

Staff Sign Skills Assessment-Development at the Michigan School for the Deaf: Achieving an Important Need

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The importance of shared responsibility for communication between deaf students/clients and the professionals who work with them is stressed. A program to promote effective communication between Michigan School for the Deaf (MSD) students and staff is then discussed. This program focuses on (a) assessment of staff and staff applicants' sign language communication skills via the Sign Communication Proficiency Interview (SCPI), and (b) follow-up sign language skill development opportunities for staff based on results of this assessment. Data showing improvement of MSD staff sign communication skills since initiation of SCPI use is reported, and the need for further data collection and analysis to determine the influence of sign skill development opportunities and the influence of hiring practices on this improvement is discussed.

In the late 60's and early 70's educational programs for Deaf students began to embrace "Total Communication" in their efforts to improve student success. "Total Communication" was initially recognized as "the right of a deaf child to use all forms of communication available to develop language competence. . . ." while the rights of the Deaf child are finally recognized, the responsibilities of teachers to improve their own communication abilities are largely overlooked. (Cokely, 1980, p. 138)

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Cokely's concern recognized the critical need for educational and rehabilitation personnel to share with their deaf students and clients the responsibility for improved communication. In a similar vein, Vernon (1986) called for a movement to assess teachers' competency in sign communication similar to recent movements to assess teachers' competencies in mathematics and English. In support of this, Vernon explained, ". . . how can a teacher correct a child's English if the child lacks intelligible speech and the teacher is not fluent in manual communication? By contrast, teachers who know sign language can grasp what the student signs, and they can provide the student with the English equivalent" (p. 201). Also, in support of this need and its importance, Caccamise, Newell, Fennell, and Carr (1988) stressed that research on the sign language communicative competence of many deaf and hard-of-hearing people:

. . . offers both an **opportunity** and a **challenge** to those of us who work with deaf and hard-of-hearing students and clients . . . that is, the opportunity to use the sign communication skills of students/clients to assist in achieving academic and vocational goals, and the challenge to develop and effectively use our potential for sign communication skills. (p. 1)

Fortunately, for deaf students/clients and professionals who work with them, there is growing recognition of the importance of sign language communication skills for professionals. For example, Nash (1986) reported that among criteria used in hiring teachers for deaf students, sign language proficiency was considered important by the majority of school administrators. Even more fortunately, an increasing number of school administrators are recognizing (a) the important need of all school staff who have contact with deaf students to have sign language communication skills, and (b) the responsibility of their schools to support and provide opportunities for staff to develop their sign language communication skills.

Michigan School for the Deaf (MSD) responded to this important need and responsibility by implementing a staff sign language communication skills assessment-development program. This article provides information about this MSD staff program, including: (a) a brief description of the sign language communication skills assessment instrument used in this program, the Sign Communication Proficiency Interview (SCPI); (b) a description of sign language communication skill development opportunities provided for MSD staff based on the results of their SCPI assessments; and (c) data collected on the sign language communication skills of MSD staff following the initiation of SCPI use.

THE SIGN COMMUNICATION PROFICIENCY INTERVIEW (SCPI)

The SCPI is a direct, integrative assessment of a person's/candidate's receptive and expressive skills in using signing for communication. Each candidate is interviewed in a one-to-one conversational format by a proficient signer, with a focus on the work and social communication needs of each candidate; that is, using a one-to-one conversational format the SCPI assesses how well candidates

are able to *use signing* to comprehend and respond to questions about their specific work and social needs. All SCPIs are videotaped and subsequently rated independently by three skilled raters using the SCPI Rating Scale (see Appendix A), a standard scale based on a knowledgeable, native-like signer. This scale is used to rate signing along the natural sign language continuum of American Sign Language (ASL) to meaning-based, English-like signing.^{1,2} In addition to receiving an SCPI sign communication skill level rating, each candidate is provided (a) an opportunity to discuss her/his sign language communication strengths and suggestions for improving sign skills with a sign communication specialist, and/or (b) a written summary of her/his current sign language communication skills and recommendations for developing/improving sign communication skills. (See Appendix B for a sample SCPI report.) For additional information about the SCPI, including discussions of SCPI validity and reliability, please see Caccamise and Newell (1990) and Newell, Caccamise, Boardman, and Holcomb (1983).

MSD SIGN LANGUAGE COMMUNICATION SKILLS ASSESSMENT-DEVELOPMENT PROGRAM

MSD Total Communication Policy and Staff Sign Skills

MSD began using the SCPI in the spring, 1986. MSD's Total Communication Policy was later approved by the Michigan State Board of Education (Updegraff, 1986). This policy includes: (a) recognition and support for the use of both ASL and meaning-based, English-like signing in all aspects of the MSD program; (b) provision for the SCPI as the official sign language communication assessment

¹We use meaning-based, English-like signing to refer to signing characterized by meaning-based sign vocabulary, English word-order (primarily), and grammatical features of effective gestural-visual communication. These gestural-visual grammatical features include (a) use of space for persons and objects present and not present, (b) use of directionality and pronoun incorporation with verbs, (c) inflection of noun and verb sign vocabulary movements to include adjectival and adverbial information, (d) number incorporation with nouns, (e) use of space and movement for singular versus plural, (f) use of classifiers, and (g) appropriate use of non-manual features such as facial expressions and body shifts. Traditionally these sign grammatical features have been associated with American Sign Language (ASL) only, however, research conducted by Kluwin (1981a, 1981b), Livingston (1983) and others supports that these sign grammatical features are characteristic of *skilled* English-like signers, as well as skilled ASL users.

²The acceptance of both ASL and meaning-based, English-like signing is based on a recognition that sign communication in the United States involves a bilingual and diglossic situation. ASL and English and deaf and hearing persons have been in contact in the United States for 200 years. The communicative norm for sign language in the United States reflects this dynamic contact. In using sign language to communicate in English, deaf and hearing people have naturally developed a form of English signing that reflects adaptation of English to the visual-gestural modality and the appropriate mixtures and borrowings between the two languages (ASL and English) in contact. When fluent communicators use this English form of signing, it contains the grammatical features described in footnote 1. More importantly, fluent sign language communicators can recognize its use and judge the relative fluency of a person using it.

tool for MSD staff; (c) required sign skill proficiency standards for all MSD staff within two years of hire and an expected minimum level of sign proficiency at hire based on SCPI rating levels (see Table 1); and (d) provision for mandatory sign language instruction for staff members not attaining their required sign skill proficiency standards. Sign language communication skill standards are based on the amount and type of interaction persons in each staff position have with deaf people (students, colleagues, and parents). For example, the required SCPI rating level standard established for teachers, the school psychologist, and social worker is *Advanced*, and the required standard for cooks, janitors, and groundskeepers is *Survival*. The first mandatory SCPIs for MSD staff were administered in November, 1986, and mandatory sign language classes began two months later.

Opportunities for Developing Sign Communication Skills

MSD's sign language instructional program is a comprehensive approach that includes instruction in American Sign Language (ASL), meaning-based, English-like signing, simultaneous communication, and Deaf Culture, with sign language classes ranging from basic to advanced levels. At this writing, MSD is in the fourth year of offering mandatory sign language instruction for staff. Sign classes are scheduled on work time for two hours per week. SCPI results are utilized to determine class placement and groupings. Class times are staggered throughout the work day and week to minimize intrusion on staff members' regular work assignments, with classes beginning at 8:30 a.m. and concluding at 9:00 p.m. In addition, MSD plans to offer staff the alternative of taking community sign classes on their own time. This alternative will include a requirement that staff present evidence of having completed all course requirements with a passing grade.

Highly skilled instructors, two half-time and one full-time, offer the MSD sign instructional program. The two half-time instructors are deaf, native signers who have considerable experience teaching sign language classes at the local community college. The full-time instructor is a hearing, native signer who has considerable experience in sign language instruction and holds Comprehensive Skills Certification from the Registry of Interpreters for the Deaf.

Using the Basic Sign Communication (BSC) Curriculum (Newell, 1983), basic sign language classes are offered to build knowledge and skills in sign vocabulary, sign grammar, and use of this vocabulary and grammar for communication. For more advanced classes, a strategy found to be effective is self-evaluation and sign instructor assisted evaluation of staff self-produced videotapes. These tapes involve staff members taping themselves while signing a topic they have selected. Often staff members choose a topic that relates to their job; for example, a mathematics teacher's topic might involve explaining mathematical processes. If requested by a staff member, a sign instructor will assist in selecting a topic. Sign materials for technical/specialized vocabulary, such as those discussed in

Table 1
 Sign Proficiency Standards for Michigan School for the Deaf (MSD) Staff
 Based on Sign Communication Proficiency Interview (SCPI) Ratings

MSD Staff Position	SCPI Rating		
	At Hire	Within 1 Year of Employment ^a	Within 2 Years of Employment ^b (Proficiency Level)
Administrators			
Superintendent	Intermediate +	Intermediate +	Advanced
Dean of Students	Intermediate +	Intermediate +	Advanced
Principal	Intermediate +	Intermediate +	Advanced
Administrative Officer	No Requirement	Survival	Intermediate
Physical Plant Superintendent	No Requirement	Survival	Survival +
Administrative Support			
Secretary IV/B and V	Survival	Survival +	Intermediate
Clerk	No Requirement	Novice +	Survival
Storekeeper	No Requirement	Novice +	Survival
Library Assistant	Intermediate	Intermediate +	Advanced
Contractual Personnel			
Sign Language Instructor	Advanced	Advanced +	Superior
Coach	Intermediate	Intermediate	Intermediate
Nursing Staff			
Registered Nurse	Survival +	Intermediate	Intermediate +

Continued on next page

Table 1 Continued

MSD Staff Position	SCPI Rating		
	At Hire	Within 1 Year of Employment ^a	Within 2 Years of Employment ^b (Proficiency Level)
Clinical Services			
Social Worker	Intermediate +	Intermediate +	Advanced
Psychologist	Intermediate +	Intermediate +	Advanced
School Guidance Counselor	Intermediate +	Intermediate +	Advanced
Vocational Counselor	Intermediate +	Intermediate +	Advanced
Speech Therapist	Intermediate +	Intermediate +	Advanced
Audiologist	Intermediate +	Intermediate +	Advanced
Teachers			
Classroom Teacher	Intermediate +	Intermediate +	Advanced
Substitute Teacher	Survival +	Intermediate	Intermediate +
Skill Center Coordinator	Intermediate +	Intermediate +	Advanced
Interpreters^c			
Interpreter I	Intermediate +	Advanced	Advanced +
Interpreter II	Advanced	Advanced +	Advanced +
Interpreter IIIB	Advanced +	Advanced +	Advanced +
Resident Care Aides (RCA)			
RCA I	Survival	Survival +	Intermediate
RCA II	Intermediate	Intermediate +	Advanced
RCA IIIB	Intermediate +	Intermediate +	Advanced
RCA V	Intermediate +	Intermediate +	Advanced

Continued on next page

Table 1 Continued

MSD Staff Position	SCPI Rating		
	At Hire	Within 1 Year of Employment ^a	Within 2 Years of Employment ^b (Proficiency Level)
Food Services			
Cook	No Requirement	Novice +	Survival
Institution Worker	No Requirement	Novice +	Survival
Dining Room Supervisor	Intermediate +	Intermediate +	Intermediate +
Buildings & Grounds			
Motor Vehicle Operator	No Requirement	Survival	Intermediate
All Others	No Requirement	Novice +	Survival

^aFor current employees, within 1 year from date sign communication skills standards approved (by policy).

^bFor current employees, within 2 years from date sign communication skills standards approved (by policy).

^cRID certification preferred and encouraged for all persons in interpreter positions.

Appendix C, may be used by staff in accordance with their topics. Fluency, sign production, use of meaning-based sign vocabulary, and use of sign language grammatical principles are stressed. During advanced classes, sign instructors incorporate both their own materials and professionally made sign language videotapes to assist staff in improving comprehension and expanding sign vocabulary. Most staff members using the BSC Curriculum have SCPI levels from 0 to Survival Plus, while staff using self-produced videotapes and other instructional materials have achieved SCPI ratings at the Intermediate level and above. There are a few staff with special needs who do not meet general placement criteria, however. For example, a few staff with Intermediate ratings have particular difficulty with sign production and are reviewing the basic level curriculum.

An extensive library of videotapes is available on a home loan basis. This library includes tapes of (a) fingerspelling; (b) basic sign vocabulary and sign communication; and (c) lectures, storytelling, and Deaf Culture information presented in ASL. Sign language instructors assist in selecting appropriate tapes for individuals and they incorporate use of these videotapes into sign classes to enhance comprehension. (A selected list of instructional materials for sign language and Deaf culture is available from the first author of this paper.)

In addition to mandatory classes, MSD offers one voluntary class for staff at or above their required sign skill standard who wish to continue their sign language studies. Also, classes for parents and other family members of MSD students are offered free of charge. Family classes are considered a critical part of the commitment of MSD to promoting "total communication" for all MSD students.

The long-range objective of the MSD staff sign language communication skills assessment-development program is to eliminate mandatory staff classes by bringing all staff to their required sign communication skill levels. Progress is being made toward this objective, but it is a process that is expected to take several years. A number of MSD staff were first employed by the school before it officially recognized the importance of sign language within a Total Communication philosophy, and these staff began to learn sign language late in their careers. Some of these staff members have done well in acquiring signing competence; others have not. MSD administration is committed to supporting varied sign communication skill development opportunities for staff, and hopefully, pairing the right opportunities with *each* staff member will provide the support needed for all MSD staff to achieve their required sign communication skill standards.

When all/most staff have achieved their required sign communication skill standards, focus will be shifted to: (a) optional enrichment opportunities designed for staff to assist them in achieving their full potential for development of sign language skills, and (b) development of a (similar) sign language communication skills assessment-development program for students. A student program would be especially beneficial (a) for students who come to MSD at a later age with

no/minimal sign skills, and (b) for all students who can benefit from increasing their knowledge about ASL and sign English, and the use of sign language in formal and informal situations.

Improvement of MSD Staff Sign Communication Skills

Table 2 provides information on the sign language communication skills of MSD staff following the initiation of SCPI use. This information is based on the SCPI skill level rating standard established for each MSD staff position; that is, Table 2 reports the total number and percentage of staff above, at, and below the sign proficiency standards established for their positions. For example, as stated earlier, MSD established an SCPI rating level standard of Advanced for teachers and a rating level standard of Survival for cooks. Thus, in Table 2, a teacher with an Advanced rating and a cook with a Survival rating would both be listed in the "at" column for "achievement relative to sign communication skill standards."

Table 2

Total Number (N) and Percentage (%) of Michigan School for the Deaf Staff Above, At, and Below Required Sign Communication Skill Standards, 1986-1990

Year	Achievement Relative To Sign Communication Skill Standards						Totals (N)
	Above		At		Below		
	N	%	N	%	N	%	
1990	47	36.4	37	28.7	45	34.9	129
1989	49	36.8	30	22.6	54	40.6	133
1988	47	36.6	21	15.9	64	48.5	132
1987	48	36.1	16	12.0	69	51.9	133
1986	47	36.4	11	8.5	72	55.4	130

Adoption of MSD's Total Communication Policy by the Michigan State Board of Education made SCPI participation mandatory for all staff. As shown in Table 2, in 1986, 58 (44.6%) of 130 MSD staff members were *at* or *above* their required sign communication skill standards and 72 (55.4%) were below their required standards. The high percentage of staff below their required standards is not surprising when one considers that (a) sign language classes for MSD staff had not been offered on a regular basis for several years prior to 1986, and (b) staff in several employee classifications (for example, janitors and building and grounds maintenance workers) were not permitted to participate in sign language classes when they were offered.

On a positive note, continued improvement in MSD staff sign skills has occurred since initiation of (a) SCPI use, (b) mandatory sign language classes, and (c) inclusion of sign language communication skill expectations in job an-

nouncements for MSD staff positions. As shown in Table 2, the percentage of staff having SCPI ratings at and above required sign communication skill standards increased from 44.6% in 1986 to 59.4% in 1989. By 1990, the percentage of staff at or above their required sign communication skill standards reached 65.1% (84 of 129 staff), an increase of 20.5% since the initiation of MSD's use of the SCPI in 1986.

A breakdown by MSD job areas of the 1986 and 1990 data in Table 2 is provided in Tables 3 and 4 respectively. This data shows that for the two largest MSD job area groups, one group (teachers, Job Area #6 in Tables 3 & 4) has shown improvement in sign skills while the other group (resident care aides, Job Area #8 in Tables 3 & 4) has shown relatively little change. The percentage of teachers at or above their required sign skill standards increased from 39.5% (15 of 38 staff) in 1986 to 73.0% (27 of 37 staff) in 1990, while for resident care aides this percentage was 47.1% (16 of 34 staff) in 1986 and 51.5% (17 of 33 staff) in 1990.

[Note: For information on results from other programs using the SCPI, see Caccamise, Newell, Fennell, and Carr (1988); Caccamise, Newell, and Mitchell-Caccamise (1983); Newell, Caccamise, and Tebo (1989); and Newell, Caccamise, Tebo, and McAdam (1988).]

Future Needs

Two needs have been identified based on the results of the MSD staff sign language communication skills assessment-development program to date. Current data collection procedures do not allow a separation of staff sign skill changes

Table 3

Number (N) and Percentage (%) of Staff in Each Michigan School for the Deaf (MSD) Job Area Above, At, and Below Sign Proficiency Standards as of December, 1986

MSD Job Area	Achievement Relative To Sign Proficiency Standards						Totals (N)
	Above		At		Below		
	N	%	N	%	N	%	
1. Administrators	3	42.9	0	0	4	57.1	7
2. Administrative Support	5	55.6	0	0	4	44.4	9
3. Contractual Personnel	3	100.0	0	0	0	0	3
4. Nursing Staff	0	0	1	50.0	1	50.0	2
5. Clinical Services	2	40.0	1	20.0	2	40.0	5
6. Teachers	8	21.1	7	18.4	23	60.5	38
7. Interpreters	4	57.1	0	0	3	42.9	7
8. Resident Care Aides	15	44.1	1	3.0	18	52.9	34
9. Food Services	4	50.0	0	0	4	50.0	8
10. Buildings & Grounds	3	17.6	1	5.9	13	76.5	17
Totals	47	36.1	11	8.5	72	55.4	130

Table 4

Number (N) and Percentage (%) of Staff in Each Michigan School for the Deaf (MSD) Job Area Above, At, and Below Sign Proficiency Standards as of 1990

MSD Job Area	Achievement Relative To Sign Proficiency Standards						Totals (N)
	Above		At		Below		
	N	%	N	%	N	%	
1. Administrators	4	66.6	1	16.7	1	16.7	6
2. Administrative Support	4	44.4	4	44.4	1	11.2	9
3. Contractual Personnel	4	50.0	2	25.0	2	25.0	8
4. Nursing Staff	1	50.0	1	50.0	0	0	2
5. Clinical Services	2	33.3	1	16.7	3	50.0	6
6. Teachers	9	24.4	18	48.6	10	27.0	37
7. Interpreters	5	71.4	0	0	2	28.6	7
8. Resident Care Aides	13	39.4	4	12.1	16	48.5	33
9. Food Services	4	57.1	1	14.3	2	28.6	7
10. Buildings & Grounds	1	7.1	5	35.7	8	57.2	14
Totals	47	36.4	37	28.7	45	34.9	129

that are due to sign skill development opportunities for current staff and changes that are due to MSD hiring practices and policies. Therefore, future data collection will be conducted in a manner that will allow this differentiation to be made.

Second, there is a need to study the reasons for the lack of improvement in the sign language skills of some staff members. Factors should be identified which will motivate and/or enable more MSD staff members to achieve their required sign language communication skill proficiency levels. If a significant number of staff are unable to achieve their sign skill standards, it may be necessary to adjust current sign language communication skill standards for some staff positions. Based on data reported in the previous section, resident care aides are a priority group relative to this need.

CONCLUSIONS

MSD has responded to the need for staff to share the responsibility for improved communication with their students by implementing a staff sign language communication skills assessment and development program. By identifying required sign communication skill standards for each MSD staff position, by providing sign communication skill development opportunities for staff based on the results of a standard assessment process, and by including sign language communication skill expectations in MSD job announcements, this program has resulted in continued improvement in the sign language communication skills of MSD staff over a four-year period. More importantly, communication between staff and students has become more satisfying, and teachers and other staff are able to

use their improved communication skills to assist students in more fully achieving their potential as learners. With on-going administrative encouragement and support, continued improvement of MSD staff sign language communication skills is anticipated. Future data collection will document this improvement, with a focus on the influence of sign language skill development opportunities for current staff and the influence of hiring practices and policies on this progress toward a "total communication environment" for all members of the MSD community.

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APPENDIX A
THE SIGN COMMUNICATION PROFICIENCY INTERVIEW (SCPI)
RATING SCALE

<u>RATINGS</u>	<u>FUNCTIONAL DESCRIPTORS</u>
<i>Superior Plus (+)</i>	<i>Able to use signing fluently and accurately to discuss topics in depth in formal and informal social and work situations. All aspects of signing are native-like, including breadth of vocabulary, grammar, colloquialisms, accent/production, and cultural references.</i>
<i>Superior</i>	<i>Able to use sign vocabulary and grammar with near native-like fluency and accuracy for social and work needs. Comprehension, vocabulary, and grammar are excellent.</i>
<i>Advanced Plus (+)</i>	<i>Exhibits some superior level skills, but not <i>all</i> and not <i>consistently</i>.</i>
<i>Advanced</i>	<i>Able to sign with sufficient grammatical accuracy and vocabulary to participate effectively in most formal and informal conversations on social and work topics. Conversation is generally fluent and shared. Broad knowledge and clear, accurate production of sign vocabulary and fingerspelling; occasional misproductions do not detract from conversational flow. Grammar and comprehension are good. Spontaneously elaborates on familiar topics when appropriate and able to respond appropriately to unfamiliar topics.</i>
<i>Intermediate Plus (+)</i>	<i>Exhibits some advanced level skills, but not <i>all</i> and not <i>consistently</i>.</i>
<i>Intermediate</i>	<i>Able to satisfy with some confidence routine social demands and work requirements. Demonstrates use of some sign grammatical features in connected discourse, but not controlled. Able to narrate and describe topics related to background, family, interests/hobbies, and work. Fair to good control of everyday sign vocabulary (may have several misproductions), with fluency generally characterized by moderate signing pace and some inappropriate pauses/hesitations.</i>
<i>Survival Plus (+)</i>	<i>Exhibits some intermediate level skills, but not <i>all</i> and not <i>consistently</i>.</i>
<i>Survival</i>	<i>Able to satisfy basic survival needs in social and/or work situations. Can ask and answer basic questions and has some skills in creating sign utterances based on learned/memorized sign vocabulary. Can get into, through, and out of simple survival situations.</i>
<i>Novice Plus (+)</i>	<i>Exhibits some survival level skills, but not <i>all</i> and not <i>consistently</i>.</i>
<i>Novice</i>	<i>Basically limited to single sign utterances with vocabulary primarily related to everyday social, question/topic areas such as names of family members, basic objects, colors, numbers, names of weekdays, and time.</i>
<i>0</i>	<i>No functional skills in signing.</i>

APPENDIX B

SIGN COMMUNICATION PROFICIENCY INTERVIEW (SCPI)
RATERS' REPORT FORM

CANDIDATE: Name CIRCLE ONE: ASL OR GENERAL
 INTERVIEWER: Name DATE OF INTERVIEW: 8/4/87
 RATER: SCPI Team DATE OF RATING: 8/6/87
 SCPI RATING: Intermediate Plus

Please explain why you awarded this rating. Be specific and try to relate your explanation to the rating descriptors.

- Fairly shared natural conversation for social and work topics
- Fairly broad sign vocabulary with evidence of advanced sign vocabulary
(ELECTRICAL, SOLDERING, BAWL-OUT, PROGRAM)
- In general, production and fluency good, but some misproductions of a few
basic signs (numbers – 15, 80, 90, NORTH, GRADUATE)
- Using primarily English word order, demonstrated control of several sign
grammatical features; for example, affirmative and negative head nod, time line
and number incorporation (3-WEEKS-AGO, 3-MONTHS-AGO), directionality
for verbs (INTERRUPT-US), and some use of space (to describe "house")
- Good comprehension

Please write some suggestions for how this candidate may improve her/his sign communication skills.

- Expand advanced sign vocabulary (especially "social" signs) and master
production of all basic signs
- Continue development of sign grammatical features, with emphasis on (a) use
of space in "descriptions," and (b) classifiers
- Broaden sign language communication skills through American Sign
Language (ASL) instruction that emphasizes flexibility in sign order, effective
use of space for location, description, and action/verb information, and use of
classifiers

APPENDIX C

TECHNICAL SIGNS PROJECT (TSP) MATERIALS

The Technical Signs Project (TSP) was established at the National Technical Institute for the Deaf (NTID) in 1975. The goal of this project is to promote effective communication through the establishment of a nationally based system for sharing signs used by skilled signers for technical/specialized (T/S) vocabulary. TSP materials include both videotapes and sign manuals.

To date, 57 videotapes have been produced in the following 25 T/S areas:

- | | |
|---|---------------------|
| ○ Anthropology | ○ Mathematics |
| ○ Business | ○ Photography |
| ○ Career Education | ○ Printing |
| ○ Communication: Audiology & Speech Pathology | ○ Psychology |
| ○ Computer Terminology | ○ Religion/Catholic |
| ○ Economics | ○ Science/General |
| ○ Employment | ○ Science/Biology |
| ○ Engineering | ○ Science/Physics |
| ○ English | ○ Secretarial |
| ○ Fine & Applied Arts | ○ Social Work |
| ○ Human Sexuality | ○ Sports |
| ○ Legal | ○ Television/Media |
| | ○ Theater |

TSP manuals include:

- *Manual 1: Project Overview* (TSP principles and process, suggestions for use of TSP materials, and list of vocabulary on TSP videotapes)
- *Manual 2: Reading TSP Sign Diagrams*
- *Manual 3: Mathematics*
- *Manual 4: Communication: Audiology & Speech Pathology*
- *Manual 5: Career Education*
- *Manual 6: English*
- *Manual 7: Religion/Catholic*
- *Manual 8: Theater*
- *Manual 9: Social Work*
- *Manual 10: Science*
- *Manual 11: Legal* (in preparation)

For additional information about TSP materials, including ordering information, contact Dr. Frank Caccamise, NTID/RIT, P.O. Box 9887, Rochester, NY 14623-0887, 716-475-6420 (V/TDD).