Presentations by People with Severe Visual Impairment in Japan—Current Issues

Hiroshi KATOH[1)], Hideji NAGAOKA[1)], Nobuyuki OHTAKE[1)],
Martin E. PAULY[3)], Ryosuke FUJII[2)],
Toshihiro KANAHORI[1)] and Masami ONOSE[3)]

[1)]Research Center on Higher Education for the Hearing
and Visually Impaired Tsukuba College of Technology
[2)]Department of Acupuncture/Moxibustion, Tsukuba College of Technology,
[3)]Academic Affairs Second Section, Tsukuba College of Technology,

Abstract: In modern society competence in giving presentations is required more and more by professionals, regardless of their occupation. Blind professionals also face the challenge of having to make presentations in their workplace and in the community. In July 2004 we surveyed the use of IT by blind professionals for the preparing and delivering of presentations. Sixty-nine blind people responded. Subjects of the survey included acupuncturists, school teachers, college professors, office workers, and other professionals. One third of them do presentations using a computer, either by themselves or with an assistant, e.g., class lectures, speeches, and addresses in meetings. We found that although some severely visually-impaired people are using the PC for presentations, difficulties, i.e., insufficient access tools, still exist for those who would like to independently prepare and give a presentation, thereby mandating the need for sighted assistance. The function they mostly want to be built into presentation software for the blind is the capability of adding on-the-spot comments during the speech. Presenters who do not use presentation software now acknowledge the necessity of getting presentation software into their work environment. We are developing new software to rectify this situation.
Key Words: People with Severe Visual Impairment, Presentation, PC, Survey

Introduction

In the past people with severe visual impairment have depended on oral communication to reach the sighted. However, in recent years the situation has been changed significantly by the PC and the use of the Internet. As word processing software and screen reading software for the visually impaired were developed in the middle of the 1980's, it became possible for the blind to make (and transmit by electronic media) printed documents (including kanji) by themselves.[1,2] Furthermore, email has come to be used widely for communication between blind and sighted people. To some extent, by these means, blind people now can actively put out information.

For presentations however, there still remain some hurdles for visually-impaired

people. As a presentation is a direct and real-time transmission to the receiver, information must be precisely conveyed, in a limited amount of time, requiring the recipient to respond and act upon the information. [3]

Conventionally, blind people gave presentations orally. When visual or graphical information was necessary, assistance was often required. Even if presentation devices, e.g., OHP, slide projector, were used by the blind, difficulties such as real-time correction and revision were somewhat difficult.

In light of this background, some blind teachers and professionals in various fields have recently come to utilize the PC and presentation software. Even in difficult circumstances, in order to catch up with modern presentation techniques, blind persons are encouraged to improve their presentation skills, thereby increasing social participation. This endeavor is indispensable for the maintenance and development of occupational professionalism for people with severe visual impairment.

2. Survey Study

2.1. Purpose of the Survey

As it is important that even people with severe visual impairment have the ability to give high-quality presentations to the sighted, the preparation of effective tools and the establishment of techniques to handle visual information without using sight, are necessary. It is indispensable to get a grasp of the present conditions and problems surrounding presentations by people with severe visual impairment in order to develop presentation assistive software.

2.2. Subjects of the Survey

We decided to limit subjects of the survey to severely visually-impaired adults having occupational and social experience. For the selection of subjects, we consulted the following lists.

(1) Teachers of Acupuncture and Moxibustion Courses in schools for the blind
(2) Visually impaired who graduated from higher education institutions
(3) Information processing engineers with visual impairment

We asked for the cooperation of associations of the blind, and attended study circles of people with visual impairment, e.g., staff of public libraries who are visually impaired, visually-impaired teachers in public schools. We also advertised in mailing lists for/of the blind.

2.3. Survey Procedure

The research was based on a survey. We sent a questionnaire to individuals and organizations which accepted the role of recommending respondents, and collected the answers from June to July, 2004.

We mainly used email for the delivering and gathering of the questionnaires but also sent Braille documents or printed documents. The questionnaire consisted of questions related to, "conditions of giving presentations", "usage of PC", and "attributes of respondents".

3. Results and Discussion

We sent questionnaires to ten organizations, e.g., the Division of Acupuncture in

schools for the blind, and also forty professional individuals with severe visual impairment. We received sixty nine replies.

3.1. Attributes of Respondents

All sixty nine respondents met the necessary conditions for subjects of the survey.

(1) Age Distribution

Age distribution of respondents is shown in Table 1. Average age was 43.7 years old.

(2) Distribution of Levels of Visual Impairment

Sixty four participants were classified as Grade 1, i.e., totally blind or severely visually impaired, and five as Grade 2.[4]

(3) Methods for Text Processing

Table 2 shows the methods of text processing used by respondents in daily life. Blind persons use various channels for the gathering and delivering of text-based information.

In "Others", the use of 'the Optacon' (touch reading machine) was included.

(4) Occupation /Jobs

The types of job held by respondents are shown in Table 3. High school teachers

Table 1 Age Distribution of Subjects

Age	Number of Subjects
1. 20-29	8
2. 30-39	23
3. 40-49	10
4. 50-59	21
5. 60-69	5
6. 70-79	1
7. unknown	1

Table 2 Methods of Text Processing Used (multiple answers possible)

Method	Number of Responses
1. Braille	64
2. Printed characters without any assistive aids	0
3. Reading and writing printed characters with lenses	2
4. Reading and writing printed characters with CCTV	4
5. Reading and writing printed characters (using sight) with PC	3
6. Reading and writing printed characters (without sight) with PC	64
7. With support of sighted people	62
8. No reading and writing of printed characters at all	11
9. Using recording aids together with text	38
10. Using only recording aids	0
11. Others	7

and college professors are included in "Teacher/Professor," as are teachers of schools for the blind. "Instructor" means a staff member in a social or public agency. For "office worker", concrete answers were offered, e.g., business/planning /managerial staff, librarian. A computer-affiliated engineer responded as "technical officer." A musician, a part-time teacher, and an unemployed person answered "Other" for his/her job.

3.2. Use of PC

Sixty eight (98.5%) of the sixty nine respondents used a computer.

(1) Operational System for PC

Among people with visual impairment Windows is overwhelmingly used. As shown in Table 4 however, DOS is still commonly used.

(2) Assistive Software

Table 5 shows the number of users according to each product. Fifty three (77.9%) of the 68 PC users use several kinds of screen-reading software.

All reading software in Table 5 is for the Japanese-language version, but six respondents use English software (basic software, screen reader, application software) for English usage.

(3) Application Software

As shown in Table 6, document processing software (word-processing software and text editor), e-mail software, and Web browser, and spreadsheet are used.

Table 3 Type of Job

Type of Job	Number of people
1. Teacher/Professor—30	
2. Instructor—2	
3. Massage Therapist, Acupuncturist—2	
4. Office worker—17	
5. Technical officer—12	
6. Staff in social welfare system—2	
7. Other—4	
Total—69	

Table 4 Basic Software Used (multiple answers possible)

Basic Software	Number of Responses
1. DOS—31	
2. Windows95—8	
3. Windows98 system—46	
4. WindowsNT—0	
5. Windows2000—18	
6. WindowsXP—52	
7. UNIX system—6	
8. MacOS—0	
9. Others—2	

3.3. Present Conditions of Giving Presentations by Respondents

For calculating the number of presentations by the blind, class lectures were included.

(1) Necessity to Give Presentation

As shown in Table 7, we found that 85.5% of blind professionals (59 respondents) have felt the need of giving a presentation.

(2) Classification of Presentations Given

The types of presentations which respondents gave in the past five years are in the following order of frequency; class lecture, guidance, keynote speech, presentation at academic conference, report, negotiation, etc.

Some respondents offered specific examples; "guidance" includes instructions for Braille translation to volunteers, "report" means to give a report in an office meeting,

Table 5 Assistive Software Used (multiple answers possible)

Software	Number of Responses
1. Screen readers for DOS	30
2. 95Reader	43
3. PC-Talker	40
4. VDM	21
5. outSPOKEN	6
6. JAWS	18
7. Win-Voice	5
8. ZoomText	3
9. Others	4

Table 6. Applied Software Used (multiple answers possible)

Types of Software	Number of Responses
1. Document processing software	62
2. Spreadsheet	49
3. Web browser	59
4. E-mail software	62
5. Program developing software	12
6. Multimedia software	29
7. Others	16

Table 7 Necessity to Give Presentation

Necessity	Number of Responses
1. "I felt the need to give a presentation/I actually gave a presentation."	59
2. "At present I feel no immediate pressure to give a presentation, but feel the possibility of the necessity in the future."	7
3. "There is no need for me to give a presentation."	0
4. "Others"	0
5. "No answer"	3
Total	69

"explanation" is explaining the budget in a meeting, "negotiation" includes proposals to public agencies.

(3) Methods of Presentation

As seen in Table 8, more than half of the presenters with severe visual impairment make oral presentations only, and there are many cases in which handouts are distributed. To some extent PC use by a subject's own effort is done, but dependence on a supporting person is still high.

(4) Reasons for Not Showing Visual Information in a Presentation

Forty six respondents answered that they have given only oral presentations. The reasons why they do not use printed matter or PC are as follows, e.g., "no need to distribute", "no time for preparation, "no assistance for making documents", "not competent for making documents."

(5) Preparations for Document

Fifty three respondents distributed handouts for their presentations. Table 9 shows how blind people make printed documents. From this, it is shown that dependence upon a supporting person is critical for preparing materials.

(6) Difficulties and Problems in Giving Presentation

For giving presentations, fifty four respondents answered that they feel some kinds of difficulties. We classified the problems that they enumerated into four categories. Concrete comments and opinions follow.

Table 8 Methods and Received Support for Presentation (multiple answers possible)

Method/Support	Number of Responses
1. "I have done it only by an orally."—46	
2. "I wrote it on a blackboard by my own effort."—13	
3. "I operated the PC by my own effort and I input letters at the place and showed it."—18	
4. "I asked a supporting person for a blackboard demonstration."—19	
5. "I delivered printed handouts that I made beforehand."—53	
6. "I showed slides and OHP sheets which I made beforehand by my own effort"—3	
7. "I showed slides and OHP sheets which were made beforehand by a supporting person"—16	
8. "I operated the PC by my own effort and conducted the show."—21	
9. "I conducted the show with the assistance of a supporting person."—10	
10. "Others"—10	

Table 9 Methods of Making Handouts (multiple answers possible)

Method	Number of Responses
1. "I prepared only the text and tables in a plain form by my own effort."—21	
2. "I prepared visual documents of various forms by my own effort entirely."—2	
3. "I wrote the manuscript, and depended on assistance for the formatting and handling of graphic items."—39	
4. "I just decided contents of presentation, but did not do the work by myself."—4	
5. "Other."—4	

(a.) Inconveniences related to the handling of visual information
1. Inconvenience in drawing pictures and figures at the place.
2. Difficulty in revisions and correction in real time.
3. Listeners' attention tends to be rather obstructed by referring media.
(b.) Problems with oral presentation
1. There are contents which are difficult to convey only by speech.
2. Concentration of listeners does not last.
(c.) Problems about assembling and progress of presentation
1. I do not understand what is considered a good presentation by sighted people.
2. It is difficult to operate a PC while simultaneously reading Braille notes.
3. It is hard to grasp the reaction of the audience.
(d.) Problems in preparation of documents
1. Knowledge about graphical documents is limited.
2. Making of electronic documents is difficult.
3. Understanding and grasping of images and pictures are difficult.
4. There are not tools for making documents at hand.

(7) Expected Functions Incorporated in Presentation Software

The following are functions that people with severe impairment wish to be attached to presentation software. These are shown in Table 10.

3.4. Our Targets Based on the Blind People's Opinions about Presentations

About ninety percent of blind professionals (61 of 69 respondents) recognize the importance of presentation, and they think that even the severely visual impaired should make presentations.

Next, we offer the following brief summary of representative opinions about related by 55 people (79.7%) of 69 respondents about presentations by blind people. We will be able to extract targets from these opinions for developing new presentation software.

a. Regarding Presentation Skills

The importance and utility of giving presentations are sufficiently understood by people with severe visual impairment. In addition, it is strongly recognized that this skill is required at one's place of occupation. Development of a special program for presentations by people with severe visual impairment is necessary immediately.

b. Regarding the Presentation of Visual Information

It is realized by most of the respondents that even for blind speakers, it is hard to be permitted anymore in a company workplace to give a presentation without visual

Table 10 Expected Functions for the Presentation Software

Function Expected	Number of Responses (multiple answers possible)
1. Editing letters and words in the presentation documents at the site	51
2. Showing and adding numerical formulas and figures at the site	32
3. Random access to words, tables, and pictures	53
4. Random access to numerical formulas and figures	30
5. Easy showing of graphics and movies which were prepared beforehand	44
6. Others	10

information. At the same time, there is a strong opinion that blind presenters must not make light of oral presentations and oral expression.

c. Regarding Presentation Support Software

There is much agreement regarding the necessity for pointing to particular words and image showing documents precisely. A function that can access visual documents by Braille is also expected.

In addition, ease of operation is regarded as most important and therefore there is the expectation of the development of exclusive-use software for the blind, that is not simple voice operation assistance for general presentation software.

d. Regarding Independence from Support Personnel

Dependence on a support person is considerably high for the preparation and giving of presentations under present conditions. However, not only is the finding of a person of assistance difficult, but also blind are aware that excessive dependence on assistance is unfavorable, and there are expectations for the development of software for expansion of processes which blind people can do by themselves.

e. Regarding Expansion of Learning Opportunity and Skill Acquisition

For the blind people by themselves, there have been strongly thought that the expression and their knowledge of visual information are very poor. Therefore an opportunity of learning about the visual arrangement of information and presentation skill are expected by much of blind professionals.

References

[1] Fukui T., The information technology for people with visual impairment — "Ayumi (The past)" and Problems, Proceedings for TEC 21 international seminar work of assistive technology for people with visual impairment, 23-32 32, Japan Vocational Development Center for the Blind (1998) (in Japanese)

[2] Watanabe T., *Windows Screen Reader and the Internet User Survey 2002.* The Natl. Inst. of Special Education Report D-190, 2003.(in Japanese)

[3] N & S Learning Definition of Presentation Skill [online] Available: http://www.nands.net/presen.html (in Japanese)

[4] Ministry of Health, Labour and Welfare, Law for the Welfare of Physically Disabled Persons (a separate table) (2002)

Acknowledgements: This research was conducted by support from the Eleventh Research and Development Furtherance of the Matsushita Education Study Foundation. We would like to heartily thank the Foundation and the respondents who cooperated with the project survey.