

REHABILITATION MANUAL 17

**PERSONS WITH DEAFBLINDNESS AND
TACTILE SIGN LANGUAGE**

Editor

HIROSHI KAWAMURA

**NATIONAL REHABILITATION CENTER
FOR PERSONS WITH DISABILITIES
JAPAN**

(WHO COLLABORATING CENTRE)

December, 2005

The National Rehabilitation Center for Persons with Disabilities was designated as the WHO Collaborating Centre for Disability Prevention and Rehabilitation in 1995.

Terms of Reference are:

- 1 To undertake research and development of disability medical rehabilitation for persons with disabilities(PWDs), and to disseminate information on the use of such technology through education and training of WHO fellows and other professional staff.
- 2 To develop training programme of self-management skill in collaboration with PWDs, and to disseminate it to relevant professionals through education and training.
- 3 To undertake studies of community-based rehabilitation(CBR), primary health care, and other social support systems for PWDs.
- 4 To undertake research and development of affordable rehabilitation a assistive technologies in collaboration with PWDs.
- 5 To prepare manuals for education and training of professionals in health, medical and welfare services for PWDs.
- 6 To support organization of conference and/or seminars on rehabilitation of PWDs.

National Rehabilitation Center for Persons with Disabilities
WHO Collaborating Centre for Disability Prevention and Rehabilitation

Rehabilitation Manual 17

Persons with Deafblindness and Tactile Sign Language

December 27, 2005

Editor: Hiroshi KAWAMURA

© National Rehabilitation Center for Persons with Disabilities

Tokutaro Sato, MD., Ph.D., President

4-1, Namiki, Tokorozawa City, Saitama Prefecture, 359-8555, Japan

Tel. 81-4-2995-3100

Fax. 81-4-2995-3102

E-mail: whoclbc@rehab.go.jp

EDITOR

Hiroshi KAWAMURA

National Rehabilitation Center for Persons with Disabilities

CONTRIBUTOR

Takayuki AIDA

National Rehabilitation Center for Persons with Disabilities

COLLABORATORS

Satoru IORI

Social Welfare Juridical Person, Zenkoku Morosha Kyokai (Japan Deafblind Association)

Shin-ichiro KADOKAWA

NPO Shichokaku Niju-Shogaisha Fukushi Center (Day Service Center for the Deafblind) "SMILE"

Yuji TAKOH

NPO Tokyo Morosha Tomonokai (Tokyo Deafblind Association)

COLLABORATIVE ORGANIZATIONS

Social Welfare Juridical Person, Zenkoku Morosha Kyokai (Japan Deafblind Association)

Preparatory Committee for the Establishment of a Liaison Council for National Organization of Persons with Deafblindness

Juridical Foundation, Japanese Federation of the Deaf

ILLUSTRATOR

Jyunji MORI

PREFACE

Visual and hearing impairments are disorders that progress over time, with a significantly large proportion of visually or hearing impaired persons becoming deafblind with age. In Japan, as aging society, it is considered that the population of persons with deafblindness is steadily increasing.

Persons with deafblindness communicate through sign languages, the finger alphabet, braille methods, conversational writing, writing on the palm or voice-based communication, depending on the level of impairment and the individual's background. Such diversity in communication methods sometimes makes it difficult for persons with deafblindness to communicate easily with each other.

However, there has been amazingly rapid progress in communication technologies using computers, and in particular, technological advances in synchronization of transmitting and receiving voices, images (of sign language) and text (including braille and large type), suggest potential ways to markedly increase social participation of persons with deafblindness in the near future. An increasing number of deafblind persons work with both a braille display and the Internet is increasing, and the time when persons with deafblindness are able to fully access mobile phones and digital broadcasts may not be far off. Notably, real-time captioning allows users to immediately read subtitles at conferences or meetings on a computer screen using pin display. Thus, for persons with deafblindness who are able to read braille, access to information and the opportunities to participate in the field of real-time information are beginning to expand dramatically.

In addition, information security based on sign language knowledge is provided to those with deafblindness who have learnt sign languages. Among such sign languages, tactile sign language, as described in this manual, is a common means of communication used by persons with deafblindness. This method has been enhanced by research and development investigations; for example, virtual reality technologies have been used to develop tactile gloves.

This manual summarizes the state of communication among persons with deafblindness in Japan, and describes points to keep in mind when working with tactile sign language.

I hope that this manual will help further understanding about how persons with deafblindness communicate and that it will also increase their opportunities to communicate with others.

H. KAWAMURA

CONTENTS

Preface

Contributors

Chapter 1.

Basic Facts about Persons with Deafblindness	1
1. What is Deafblindness?	1
2. Barriers due to Deafblindness	1
1) Communication	1
2) Information acquisition	2
3) Going out	2
3. Four Categories of Persons with Deafblindness	3
1) Persons who have low vision and hard of hearing	3
2) Persons who have low vision and deaf	3
3) Persons who are blind and hard of hearing	3
4) Persons who are totally deaf and blind	3
4. Communication of Persons with Deafblindness	3
1) Sign languages (Sign language for low vision, tactile sign language)	4
2) Finger alphabet	5
3) Braille methods (Braille, Blista braille stenograph, Finger braille)	10
4) Conversational writing	11
5) Writing on the palm	12
6) Voice-based communication	13

Chapter 2.

Basic Techniques of Tactile Sign Language	15
1. Guidelines for Using Tactile Sign Language	15
1) How to hold the hands	15
2) Posture	16
3) Methods of expression	18
4) Checking a sign	18
2. Points of Concern	19

Chapter 3.	
Techniques for Conversations with Person with Deafblindness	23
1. Introduce Yourself	23
2. Clarify a Change in the Topic	23
3. Describe the Surroundings	23
4. Ensure Privacy	23
5. Take a Break During a Long Conversation	24
6. Before Leaving the Site, Provide the Person with Deafblindness an Explanation	24
7. Be Sensitive to the Pace of the Person with Deafblindness	24
8. Respect the Position of the Person with Deafblindness	24
Chapter 4.	
How to Proceed with Tactile Sign Language Training	26
1. Guidelines for Conducting Training	26
2. How to Proceed with Training	27
1) Introduction	27
2) Time of training	27
3) Items of training	27
4) Evaluation	28
3. Summary	28
Conclusion	30
References	31

Chapter 1.

Basic Facts about Persons with Deafblindness

1. What is Deafblindness?

Persons with deafblindness have both hearing and visual impairments. It is difficult to understand the condition of being unable to hear or see things, or of having difficulty in hearing or seeing things. One person with deafblindness describes his deafblindness as a "dark and silent world with no light like a deep sea."

Since a person with deafblindness cannot hear sounds or human voices or see things, he/she would not be conscious of an accident even if it occurred in front of him/her, when he/she is alone. In addition, when a deafblind person is at home, he/she will not receive information from TV or newspapers, or cannot know a person visits his/her home.

When this person goes outside, he/she will not receive any of the various information available in town, such as the color of traffic lights, road traffic, or news about a bargain sale that has just started. Moreover, even if this person is in the same room as someone else such as a family member, they cannot converse with each other unless a common means of communication is established.

Thus, the deafblind world is indeed a "dark and silent world with no light like a deep sea". Persons with deafblindness always tend to be left in a solitary situation, unless people around them make contact.

2. Barriers due to Deafblindness

Whenever a human acquires information in daily life, two senses - audition and vision, play a major role. The use of these senses is restricted in persons with deafblindness, who must face several barriers in the areas of communication, information acquisition and transfer.

1) Communication

When an individual establishes a favorable relationship with another person, it is necessary to use some form of communication such as voice and languages such as sign language, in order to communicate intention. However, it is difficult for persons with deafblindness to receive words through voice or interpret intentions through sign languages, although the difficulty varies depending on the level of hearing and visual impairment.

Thus, it is difficult for them to understand the intentions of others or to accurately communicate their own intentions, so they are unable to readily

establish relationships with others and they feel lonely.

In addition, even if persons with visual or hearing impairment have acquired some common means of communication for conversing with others, it is difficult for persons who have low vision and hard of hearing to confirm the existence of others. Consequently, they can communicate with others only by waiting for others to make an approach.

Therefore, those who are close to persons with deafblindness should approach them, provide information about their surroundings, such as confirming the presence of persons "A" and "B" in the room, and act as an intermediary (if they wish) so that they can converse with "A" or "B". Such actions prevent persons with deafblindness from feeling lonely and encourage them to establish connections with others.

2) Information acquisition

Our daily life is filled with various pieces of information. Those who do not have any hearing or visual impairment can automatically acquire information such as the colors of traffic lights and the sounds of road traffic through their eyes and ears. However, persons with deafblindness cannot acquire such information or have difficulty acquiring it.

Difficulty in acquiring information does not simply mean they are unaware of such information. This difficulty impacts negatively in various ways on their everyday lives, on their human relationships and financial status.

Example (1): Being unaware of the availability of a new product and continuing to use the old product.

Example (2): Being unaware of events occurring in their immediate world and of social news, unable to catch up through chatting with others and becoming estranged from acquaintances.

Example (3): Being unaware of an inexpensive store opening near home and continuing to use a distant, expensive store, causing the person to waste time and money.

These disadvantages can be lessened if individuals around persons with deafblindness help them acquire information by relating with them in everyday life.

3) Going out

Persons with deafblindness can move around on their own in familiar surroundings. However, in unfamiliar or novel surroundings, they will have

difficulty in sensing the conditions around them and therefore, they will often feel worried or be at risk as they move about. As a result, they tend to become reluctant to go out, preferring to stay indoors, losing opportunities to exercise or meet with others, which can affect their health and human relationships. Sometimes, even if a person with deafblindness wishes to go out, he/she may not be able to do so because there are so few translators or assistants available. Therefore, it is important to train more translators and assistants for persons with deafblindness and establish a social service system that is always able to respond to their requests to go out.

3. Four Categories of Persons with Deafblindness

Persons with deafblindness are defined as those individuals who have both visual and hearing impairments; the degrees and details of which vary depending on individual backgrounds, such as when the impairment occurred, developmental history and the educational environment.

In general, deafblind persons are categorized into one of the following four types:

1) Persons who have low vision and hard of hearing

Visual → Capable of using residual vision

Hearing → Capable of using residual hearing

2) Persons who have low vision and deaf

Visual → Capable of using residual vision

Hearing → Incapable of using hearing at all

3) Persons who are blind and hard of hearing

Visual → Incapable of using vision at all

Hearing → Capable of using residual hearing

4) Persons who are totally deaf and blind

Visual → Incapable of using vision at all

Hearing → Incapable of using hearing at all

4. Communication of Persons with Deafblindness

The ways in which persons with deafblindness communicate vary on a case-by-case basis, according to the four types of impairments already described. In addition, the means of communication vary, depending on when the hearing and visual impairments developed, or according to which impairment developed first.

Those persons whose hearing was impaired first and then their vision, are sometimes referred to as "persons with deafness-based deafblindness". Many such persons use a means of communication similar to that used by hearing-impaired persons, such as sign language. In contrast, persons whose vision was impaired first, then their hearing, are sometimes referred to as "persons with blindness-based deafblindness". Many of them are able to communicate in ways resembling those used by vision-impaired persons, such as braille.

In addition to these types of deafblindness, there are "persons with congenital deafblindness" (those who are deafblind from birth), and "persons with acquired deafblindness" (those who were born without any impairment and have become deafblind at some point in life, due to illnesses or accidents). Some persons with deafblindness use the finger alphabet, voice-based communication, or conversational writing.

Specific means of communication are divided into six types; sign languages, the finger alphabet, braille methods, conversational writing, writing on the palm, and voice-based communication. All of these are discussed in the following section.

1) Sign languages (sign language for low vision, tactile sign language)

A person with deafblindness who is able to adequately use his/her residual vision can use ordinary sign language, which is used by many deafness-based deafblind persons. However, if the visual impairment progresses to constrict the visual field or decrease the vision, he/she will use either sign language for low vision or tactile sign language. Sign language for low vision is designed to be detected up close or be expressed compactly, while tactile sign language is designed to convey messages through touch.

Persons with deafblindness who are able to make use of their residual vision use sign language for low vision. Ordinary sign language used by deaf persons is frequently performed with large, fast gestures (Fig. 1).

In such cases, persons who have constriction of the visual field or low vision may not be able to properly read signs because some of them are performed outside the vision field, or are too fast. In addition, if the "speaker" performs signs immediately in front of the person with deafblindness on the assumption of the closer the better, some of the signs are indicated outside the vision field, because they are too close to the "listener's" eyes and consequently cannot be read properly.

Therefore, sign language for low vision should be performed within the visual field of the person with deafblindness and at a speed that allows him/her to properly read the signs (Fig.2). Before using this language, it is important to

assess the most appropriate visual distance, range and speed for a person with deafblindness.

Tactile sign language is a sign language used by persons with deafblindness who have difficulty in using their remaining vision, in which the speaker and listener hold each other's hands to read messages. Details are provided in Chapter 2.



Figure 1. Ordinary expression of sign language



Figure 2. Example of sign language for low vision.

Express a message in a compact way, so that the hands are not outside the vision field.

2) Finger alphabet

The finger alphabet is a method used to express letters with shapes, formed by using the fingers and thumb. GESTUNO (Table1) and ASL are used internationally. In Japan, there are two types of finger alphabet: the Japanese system and the Roman system. Rather than being used on its own, the finger alphabet is mostly used as a supplementary means of sign language.

As with sign language, the finger alphabet can be read by either approaching or touching. If the finger alphabet is expressed by approaching a person with deafblindness, it should be expressed at a distance and range of visual field in which the person with deafblindness can see the fingers and at a speed that allows him/her to properly read the alphabet. If the finger alphabet is expressed by touching a person with deafblindness, the speaker should gently press his/her fingers against the palm of the person with deafblindness. Normally, each participant uses only one hand. However, if two persons with deafblindness converse with each other using the finger alphabet, one of them (speaker) expresses a message while the other person (listener) sometimes uses both hands by employing his/her opposite hand (to the hand that is receiving the message)

to express a reply, also using the finger alphabet (Fig.3). The purpose of using both hands is to enable each participant to eliminate any misunderstanding.

The Japanese finger alphabet consists of approximately 50 shapes, ranging from "A" (pronounced "a") to "N" (pronounced "n"). Since persons with deaf-based deafblindness usually learn the Japanese finger alphabet as well as sign language, they mostly use the Japanese finger alphabet (Table 2,3).

However, as vertical or horizontal movements accompany some of the Japanese finger alphabet letters, the speaker's hand has to separate from the hand of the person with deafblindness, who may then miss letters. Therefore, some measures should be taken to prevent the speaker's hand from separating from the hand of the person with deafblindness, even during movement; for instance, the speaker's hand may be lightly pressed against the palm of the person with deafblindness.

In addition to the Japanese finger alphabet, a Roman finger alphabet is available, that is based on the English alphabet. Since the Roman finger alphabet consists of consonants and vowels as with braille, it is used to educate children with deafblindness together with braille, and many of those children continue to use the Roman finger alphabet even after reaching adulthood. In comparison to the Japanese finger alphabet, the Roman finger alphabet has fewer letters (only 26) and fewer vertical and horizontal movements, making it easier to identify through touch.

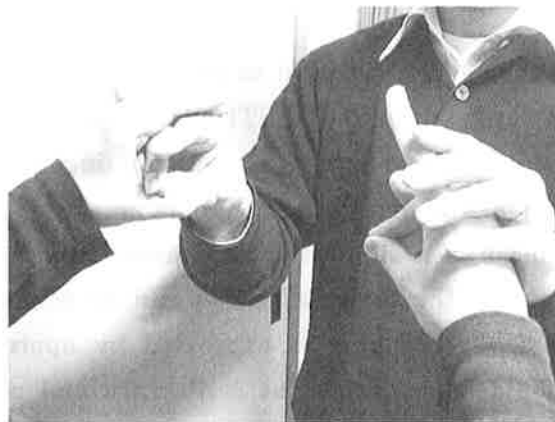


Figure 3. Example of two persons with deafblindness using a finger alphabet

Table 1. GESTUNO

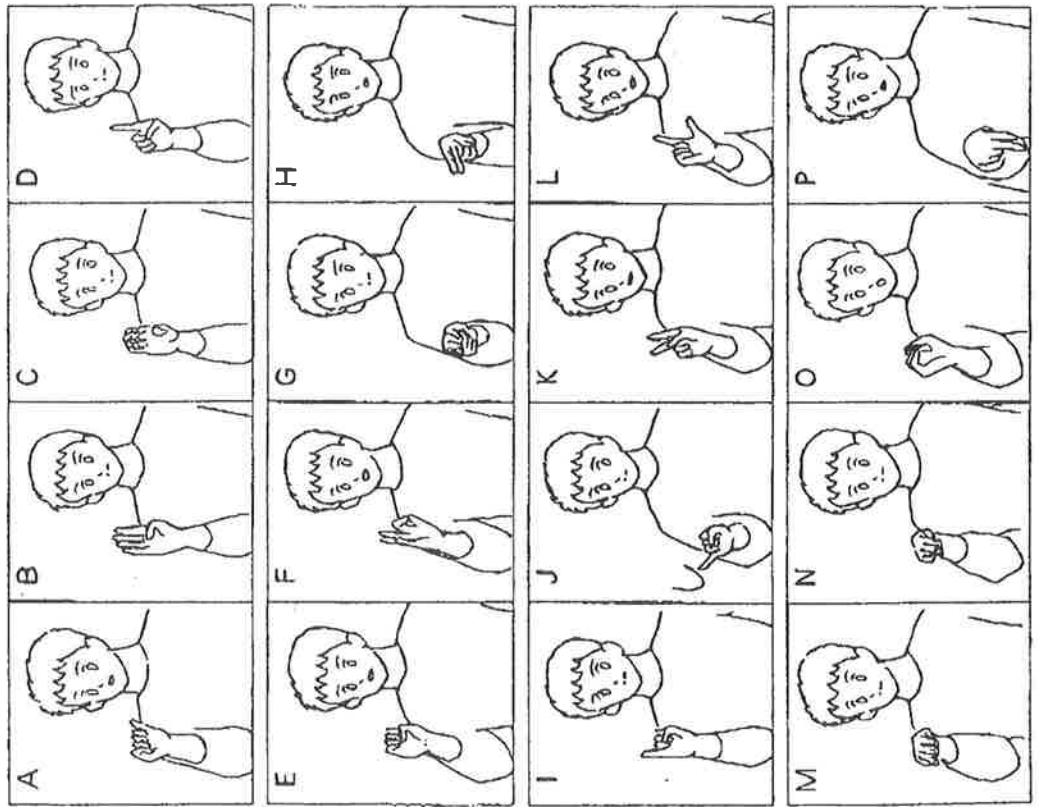
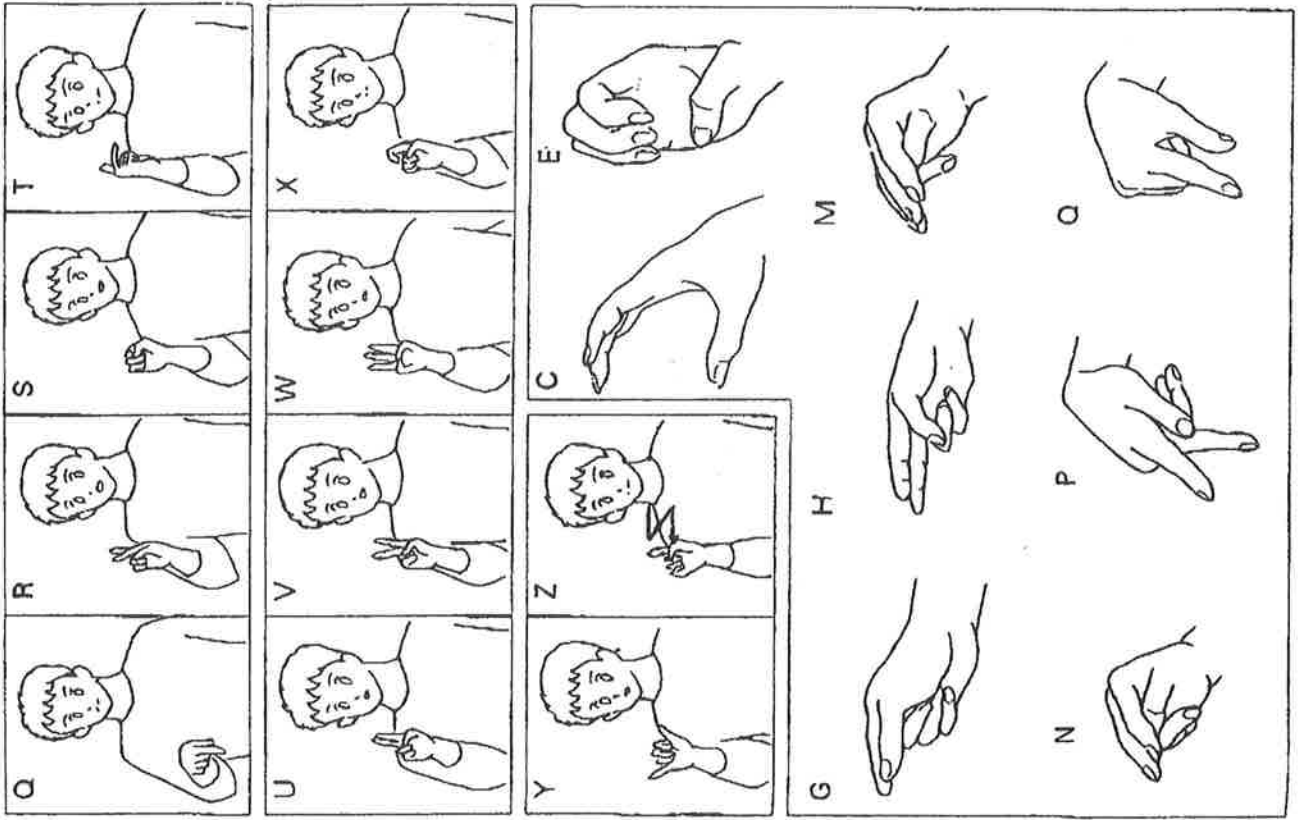


Table 2. Japanese finger alphabet

あ	い	う	え	お	ま	み	む	め	も
か	き	く	け	こ	や	ゆ	ゆ	よ	よ
さ	し	す	せ	そ	ら	り	る	れ	ろ
た	ち	つ	て	と	わ	を	ん	一 (長音)	一 (長音)
な	に	ぬ	ね	の					
は	ひ	ふ	へ	ほ					

Table 3. Roman finger alphabet

	 A	 I	 U	 E	 O
	あ	い	う	え	お
 K	か	き	く	け	こ
 S	さ	し	す	せ	そ
 T	た	ち	つ	て	と
 N	な	に	ぬ	ね	の

	 A	 I	 U	 E	 O
 H	は	ひ	ふ	へ	ほ
 M	ま	み	む	め	も
 Y	や		ゆ		よ
 R	ら	り	る	れ	ろ
 W	わ	ん --- N			を

	 A	 I	 U	 E	 O
 G	か [〃]	き [〃]	く [〃]	け [〃]	こ [〃]
 Z	さ [〃]	し [〃]	す [〃]	せ [〃]	そ [〃]
 D	た [〃]	ち [〃]	つ [〃]	て [〃]	と [〃]
 B	は [〃]	ひ [〃]	ふ [〃]	へ [〃]	ほ [〃]
 P	は ^〇	ひ ^〇	ふ ^〇	へ ^〇	ほ ^〇

3) Braille methods (Braille, Blista Braille Stenograph, Finger Braille)

Each braille letter consists of six dots. In one method of braille, letters are typed onto braille paper using a braille slate or brailier, and then a person with deafblindness reads the typed letters. The advantage of this method is that a deafblind person can read letters typed on paper at his/her own pace. However, its drawback is that it is time-consuming, because he/she has to wait until the letters are typed.

A German manufactured brailier stenograph (Blista), enables the user to output a string of letters on a 13mm wide paper tape as he/she types keys and allows a person with deafblindness to instantly read the typed letters by touching them. Blista is therefore widely used by deafblind braille practitioners. In addition, the compact size and convenience of this typewriter means that it is used in meetings and lectures (Fig. 4).

In another braille system called finger braille, the speaker uses six fingers of a person with deafblindness as brailier keys and types letters on these fingers. Specifically, the speaker places his/her left and right index fingers, middle and third fingers on the left and right index fingers, middle and third fingers of a person with deafblindness, with the speaker facing the person with deafblindness (Fig.5), or the speaker and the person with deafblindness sit side by side (Fig. 6), depending on the method by which the person with deafblindness learns finger braille. Since the listener has to read letters by tactile sense, some of those with deafblindness who have learnt braille skills are unable to read.

However, some persons with deafblindness manage to read letters if they are typed slowly. Therefore, it is important to type finger braille letters at a speed that suits the listener. No special tool is required, and if the person with deafblindness is accustomed to finger braille, the speaker can communicate a message speedily and accurately, at almost the same speed as speaking.

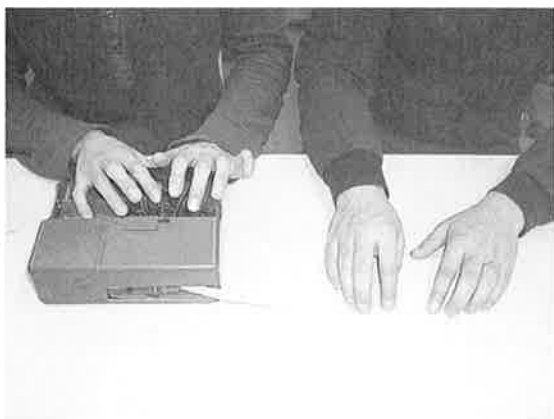


Figure 4. Blista braille stenograph

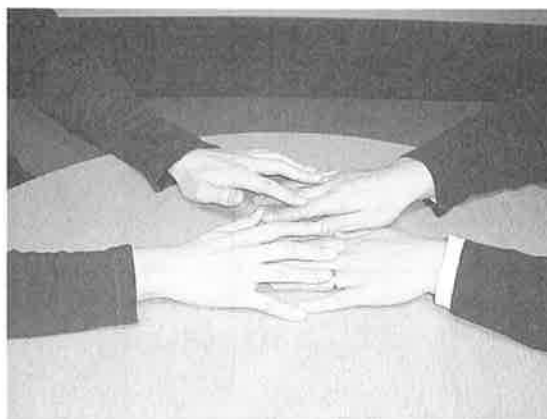


Figure 5. Finger braille (face to face)



Figure 6. Finger braille (side by side)

4) Conversational writing

Conversational writing is a method used by those persons with deafblindness who can use their residual vision. Unlike braille or sign language, which both require much time until skills are acquired, this method can be used to communicate with a person with deafblindness who is capable of reading and writing sentences. Conversational writing has to account for the size and thickness of the letters and the interval between them, according to the residual vision of the person with deafblindness. Therefore, it is important to define the size and thickness of letters that the person with deafblindness can easily read, before starting conversational writing.

The advantage of this method is that the person with deafblindness can check the conversation at a later date, since the content can be written down and stored. However, the disadvantage of this method is that it requires pen and paper as an essential element.

Alternatively, a personal computer may be used for conversational writing, instead of writing on paper. With a personal computer, the screen can be configured to enable a person with deafblindness to easily read the typed letters, by magnifying letters or changing the color of letters or the background (Fig.7).

The act of writing or entering characters requires more time than speaking.

Engaging in conversational writing over a long period of time becomes increasingly tiring, and slows the user's performance to such an extent, that the content has to be summarized. Some persons with deaf-based deafblindness are not very good at comprehending text.

Therefore, the sentences must be in simple prose.

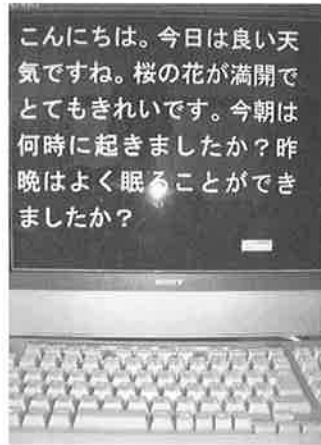


Figure 7. Personal computer
(screen with enlarged letters and modified background color)

5) Writing on the palm

Writing on the palm is the method of writing on the palm of a person with deafblindness. As with conversational writing, over a long period of time requires much energy. Thus, the speed has to decrease and the content be shortened, which limits the amount of information. However, the advantage of this method is that it can be performed anywhere and at any time, since paper and pen are not required.

There are two ways of writing on the palm; using your finger to write on the palm of the person with deafblindness (Fig.8, 9), and holding a finger of the person with deafblindness and using it as a pen to write on his/her palm (Fig.10). The types of letters that the listener can read - e.g., "hiragana" characters only, "katakana" characters only or "kanji" as well - vary depending on the person with deafblindness. It is therefore important to always check which types of letters the person can read, before starting to write. In addition, some persons with deafblindness are not accustomed to having someone write on their palms. Therefore, it is necessary to write slowly and clearly.



Figure 8. Writing on the palm
(writing on the palm of the person with deafblindness) ①
<Writing face to face with the person with deafblindness>



Figure 9. Writing on the palm
(writing on the palm of the person with
deafblindness) ②
<Writing side by side with the person
with deafblindness>



Figure 10. Writing on the palm ③
(Using the fingers of the deafblind
person as a pen)

6) Voice-based communication

A voice-based means of communication is appropriate for persons who can use their residual hearing, such as persons who have low vision and hard of hearing and persons who are blind and hard of hearing. The hearing abilities of these persons vary widely, ranging from requiring a hearing aid to help the residual hearing to being capable of hearing at relatively short distances and to managing to hear loud voices right up to the ear.

In some cases, the speaker needs to use some tool or device to make the voice louder, such as a megaphone, a microphone and a magnetic induction loop. If the surroundings are noisy, the person with deafblindness will not be able to hear the speaker's voice, and the speaker will need to speak loudly. Therefore, it will be necessary to ensure that the surroundings are quiet.

Basically, it is necessary to adjust the level and speed of the voice according to the residual hearing of the person with deafblindness, and it is important to check in advance as to which method will be the most appropriate.

As indicated above, there are various communication methods available for persons with deafblindness to receive messages. Many persons with deafblindness use several different methods, not just one. For example, if a person with deafblindness expresses a proper noun using tactile sign language, he/she uses a finger alphabet as a supplementary means. And, if a vocal conversation contains a word that is difficult to hear, the method of writing on the palm is used. It is important to select the most appropriate means of communication that meets the needs of each person with deafblindness, instead of adhering to only one method.

Thus, successful communicators need to acquire multiple means of communication in order to adapt to all circumstances.

However, it must be noted that even if someone has not acquired several different methods of communication, this need not prevent communication with deafblind persons. It is important to contact them using any acquired method. If people do not talk just because they decide they cannot do anything, they will never communicate with deafblind persons, nor deepen their understanding of deafblindness. The important thing is to do as much as one can. Such positive thinking will increase the opportunities for persons with deafblindness to talk with others.

Chapter 2.

Basic Techniques of Tactile Sign Language

1. Guidelines for Using Tactile Sign Language

Sign language originally developed as a visual language that allows persons with hearing impairment to communicate through their vision. However, persons with deafblindness, because of their visual impairment, use tactile sign language.

It is said that many persons with deafness-based deafblindness, including those who first develop hearing impairment and learn sign language then later develop visual impairment as well due to retinitis pigmentosa or because of diabetes, use tactile sign language.

When using tactile sign language, several points should be kept in mind, although these do not have to be strictly followed. It is important to consider the circumstances of each person with deafblindness.

1) How to hold the hands

The speaker and the listener (person with deafblindness) stand face to face. The listener inserts his/her index fingers between the speaker's thumbs and index fingers and lightly feels the palms or backs of the speaker's hands, as shown in the photos (Fig.11,12). Many persons with deafblindness use both hands to read. However, those who are accustomed to tactile sign language use only one hand to read, lightly feeling the palm or back of the speaker's hand.

Since the speaker's sign language involves movements, the listener needs to relax his/her hands.

If the person holds the speaker's hand too strongly, the movements of the speaker's hand will be limited and the speaker will soon become tired.



Figure 11. How to hold the hands①
(The person reading words is seen at the front)



Figure 12. How to hold the hands ②
(Opposite of Photo 11. The person expressing words is seen at the front)

2) Posture

The speaker and the listener stand (or sit) face to face while holding their hands, as described in step 1) above (Fig.13). If the person with deafblindness is able to read with only one hand, the speaker and the listener may stand or sit side by side, other than face to face.

If the speaker and the listener bend their elbows perpendicularly, instead of fully extending them (Fig.14), lightly pulling them toward the body when holding each other's hands, they can perform sign language in a natural manner (Fig.15).

If the people sit face to face, they can reduce the burden on the arms by placing the elbows on the table when performing sign language (Fig.16). Placing a soft cushion on the table will also reduce the discomfort.

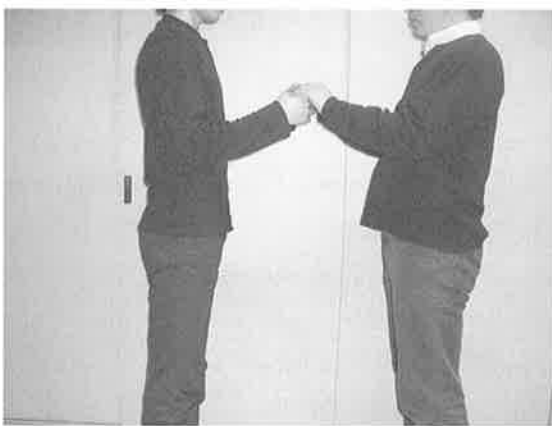


Figure 13. Standing posture
(The person expressing words is on the left while the person reading words is on the right)

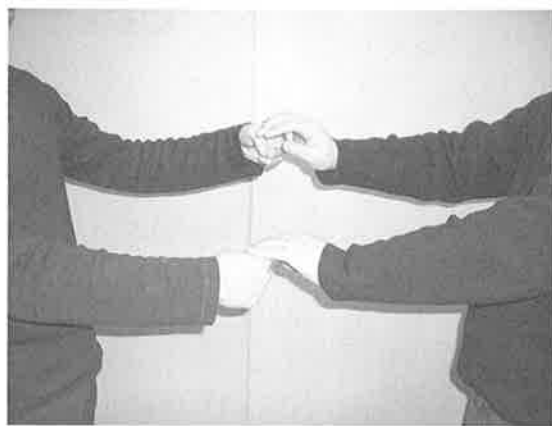


Figure 14. How to extend the arms
(This posture will cause the person to tire easily, if the arms are kept extended)



Figure 15. How to extend the arms
(Natural posture with the elbows bent perpendicularly)



Figure 16. Placing the elbows on the table reduces the strain

If the people sit face to face with their knees contacting each other, their arms will be at a distance from each other and they will have to perform tactile sign language in stressful postures while bending their backbones forward (Fig.17). To prevent such a problem, one partner opens his/her legs and the other places his/her legs between the partner's legs (Fig.18), or both people sit with their legs alternately crossing with each other (Fig.19), to keep the partners in close proximity.

However, if the distance between the partners is too close, the legs may touch, making the people feel uncomfortable; such problems should be avoided. In addition, if the speaker or listener is female, she should wear pants instead of a skirt so that she can feel secure because she has to open her legs when sitting.



Figure 17. Positions of the legs ①



Figure 18. Positions of the legs②



Figure 19. Positions of the legs③

3) Methods of expression

In principle, both people use the same expressions as with ordinary sign language. The speaker expresses his/her message in ordinary sign language (Fig.20). The speaker does not need to use the body of the listener (person with deafblindness) to express the message in a manner that differs from the ordinary method just because he/she wants to go along with the listener (Fig.21).



Figure 20. Express words in a similar manner to ordinary sign language



Figure 21. Do not use the listener's body to express words

4) Checking a sign

In checking the reaction of the listener (person with deafblindness), nodding and facial expressions are very important considerations for the speaker. As the listener is unable to see the speaker nodding or make any facial expressions, the listener sometimes worries that his/her explanation has been clearly communicated to the speaker, or repeats the explanation because his/her opinion has not been communicated to the speaker. To avoid such problems, it is important and necessary to establish a set of signs that serve as an alternative to nodding, before beginning to communicate.

Examples of signs:

For positive replies → tap the knee or shoulder twice

For negative replies → place a hand on the arm and lightly shake it twice

When desiring to stop an explanation halfway → gently place a hand on the
knee or shoulder

2. Points of Concern

There are six points to keep in mind, when using tactile sign language.

1) Express a message slowly and carefully

Ordinary sign language was designed to be checked visually; checking by touch is a stressful undertaking that may use a great deal of energy, unless the person is accustomed to the practice. In addition, if the speaker uses words too quickly that are expressed with similar finger shapes such as "go", "come", "red" and "white", the listener may misread them, leading to misunderstandings. Therefore, each word of tactile sign language should be expressed slowly and carefully.

2) Avoid large gestures

If the speaker expresses messages with large gestures in tactile sign language, the listener will also move his/her hands with large gestures in order to respond to the movements of the speaker. If the hand movements are large, the listener will feel as if he/she is forcibly pulled, will tire easily, and will have difficulty in reading the words by touching (Fig.22). Therefore, words should be expressed with movements that are within the body frame as seen from the front (Fig.23).

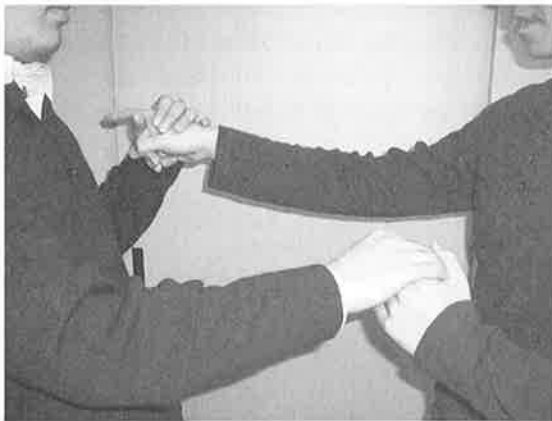


Figure 22. Large gestures will increase the strain

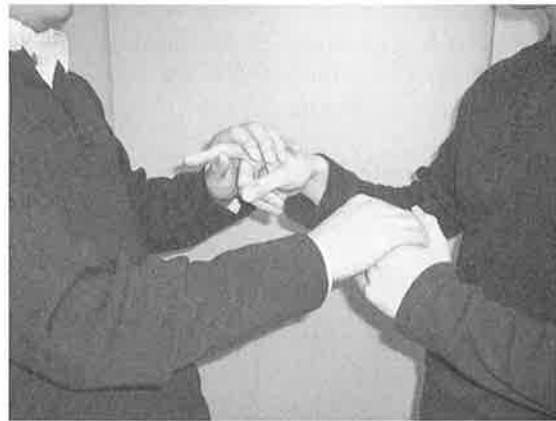


Figure 23. The same sign language as in Figure 22.

Express words in a compact way, so that the hands are within the body frame, as seen from the front.

3) Do not touch the face or body

Sign language includes a number of words that involve face or body touch such as "wait," "good at" and "fine." If the speaker performs tactile sign language carelessly, he/she will probably touch part of the body such as the nose, mouth, chest and face (Fig. 24,25).

Importantly, people may feel uncomfortable about having their face or body touched by someone else. In particular, during tactile sign language between different genders, if either party's hand touches the other's chest or body, this will cause discomfort and the conversation will become awkward.

Therefore, one should be careful about touching the other party's face or body as little as possible. The risk of touching the face or body can be reduced by imagining a virtual body in front of oneself and using this as the base for expressing a message, although this may be difficult to do for those who are not used to it (Fig.26).



Figure 24. Example of a hand directly touching the face, during ordinary expression of words

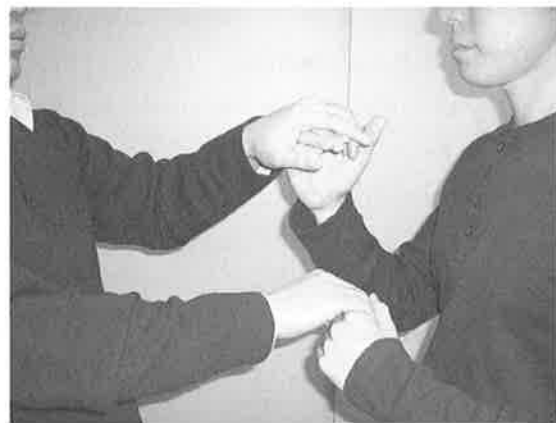


Figure 25. The same sign language as in Figure 24. Express words closer to the speaker so that the hands do not touch the face.

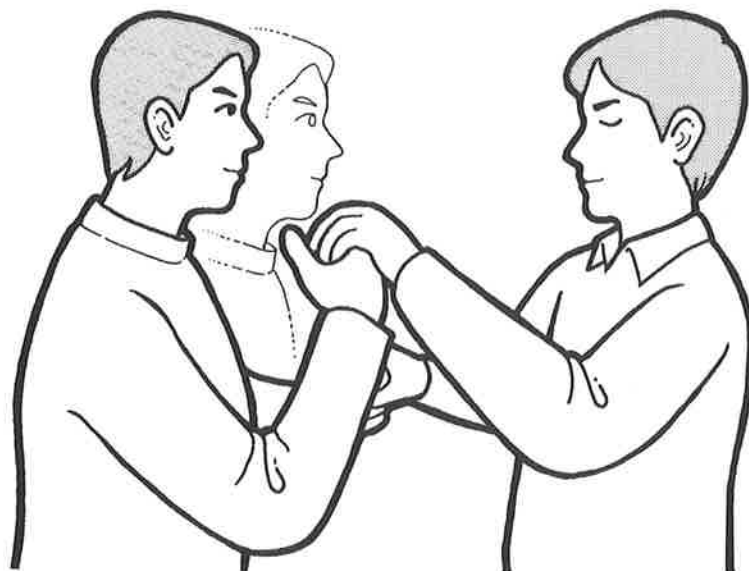


Figure 26. Express sign language by imaging virtual face and body in front of you

4) Distinguish between "Same Finger-shape" words

Sign language includes words that have single shapes but are translated into multiple meanings, such as "interpreter"/"introduction" and "vigorous"/"work hard." Normally, the listener distinguishes between different meanings, according to the context of the text. However, it is sometimes difficult to distinguish between these words, causing confusion for the person with deafblindness who is listening. In such cases, the speaker should use different expressions, apply the writing-on-the-palm method or a finger alphabet, to supplement the communication and make it easier to distinguish between the words.

There are also words with similar shapes (not the same shapes), such as "OK" and "WC (toilet)" (Fig. 27,28). As it is difficult for the listener to distinguish between these words by touching the fingers only briefly, misunderstandings may arise. Thus, it is important to clearly express the shape of each word and carefully observe the person with deafblindness who is listening, in the event that a misunderstanding is likely. In addition, it is also necessary to change from one communication method to another such as writing on the palm, whenever appropriate.



Figure 27. Example of similar expression (OK)



Figure 28. Example of similar expression (WC = toilet)

5) Distinguish between numbers and sign language/finger alphabet

The number "5" has the same shape as hiragana "a" in the Japanese finger alphabet. Similarly, the shape of the number "3" is the same as hiragana "wa" in the Japanese finger alphabet. In addition, the number "10" and hiragana "nu" in the Japanese finger alphabet have similar shapes, and the shape of the number "2" is similar to that of hiragana "u" in the Japanese finger alphabet. Therefore, if the speaker expresses numbers, the listener may misread them (see the table).

Example: If numbers "5 and 3" are expressed → "a-wa" (bubble)

Similar confusions are seen with Japanese sign language.

Example: Number "50" → means "elderly man" in Japanese sign language

To prevent such mistakes when using numbers, the speaker should initially slow down and indicate that he/she is about to express a "number" in sign language, then slowly express the number so that the listener can easily read it.

6) Keep yourself clean

Since tactile sign language necessitates the partners to touch hands, the speaker must start with clean hands. They should also be thoroughly dry, to avoid wetting the listener's hands. In addition, any long fingernails should be trimmed in advance, to avoid scratching and hurting the listener's hands.

Working in close proximity when using tactile sign language may mean that one party is bothered by the other person's breath or other body smells. Speakers should be aware of strong smells such as perfumes and ensure that their teeth are clean.

Chapter 3.

Techniques for Conversations with Persons with Deafblindness

When using tactile sign language in a conversation with a person with deafblindness, the following points should be kept in mind.

1. Introduce Yourself

A person with deafblindness will be bewildered by sudden conversation, because the speaker is not already identified. In one instance, a speaker continued a conversation without giving his name and felt that the listener was not talking about the same topic, when he finally realized that the person had mistaken the speaker for someone else. To avoid such confusion, an introduction is necessary when you start conversation with a deafblind person.

When meeting a person with deafblindness for the first time, it is important to give your name, gender, age and information as to whether or not you have any hearing or sight impairment, as well as any other necessary characteristics, to enable the person to easily imagine a likeness. In addition, assigning each person an easily recognizable sign name will help them to easily begin conversation.

2. Clarify a Change in the Topic

When changing the topic during conversation, a special expression should be inserted to help the listener easily recognize the change, such as "by the way" (this expression introduces a new subject), or "to change the subject". Inserting such an explanation will make it easy for the listener to read the speaker's message.

3. Describe the Surroundings

Without enough appropriate information, persons with deafblindness will have difficulty in grasping the circumstances. Sometimes, they speak loudly in a situation where others keep quiet, or continue with small talk without recognizing that a meeting has started. If such an incident occurs, others may think that persons with deafblindness have bad manners. It may therefore be necessary to describe the surroundings to them.

4. Ensure Privacy

The disadvantage of tactile sign language is that the privacy of the person with deafblindness may be compromised, since the conversational content, including any personal matters, is easily visible to others. Observers of the person tactile signing should not stare at the content of the conversation, even if the person with

deafblindness would not notice. Above all, it is essential that nothing is conveyed about the conversation to any third party, without the consent of the deafblind person.

In addition, someone else may observe and reveal the content of tactile signing that is meant to be kept private. If such an incident occurs, this may cause some unhappy event, such as the deterioration of a human relationship. Therefore, anyone performing tactile sign language with a deafblind person should pay attention to the surroundings and ensure that person's privacy.

5. Take a Break During a Long Conversation

Since tactile sign language involves movements of the hands of both people overlapping with each other, the participants will become tired if the conversation lasts for a long time. Persons with deafblindness vary widely as to how long it takes for them to feel tired; it may be 30 minutes, one hour, or even three hours. Tiredness prevents concentration on the conversation. Therefore, if the deafblind person seems tired, take a break whenever necessary.

6. Before Leaving the Site, Provide the Person with Deafblindness an Explanation

If someone is about to leave the site after finishing a conversation with a deafblind person, this must be communicated to that person. Leaving without saying anything may lead the person with deafblindness to think that "he/she still has work to do ..." or "he/she did not want to say goodbye to me" and lose faith in the speaker or feel isolated. Similarly, the reason for any temporary absence (e.g., for a toilet break) should be communicated to the person with deafblindness and the expected length of absence, to put the person at ease.

7. Be Sensitive to the Pace of the Person with Deafblindness

As described above, communication through tactile sign language takes time. In particular, when the person with deafblindness is not used to tactile sign language, he/she will feel frustrated by the inability to read, and/or may refuse to communicate with others due to a sense of failure. To avoid such situations, it is important to adjust the pace of tactile signing to each person with deafblindness.

8. Respect the Position of the Person with Deafblindness

Without appropriate information communicated by those around them, persons with deafblindness will have only passive contact with others. In addition, proceeding without regard for the opinion or thought of the person with deafblindness, because of not wanting to take the necessary time to clarify them,

is disrespectful of the deafblind person's personality. It is very important to respect the deafblind person's right to self-determination and to be supportive, so that he/she can act responsibly, with appropriately provided information and communication.

Chapter 4.

How to Proceed with Tactile Sign Language Training

1. Guidelines for Conducting Training

When training persons with deafblindness who have not previously experienced or are not accustomed to tactile sign language, the following points should be borne in mind during the training.

1) Remove anxiety

Some persons with deafblindness need training in tactile signing in order to shift from "visual" sign language to "tactile" sign language, because their vision has deteriorated. They are worried about vision deterioration and tactile sign language. They may also feel resistant about touching others or about being touched by others. Therefore, it is essential to remove anxiety before starting training. It is important that they be encouraged to understand that tactile sign language is a useful means of communication that allows them to read messages by touching.

2) Begin with familiar topics

In line with the description in point 1) above, it is important to start training with familiar topics such as greetings, families and hobbies, so that persons with deafblindness will accept the use of tactile sign language without anxiety. This will help them to read messages easily and give them a sense of security.

3) Do not rush

Persons with deafblindness may remain psychologically resistant to the concept of understanding by touching, before they are accustomed to it. Therefore, care must be taken to express words slowly and training should proceed at a slow pace, so that they will be able to accept it without feeling frustrated.

4) Take a break

The act of reading through touching is stressful and tiring, even if it is completed within a short time. If a person with deafblindness is tired, his/her reading ability will decrease and he/she may become frustrated because of this inability to read, which may lead to a sense of rejection for tactile signing. Taking regular breaks during a one-hour training period, such as a 3-minute break after the student finishes reading a short sentence, or a 2-minute break every 10 minutes, will help the training to be effective.

2. How to Proceed with Training

1) Introduction

Explanation of basic movements:

Since persons with deafblindness who are receiving training have not experienced tactile sign language or have experienced tactile sign language but are not accustomed to it, it is necessary to have them acquire the knowledge about tactile sign language such as how to hold the hands, basic postures, methods of expression, checking a sign, etc. at the introductory stage.

2) Time of training

Conducting training every day is an effective way of helping the student become accustomed to tactile sign language. If training sessions are too lengthy, the student will become tired, so each lesson may be limited to one hour. It is important for the student to become accustomed to reading by touching. The student can learn tactile sign language more effectively if he/she spares the time for reading by touching someone's hands during everyday life in addition to the formal training period.

The training period should suit the situation and conditions or objective of the person with deafblindness, such as one month, three months, or six months.

3) Items of training

When conducting training, items ① to ⑧ listed below are provided as topics. It is advisable to start with item ①; the order of ② to ⑧ may be modified, depending on the person with deafblindness. However, the order is not obligatory.

① Greetings

Good morning, good afternoon, good evening, thank you, I am sorry, etc.

② Self-introduction

Name, age, family members, place of birth, marital status, etc.

③ Hobbies

Sport, travel, movies, book reading, etc.

④ Daily life

Time of awakening/bedtime, actions per day, how to spend holidays/weekends, etc.

⑤ Meals

Content/time of breakfast, lunch and dinner, skills with any culinary dishes, etc.

⑥ Job, school

Content of the job/study, name of the company/school, working hours, homecoming time, etc.

⑦ Health

Illness, alcohol, smoking, etc.

⑧ Transportation

Means of transportation used, etc.

4) Evaluation

After finishing the training, carry out an evaluation. Prepare sets of words, short sentences and long sentences according to the training items described above, instruct the student to read them, and check the student's accuracy. For any items that the student was unable to read, provide him/her with a refresher class as necessary.

If the initial evaluation is carried out, prior to the training, using the same words and sentences given during the final test, the trainer will be able to effectively evaluate the training.

3. Summary

When I once asked persons with deafblindness who use tactile sign language about the length of time it took them to acquire the skill of reading by touching, their replies varied from between three months and one year, three years and five years. Although the learning period varies depending on the person's age, finger senses and instinct, no one can learn tactile reading overnight. These skills can be acquired only through repeated experience.

Therefore, even if training is given to a person with deafblindness, it is not guaranteed that he/she will become adept at reading. Training is only a start for persons with deafblindness to become accustomed to tactile sign language, and it is most important first of all to encourage them to gain confidence.

The method for training provided here is designed for those persons with deafblindness who have already acquired sign language when they were still able to see things. If a person with deafblindness has seen sign language and remembers it, he/she can visualize words in his/her head, and therefore it is relatively easy to read by touching.

When a person with deafblindness who has not had any prior experience with sign language encounters it for the first time, he/she cannot predict each hand movement and cannot even visualize them, which makes reading by touch very difficult. The trainer has to teach persons with deafblindness by holding their

hands not only when they read by touching, but also when they express words by themselves.

The points to keep in mind when using tactile sign language are laid out in this document. However, the most appropriate methods for teaching those persons with deafblindness who have not "seen" sign language remain to be established. This is a subject for future research.

Conclusion

Although this rehabilitation manual describes tactile sign language, it does not recommend tactile sign language as the best means of communication for persons with deafblindness. As indicated above, not all persons with deafblindness have acquired tactile sign language, and the means of communication that persons with deafblindness have acquired vary, according to when they became deafblind, their level of deafblindness, education and family environment. There are various means of communication for persons with deafblindness, and when making contact with a deafblind person, it is most important to select a means of communication that meets the needs of that individual.

The recent spread of personal computers has been remarkable, and persons with deafblindness have also become able to use personal computers by using extended letters and pin displays. If persons with deafblindness could communicate via e-mail, it would reduce the difficulties they face in respect to moving about and their financial burden, making it possible for them to communicate easily with other people. In addition, using the Internet would enable them to acquire information by themselves. As technologies advance and various tools including personal computers become widespread, the opportunities for persons with deafblindness to participate in society will increase.

In Japan, however, the systems and social resources for persons with deafblindness remain inadequate and few people know about the existence of them. Nonetheless, various local deafblind organizations have recently been established in many regions in Japan, and a means of supplying interpreters/assistants for deafblind persons has recently started. Thus, social awareness about those with deafblindness is gradually increasing.

At last, the opportunities for persons with deafblindness to participate in society are increasing. However, it does not mean that basic knowledge has spread about deafblindness. Therefore, it is necessary to educate the general public about deafblindness, and I hope that you will use this rehabilitation manual as part of that education.

References

- 1 Fukushima, S. Hearing with Fingers - Record of Young Man Satoshi Fukushima who is Deafblind. Shoraisha,1988, p218.
- 2 Fukushima, S. Persons with Deafblindness and Normalization. Akashi Library ,1977, p332.
- 3 Kojima, S. Learn Together, Live Together - The World Opened through Braille and Sign Language. Kindai-bungeisha , 1994, p229.
- 4 Kojima, S. Following Persons with Deafblindness. Kindai-bungeisha, 2001, p164.
- 5 Shin, Y. Independence and Social Participation of Persons with Deafblindness. Shinkansha, 2005, p204.
- 6 Interpretation/Assistance Manual for Persons with Deafblindness.Zenkoku Morosha Kyokai (Japan Deafblind Association), 2003, p48.
- 7 2005 Interpreter Training Workshop for Persons with Deafblindness. Zenkoku Morosha Kyokai (Japan Deafblind Association), 2005, p56.
- 8 Leaflet on Person with Deafblindness - For Deepening the Understanding of Persons with Both Visual and Hearing Impairments, NPO Tokyo Morosha Tomonokai (Tokyo Deafblind Club), 2002, p28.
- 9 Feature Article Communication Methods for Persons with Deafblindness. Vol. 13, 1996, Autumn Issue, Communica (information journal for persons with deafblindness). Zenkoku Morosha Kyokai (Japan Deafblind Association) ,1996, p92.
- 10 Ichibangase,Y. The National Research Association for Sign Language Interpretation. ed. Persons with Hearing/Linguistic Impairment and Communication. Hitotsubashi-Shuppan , 2000, p225.
- 11 Portrait of Persons with Deafness in the 21st Century" Editorial Committee. ed. Portrait of Persons with Deafness in the 21st Century. the Publishing Bureau of the Japan Federation of the Deaf, 2005, p273.

Quoted literature

- 1 Japanese Federation of the Deaf. ed.. Handbook of International Sign. 2002, p48-49.