual needs;

THEREFORE BE IT RESOLVED that on this 21st day of July, 2002, in the city of Toronto, Ontario, that the Association for Education and Rehabilitation of the Blind and Visually Impaired (AER) affirms that certified orientation and mobility specialists (COMS), in consultation with the consumer, and when appropriate with the consumer's family, are recognized as the designated sole professionals responsible for making determinations regarding the environments in which orientation and mobility services are provided, and whether individual or group lessons are appropriate for teaching specific skills in accordance with individual need and safety.

Appendix G

ACVREP Code of Ethics for O&M Specialists

Preamble

Orientation and mobility (O&M) specialists recognize the significant role that independent movement plays in the overall growth and functioning of the individual and are dedicated to helping each individual attain the level of independence necessary to reach his or her full potential. Orientation and mobility specialists gather, develop, and utilize specialized knowledge in accomplishing this with all professions; the possession of specialist knowledge obligates the practitioner to protect the rights of the individuals who must avail themselves of the particular service. To assure the public of our awareness of this obligation, we commit ourselves to this Code of Ethics.

In order to fulfill this obligation, O&M specialists pledge themselves to standards of acceptable behavior in relation to the following five commitments: Commitment to the Student; Commitment to the Community; Commitment to the Profession; Commitment to Colleagues and Other Professionals; and Commitment to Professional Employment Practices.

It is the responsibility of each O&M specialist to adhere to the principles in the Code and encourage colleagues to do the same.

1. Commitment to the Student

- 1.1 The O&M specialist will value the worth and dignity of each individual.
- 1.2 It is the responsibility of the O&M specialist to strive at all times to maintain the highest standards of instruction.
- 1.3 The O&M specialist will take all reasonable precautions to ensure the safety of the student from conditions that interfere with learning.
- 1.4 The O&M specialist will respect the confidentiality of all information pertaining to the student. He or she will not divulge confidential information about any student to any individual not authorized by the student to receive such information unless required by law or unless withholding such information would endanger the safety of the student or the public.
- 1.5 Before beginning instruction with the student, the O&M specialist will make every attempt to obtain and evaluate information about the student that is relevant to the O&M instruction.
- 1.6 The O&M specialist will respect the rights of the student and/or parent/guardian to participate in decisions regarding the instructional program.
- 1.7 Decisions regarding continuing or discontinuing instruction will be made with the student and will be based upon evaluation of the student's needs, abilities, and

skills. The decisions will be made in the student's best interest, independent of personal or agency convenience.

- 1.8 The O&M specialist will provide sufficient information regarding the various types of O&M guidance devices and will explore with the student which device will best meet specific needs.
- 1.9 The O&M specialist will seek the support and involvement of the family and/or guardian in promoting the student's instructional goals and in advancing his or her continued success. This will include sharing information with the family that will facilitate the student's welfare and independence, but not communicating information that violates the principles of confidentiality.
- 1.10 The O&M specialist will ask the consent of the student and/or guardian before inviting others to observe a lesson or before arranging to have the student photographed or tape recorded.
- 1.11 The O&M specialist will make all reports objective and will present only data relevant to the purposes of the evaluation and instruction. When appropriate, the O&M specialist will share this information with the student.
- 1.12 The O&M specialist will endeavor to provide individuals involved with the student sufficient knowledge, instruction, and experiences relative to O&M so as to facilitate the goals of the student.
- 1.13 The O&M specialist will not dispense or supply O&M equipment unless it is in the best interest of the student.
- 1.14 The O&M specialist will not allow consideration of personal comfort or convenience to interfere with the design and implementation of necessary travel lessons.
- 1.15 The O&M specialist will be responsible for services to students who are referred and will provide adequate ongoing supervision when any portions of the service is assigned to interns or student teachers who are enrolled in O&M university programs, with the understanding that each individual will function under strict supervision.

2. *Commitment to the Community*

- 2.1 The student will not be refused service by the O&M specialist because of age, sex, race, religion, national origin, or sexual orientation.
- 2.2 The student shall not be excluded from service because of the severity of his or her disabilities unless it is clearly evident that he cannot benefit from the service.
- 2.3 The O&M specialist will attempt to influence decision making that establishes the rights of individuals to receive service.
- 2.4 The O&M specialist will contribute to community education by defining the role of O&M in the community, by describing the nature and delivery of service, and by indicating how the community can be involved in the education and rehabilitation process.
- 2.5 The O&M specialist will not engage in any public education activity that results in the exploitation of his or her students. Exaggeration, sensationalism, superficiality, and other misleading activities are to be avoided.

3. *Commitment to the Profession*

- 3.1 The O&M specialist will seek full responsibility for the exercise of professional judgment related to O&M.
- 3.2 To the best of his or her ability, the O&M specialist will accept the responsibility, throughout the career duration, master and contribute to the growing body of specialized knowledge, concepts and skills that characterize O&M as a profession.
- 3.3 The O&M specialist will interpret and use the writing and research of others with integrity. In writing, making presentations, or conducting research, the O&M specialist will be familiar with and give recognition to previous work on the topic.
- 3.4 The O&M specialist will conduct investigations in a manner that takes into consideration the welfare of the subject, and report research in a way as to lessen the possibility that the findings will be misleading.
- 3.5 The O&M specialist will strive to improve the quality of provided service and promote conditions that attract suitable persons to careers in O&M.
- 3.6 The O&M specialist will, whenever possible, support and participate in local, state, and national professional organizations.
- 3.7 The O&M specialist will accept no gratuities or gifts of significance over and above the predetermined salary, fee, and/or expense for professional service.
- 3.8 The O&M specialist will not engage in commercial activities that result in a conflict of interest between these activities and professional objectives with the student.
- 3.9 The O&M specialist involved in development or promotion of O&M devices, books or other products, will present such products in a professional and factual way.
- 3.10 The O&M specialist will report suspected and/or known incompetence, illegal, or unethical behavior in the practice of the profession.
- 3.11 The O&M specialist will strive to provide fair treatment to all members of the profession and support them when unjustly accused or mistreated.
- 3.12 Each member of the profession has a personal and professional responsibility for supporting the O&M Code of Ethics and maintaining effectiveness.

4. *Commitment to Colleagues and Other Professionals*

- 4.1 The O&M specialist will engage in professional relationships on a mature level and will not become involved in personal disparagement.
- 4.2 The O&M specialist will communicate fully and openly with colleagues in the sharing of specialized knowledge, concepts, and skills.
- 4.3 The O&M specialist will not offer professional services to a person receiving O&M instruction from another O&M specialist, except by agreement with the other specialist or after the other specialist has ended instruction with the student.
- 4.4 When transferring a student, the O&M specialist will not commit a receiving specialist to a prescribed course of action.
- 4.5 The O&M specialist will seek harmonious relations with members of other professions. This will include the discussion and free exchange of ideas regarding

the overall welfare of the student and discussion with other professionals regarding the benefits to be obtained from O&M services.

- 4.6 The O&M specialist will not assume responsibilities that are better provided by other professionals who are available to the student.
- 4.7 The orientation and mobility specialist will seek to facilitate and enhance a team effort with other professionals. In such situations where team decisions are made, the O&M specialist will contribute information from his or her own particular perspective and will abide by the team decision unless the team decision requires that he or she act in violation of the Code of Ethics.

5. *Commitment to Professional Employment Practices*

- 5.1 The O&M specialist will apply for, accept, or offer a position on the basis of professional qualification and will act with integrity in these situations.
- 5.2 The O&M specialist will give prompt notification of any change of availability to the agency or school where he has applied.
- 5.3 The O&M specialist will give prompt notification of any change of availability or nature of a position.
- 5.4 The O&M specialist will respond factually when requested to write a letter of recommendation for a colleague seeking a professional position.
- 5.5 The O&M specialist will provide applicants seeking information about a position with an honest description of the assignment, conditions of work, and related matters.
- 5.6 The O&M specialist will abide by the terms of a contract or agreement, whether verbal or written, unless the terms have been falsely represented or substantially changed by the other party.
- 5.7 The O&M specialist will not accept positions where proven principles of O&M practice are compromised or abandoned, unless the position is accepted with the intention of amending or modifying the questionable practices and providing that they do not participate in the behavior that violates the Code of Ethics.
- 5.8 The O&M specialist will adhere to the policies and regulations of the employer except where he or she is required to violate ethical principles indicated in this code. To avoid possible conflicts, the O&M specialist will acquaint the employer with the contents of this code.
- 5.9 The O&M specialist may provide additional professional service through private contracts, as long as these services remain of the highest quality and do not interfere with the specialist's regular job duties.
- 5.10 The O&M specialist will not accept remuneration for professional instruction from a student who is entitled to such instruction through an agency or school, unless the student, when fully informed of the services available, decided to contract privately with the specialist.
- 5.11 The O&M specialist will establish a fee for private contracting in cooperation with the contracting agency or school that is consistent with the reasonable and customary rate of that particular geographic region.

- 5.12 When providing additional service through private contracts, the O&M specialist will observe the agency or school's policies and procedures concerning outside employment including the use of facilities.

(Adopted by Interest Group #9 of the American Association of Workers for the Blind, July 1973, and by its successor, the Association for Education and Rehabilitation of the Blind and Visually Impaired.)

Revised by AER Division Nine, July 1990; approved by AER International Board, April 1991.

Appendix H

NBPCB Code of Professional Ethics

Preamble

The National Blindness Professional Certification Board's (NBPCB) Code of Professional Ethics is a public statement of the common set of values and principles used to promote and maintain high standards of behavior among those specialists in work with the blind who elect and are accepted to become Certified Blindness Professionals through this Board's certification processes. The Board is committed to furthering the ability of persons who are blind or partially blind to function competently, independently, and successfully, not only in their own environments but also as fully integrated and participating citizens in the broader society. To this end, all Certified Blindness Professionals (CBPs), working at all professional levels, shall treat persons who are blind or partially blind with dignity and respect and will provide the best possible training and related vocational rehabilitation services that can be offered, based upon the most current techniques and training principles available at the time. It is the ongoing objective of CBPs to act in an ethical manner.

Acceptance of an NBPCB certification commits the CBP to adherence to these ethical principles. Any action in violation of either the spirit or purpose of this Code shall be considered to be unethical and shall be grounds for immediate suspension or revocation of certification. An intentional Code violation by any CBP shall serve as *prima facie* evidence of his or her desire and choice voluntarily to relinquish NBPCB certification and to forfeit all rights or privileges which inure to a person by reason of holding one of this Board's professional certifications.

It is the responsibility of each CBP to review and to come fully to understand these ethical principles. Lack of knowledge or understanding of an ethical responsibility may not be used as a defense against a charge of unethical conduct. Since the use—in connection with a certificant's name and/or title—of a designation relating to one of the NBPCB certifications (such as *NOMC*) is a privilege granted by the NBPCB, this Board reserves unto itself the sole power to suspend or revoke this privilege upon a determination that a Code violation has occurred. If a violation is found, the CBP will relinquish the certification designation.

Definitions

- 0.01. *Blind* means any person who is totally blind or any person who is functionally blind—that is, a person who is partially blind and who uses alternative techniques to enable him or her to perform a majority of life's essential activities or functions competently, independently, competitively and successfully.
- 0.02. *Board* means the National Blindness Professional Certification Board, Inc.
- 0.03. *CBP* means any professional in work with the blind who has qualified for and received certification from the National Blindness Professional Certification Board. *Blindness*

professionals may become certified in the areas of Orientation and Mobility, Teacher of Blind Students, Rehabilitation Counselor, Rehabilitation Teacher, or Independent Living Teacher.

- 0.04. Consumer means a blind person as defined in Section 0.01 above who is a child or student receiving special educational services; an adult client receiving Vocational Rehabilitation services, Rehabilitation Teaching services or Independent Living services from any state or private agency for the blind; or a blind person who has contracted privately with a CBP for educational or adjustment to blindness services.
- 0.05. NBPCB means the National Blindness Professional Certification Board, Inc.

Principle I. CBP Core Values and Beliefs

- 1.01. The CBP operates from an understanding that persons who are blind or partially blind are normal people who cannot see and that blindness is a normal characteristic like the hundreds of others, which taken together mold each of us into a unique human being. Based upon this fundamental truth, the CBP provides his or her blindness-related services with the high expectation that the blind or partially blind consumer with whom he or she is working will be able to do what normal people do upon completion of proper blindness training and services. Personal empowerment and complete integration into the broader society are the aspirational goals and objectives for consumers of CBP services. The CBP strives at all times to help the blind or partially blind consumer achieve these objectives and become the very best that he or she is capable of becoming.
- 1.02. The CBP understands that persons who are blind or partially blind are members of a visible and identifiable minority and that, therefore, the primary problem faced by persons who are blind is attitudinal rather than physical—that is, there are widespread public misconceptions and misunderstandings about blindness that lead to beliefs and feelings of inferiority. While these public attitudes about blindness are socially constructed rather than factual, they are prominent in our society and in the emotions of consumers of services for the blind.
- 1.03. Therefore, each of the blindness services that are provided by CBPs must be designed and intended to teach consumers of services a new and constructive set of attitudes, based upon an understanding that the prevailing views about blindness are wrong and harmful. The CBP understands that the overarching objective of the services that are being provided is to enable the blind or partially blind consumer to come emotionally—not just intellectually—to understand that he or she is a normal person who can be truly independent and self-sufficient.
- 1.04. The CBP understands that quality training in the skills or alternative techniques of blindness is essential to freedom and independence for persons who are blind or partially blind and that the skills should not merely be introduced—they should be mastered by the consumer. The CBP also understands, however, that the simple skills of blindness such as Braille or cane travel are not ends unto themselves but are merely small parts of a larger objective—helping the consumer adjust fully to his or her blindness.
- 1.05. The CBP understands that the blind or partially blind consumer must learn to cope calmly and unemotionally with the unusual or demeaning things other people will do or say because of the public’s misconceptions about blindness. Therefore, discussions

concerning prevailing misunderstandings and misconceptions and the consumer's responses to them are appropriately sprinkled throughout class or training sessions.

- 1.06. The CBP understands that the blind or partially blind consumer must learn to blend in and be acceptable and desirable to the broader society. Therefore, discussions are appropriate to help the consumer learn what it takes in the way of good habits regarding appearance, punctuality, reliability, courtesy, and the like for the blind person to be enabled to blend in satisfactorily.

Principle II. Beneficence

- 2.01. The CBP shall demonstrate an ongoing concern for the well-being of each of the blind or partially blind persons with whom he or she is working.
- 2.02. The CBP shall provide services in a fair and equitable manner. In this connection, CBPs recognize and appreciate the cultural components of economics, geography, race, ethnicity, religious and political factors, marital status, and the sexual orientation of all blind or partially blind consumers of services.
- 2.03. The CBP shall make every effort to advocate for those blind or partially blind persons with whom he or she is working to obtain needed high-quality educational or adjustment to blindness services through all available means.

Principle III. Nonmaleficence

- 3.01. The CBP shall take reasonable precautions to avoid imposing or inflicting harm upon the blind or partially blind consumer with whom he or she is working.
- 3.02. The CBP shall maintain relationships that do not exploit blind or partially blind consumers sexually, physically, emotionally, financially, socially or in any other manner.

Principle IV. Autonomy, Privacy, and Confidentiality

- 4.01. The CBP shall respect the rights of the blind or partially blind person with whom he or she is working.
- 4.02. The CBP shall collaborate with the blind or partially blind consumer in setting goals and priorities throughout the training period. For consumers of Vocational Rehabilitation services, the CBP shall respect the consumer's rights under the Informed Choice provisions of the Vocational Rehabilitation Act and will also do his or her best to provide relevant and factual information about programs and services so that the consumer's ultimate choice can truly be informed.
- 4.03. If research is to be conducted using information gathered by CBPs through the provision of their services, the CBP shall obtain informed consent from the blind or partially blind consumer or consumers with whom he or she is working before using any personal information that might be published as a result of the research. Statistical information only may be used without the consumer's consent.
- 4.04. The CBP shall protect and keep confidential all privileged forms of written, verbal, and electronic communication concerning the blind or partially blind consumer, unless consent has been provided by the consumer, or unless otherwise mandated by local, state or federal laws or regulations.

Principle V. Duty

- 5.01. The CBP shall achieve and continually maintain high standards of competence in his or her chosen profession.
- 5.02. The CBP shall obtain and maintain any state or private credentials required for the services that are being provided.
- 5.03. The CBP shall take responsibility for maintaining and improving competence by participating regularly in professional development and training opportunities.
- 5.04. The CBP shall provide appropriate supervision to individuals for whom he or she has supervisory responsibility.
- 5.05. The CBP shall refer to or consult with other qualified service providers whenever such a referral or consultation would be helpful to the adjustment to blindness of the blind or partially blind consumer.

Principle VI. Justice

- 6.01. The CBP shall comply with all laws and NBPCB policies that are intended to guide provision of services to persons who are blind or partially blind.
- 6.02. The CBP shall require those professionals whom he or she supervises in educational or adjustment to blindness activities to adhere to the NBPCB Code of Professional Ethics.
- 6.03. The CBP shall take reasonable steps to ensure that employers are aware of CBPs' ethical obligations, as set forth and promulgated in this Code of Professional Ethics.

Principle VII. Veracity

- 7.01. The CBP shall provide fair and accurate information about available educational or adjustment to blindness services.
- 7.02. The CBP shall accurately represent his or her credentials, qualifications, educational background, experience, training, and competence.
- 7.03. The CBP shall disclose any professional, personal, financial, business, or volunteer affiliations that potentially could pose a conflict of interest to those with whom he or she may establish a professional, contractual, or other working relationship.
- 7.04. The CBP shall refrain from using or participating in the use of any form of communication that contains false, fraudulent, deceptive or unfair statements or claims concerning colleagues or service providers.

Principle VIII. Fidelity

- 8.01. The CBP shall treat colleagues and other blindness professionals with fairness, discretion, and integrity.
- 8.02. The CBP shall preserve, respect, and safeguard confidential information about colleagues and other blindness professionals, unless otherwise mandated by national, state, or local laws.
- 8.03. The CBP shall accurately represent the qualifications, views, contributions, and recommendations of colleagues.

- 8.04. The CBP shall take adequate measures to discourage, prevent, expose, and correct any breaches of this Code of Professional Ethics and report any breaches to appropriate NBPCB officials for curative action.
- 8.05. The CBP shall familiarize himself or herself with established NBPCB policies and procedures created for the purpose of handling and resolving complaints arising out of alleged violations of the standards set forth in this Code of Professional Ethics.

Allegations of Unethical Acts or Practices

- 9.01. It shall be a breach of this Code of Ethics for any CBP to violate any Section of any Principle set forth in this document concerning CBP Core Values and Beliefs; Beneficence; Nonmaleficence; Autonomy, Privacy, and Confidentiality; Duties; Justice; Veracity; and Fidelity. As indicated above in the Preamble to this document, an intentional violation of any Section of this Code shall be *prima facie* evidence of a CBP's affirmative decision to choose voluntarily to relinquish NBPCB certification.
- 9.02. An allegation of a violation of any Section of this Code shall be submitted in writing to the President (or his/her designee) for action.
- 9.03. Within ten days of the receipt of a written allegation of violation of this Code, the President (or his/her designee) shall name a three-member panel to review the allegation and shall furnish each member with a written copy of the complaint. The three reviewers may be either NBPCB Board members or members of certification committees. The President shall name one of the three appointees as chairperson of the review panel.
- 9.04. The review panel may find: (1) no violation and recommend dismissal of the complaint; (2) a minor violation; and recommend suspension for a fixed period of time, during which period the CBP shall correct his or her improper action; or (3), where a violation is clearly intentional and/or flagrant, the panel may find a serious violation and recommend total revocation of certification.
- 9.05. Within 20 days of receipt of the written allegation, the Chairperson of the review panel shall report the findings and recommendations of the panel to the President (or his/her designee) in writing, and the President shall notify the respondent in writing of the findings and recommendations of the panel.
- 9.06. Where the finding of the panel has been either to recommend suspension or revocation of certification, the respondent may request that the entire NBPCB Board review the decision of the panel. This request must be in writing and submitted to the President within ten days of receipt by the respondent of the panel's adverse decision.
- 9.07. If an appeal is submitted in writing to the President, he/she shall convene a meeting of the NBPCB Board, and the Board shall provide a written decision to the respondent within 20 days of receipt of the appeal. The Board may uphold, modify or reverse the panel decision. All decisions of the NBPCB Board shall be final.
- 9.08. Where a CBP's certification has been revoked, the respondent may apply for re-certification after one full year has elapsed following the final revocation. It will be the responsibility of the respondent to demonstrate to the Board that a good faith effort has been made to correct the acts or practices giving rise to the revocation. A written request for re-certification must be submitted directly to the President, and the Board shall determine whether or not to grant re-certification. The respondent may not simply apply for certification through the usual certification application process.

Appendix I

Resource List of Partners

American Foundation for the Blind
11 Penn Plaza Suite 300
New York, NY 1001
1-800-232-5463
www.afb.org

National Federation of the Blind
1800 Johnson St.
Baltimore, MD 21230
1-410-659-9314
www.nfb.org

American Council of the Blind
1155 15th St. NW Suite 1004
Washington, DC 20005
1-800-424-8666
www.acb.org

National Eye Institute
2020 Vision Place
Bethesda, MD 20892-3655
1-301-496-5248
www.nationaleyeinstitute.org