

# NTID RESEARCH BULLETIN

Center for Research, Teaching and Learning · National Technical Institute for the Deaf · Rochester Institute of Technology

Vol.6 No.2 Spring 2001



*Susan Fischer is a professor in the Department of Research at NTID.*

## **Crosslinguistic Research on Sign Languages**

by Susan Fischer

For the past several years, I have had the opportunity to participate in research on a number of sign languages that are unrelated to American Sign Language (ASL). In this article, I will talk a little about why research on other sign languages is important, and will also address the following questions:

- What do sign languages have in common and why?
- How do sign languages vary?
- Why are the differences among sign languages important?

I will be presenting data from the sign languages of Japan and China, and comparing those findings with what we know about ASL. The data I am using come from collaborative work with Jun-Hui Yang (a graduate of the NTID Masters of Science in Secondary Education (MSSE) program, now in a doctoral program at Gallaudet) and Yutaka Osugi (now executive director of the Japan Federation of the Deaf).

### **Why is the Study of Other Sign Languages Important?**

As a linguist, I find the study and comparison of different sign languages intrinsically interesting. But there are both practical and theoretical reasons why it is important here at NTID to engage in the study of sign languages other than ASL. Practically speaking, we are seeing more international deaf students traveling to the US and studying at colleges like NTID. Further, we often encounter immigrants

to the US who enroll as Americans but whose first sign language is not ASL. To help these students, it is important to understand how their native sign languages could be different from ASL. Conversely, our students and faculty are traveling more to other countries and encountering deaf people there. In order to prevent possible misunderstandings due to both language and culture, we need to be more aware of what other sign languages are like. Expecting deaf people from other countries to use "our" ASL is analogous to the Ugly American who goes to a foreign country and eats only at McDonald's.

From a more theoretical perspective, knowing about other sign languages can give us insight into and appreciation for our own language and at the same time help to understand the bounds of language. It is all too easy to take ASL as the norm and make assumptions that just because ASL does things a certain way, all sign languages will do the same things the same way. It's an easy step then to assume that ASL is the way all sign languages are *supposed* to be, or, in other words, to judge other sign languages by the standard of ASL. This is similar to the myths we have finally overcome with respect to judging ASL (or other spoken languages) by the standard of English, or, as in the past, judging languages like English by the standards of Latin.

When we compare ASL with another sign language, just as when we compare any two languages, we learn about what is possible in language in general. How similar are sign languages to each other? And how are they different? And why?

*Crosslinguistic Research continued on page 3*

## **Notes of Note**

**Bob Whitehead**, with N. Schiavetti, D.E. Metz, D. Gallant, and B. Whitehead, has recently published an article, "Sentence intonation and syllable stress in speech produced during simultaneous communication," in the *Journal of Communication Disorders*, 33, 429-441.

**Harry Lang** will participate in the dissertation defense for a doctoral student at the University of Bergen, Norway, in early June.

Harry also will present the commencement

address at the American School for the Deaf in Hartford, CT, in June.

*Context, cognition, and deafness: An introduction*, edited by M. Diane Clark, **Marc Marschark**, and Michael Karchmer, has just been published by Gallaudet University Press. The book elucidates the effects of family, peers, and schools on the cognitive development of deaf children, by calling upon

*Notes of Note continued on page 3*



Jeffrey Porter  
Interim Director, CRTL

## The Reach of Research

It is too easy to think of research as space- and time-bound, that it happens *here* (and not *there*) between 9 am–5 pm, Monday through Friday (and throw in an occasional Saturday and Sunday while you’re at it). It is too easy to forget the incredible reach of research, beyond any one location, any one time, any one culture.

The articles presented in this *NTID Research Bulletin* issue for your reading enjoyment illustrate this reach of research. Susan Fischer’s piece takes us across both linguistic and cultural boundaries to explore similarities and differences between ASL and the sign languages of Japan and China. Her research also reaches out to establish new partnerships with fellow collaborators, Jun Hui Yang (a citizen of China who is a recent graduate of NTID’s MSSE program and is now in a doctoral program at Gallaudet University) and Yutaka Osugi (Executive Director of the Japanese Federation of the Deaf).

The piece by Harry Lang and Gail Kovalik reaches back over the last 30 years, and far into the future. It describes a recently funded NSF project, COMETS, which will draw together resource materials accumulated over Harry’s career as a teacher and researcher in science, engineering,

mathematics, and technology, and will make this archived material available to students, “teachers in training,” and veteran educators. It is a reach being powerfully amplified and extended through Web-based technology.

At its best, the reach of research extends from people to people, from clouded understanding to insight, and from theory to practice. It is limited only by the boundaries of our imagination and the edges of our ability to make real what is possible.

Please visit the NTID Department of Research Web site to review ongoing research activities at <http://www.rit.edu/~468www>. We invite feedback to the department by clicking on the “Contact” button.

Banner for NTID  
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Web site. This image was  
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### NTID RESEARCH BULLETIN

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Jeffrey Porter, Interim Director, CRTL  
Gail Kovalik, Editor

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*Susan D. Fischer has been doing research on ASL structure and related issues such as linguistic processing for over 25 years. Recently she has branched out to look at comparisons between ASL and other [unrelated] sign languages, particularly at the level of sentence structure. Current research interests include the relation between aptitude for spoken language and success in learning a sign language, as well as further comparisons of Western and Asian sign languages. For more information, she may be contacted at FISCHER@MAIL.RIT.EDU*

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***Crosslinguistic Research continued from page 1***

**Similarities Among Sign Languages**

All sign languages that I have seen have a number of things in common. They all can mark *verb agreement* with object and often subject by moving or facing the active signing hand away from the subject and toward the real or established location of the object (so-called “directional” verbs; see Meir, 1998). While not all verbs participate in this process, all sign languages have verbs that do. All sign languages also have *classifier constructions*, in which a handshape incorporates as a pronoun into a verb. Granted, the particular classifier used, for example, to represent a human being will vary from sign language to sign language, but we can expect to find some handshape that represents a human being in virtually all sign languages.

All sign languages that I have seen use *facial expression*, perhaps analogous to intonation in spoken language, to convey certain meaning functions, such as asking a question or negating a statement.

We can conjecture that the above similarities exist for two reasons: 1) sign languages are constrained by the visuospatial channel of communication; and 2) sign languages are learned in similar situations.

**Word Order Differences**

One of the differences we note between sign languages is basic word order. (It is important to distinguish between basic word order and most frequent word order.) Sign languages differ from each other at a profoundly deep level in their word order. That word order may be influenced by the spoken language surrounding the sign language,

but differences will still persist. For example, in ASL, like English, plain (non-inflecting) verbs such as HAVE tend to appear underlyingly before their objects, whereas in NihonSyuwa (NS), the sign language of Japan, as in spoken Japanese, plain verbs consistently follow their objects. However, there are still profound differences in the structures of the respective signed and spoken languages, again due in part to the channel of communication, which in the case of signed languages, lends itself to greater simultaneity.

**Differences in Expressions of Relations**

All languages have ways of showing who does what to whom. A language like English, with relatively few inflections, uses word order to indicate relations among elements in the sentence. Word order alone differentiates (1) from (2) below:

- (1) The boy likes the girl.
- (2) The girl likes the boy.

But in a language like Latin, the word order doesn't matter; the inflections tell the story; sentences (3)-(4) have the root words in the same order, but the meanings are different because of the inflections:

- (3) Puer            puellam            amat  
    Boy (nom.)    girl (acc.)        love  
    ‘The boy loves the girl.’
- (4) Puerum        puella            amat  
    Boy (acc.)     girl (nom.)        loves  
    ‘The girl loves the boy.’

***Crosslinguistic Research continued on page 4***

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**Notes of Note**  
***continued from page 1***

experts in anthropology, psychology, linguistics, basic visual sensory processes, education, cognition, and neurophysiology to share complementary observations on the processes involved. For more information, see the Gallaudet University Press Web site at <http://gupress.gallaudet.edu/CCD.html>.

Included in this book are two articles by Marschark, the first with Jennifer Lukowski, who is co-director of the RIT School Psychology and Deafness Program: “Understanding language and learning in deaf children” (pp. 71-86), and

“Context, cognition, and deafness: Planning the research agenda” (pp. 179-198).

Marc has also recently published the following article, with L.M. Ritschmeier, J.T.E. Richardson, H.F. Crovitz, and J. Henry, “Intellectual and emotional functioning in college students following mild traumatic brain injury in childhood and adolescence,” in the *Journal of Head Trauma Rehabilitation*, 15, 1227-1245.

***Notes of Note continued on page 4***

**Figure 3.**  
*CSL Sign for 'neat.'*



**Figure 1.**  
*Thumbs-up handshape*



**Figure 2.**  
*I handshape*

**Crosslinguistic Research continued from page 3**

In all the sign languages that I have seen, when verbs inflect for agreement with object or subject, word order becomes more flexible. But with plain verbs, sign languages differ in terms of what they do. In ASL, when the verb does not agree with its object or subject, the word order is more rigid. However, in NS, there is another solution. When an NS verb doesn't take agreement, NS can insert a "dummy" path verb whose sole purpose is to show agreement (Fischer, 1996a). The NS equivalent of (1) would be something like:

- (5) KODOMO^OTOKO<sub>a</sub> KODOMO^ONNA<sub>b</sub>  
 Child male child female  
 SUKI <sub>a</sub>AUX<sub>b</sub>  
 like aux

The AUX in (5) serves the same function as the word *do* in an English sentence like (6), where *do* is there only to take the past tense inflection.

- (6) Children did not always put beans up their nose.

Although ASL does not have the option of structures like (5), many other unrelated sign languages do: for example, Danish Sign Language, and Sign Language of the Netherlands. If we didn't know about these other languages, we wouldn't know about these possibilities.

**Differences in Where Things Are Expressed**

Let us turn to two other differences that are highlighted by looking at different, unrelated sign

languages. There are two handshapes (among others) that are shared by ASL, Chinese Sign Language (CSL), and NS, shown in Figures 1 and 2. Let us call them the thumbs-up and the I handshapes.

These handshapes have no intrinsic meaning in ASL, though the I handshape is used for some initialized signs such as IDEA, and the thumbs-up handshape is still used marginally for persons or the numeral 1 (it has been replaced by the "1" handshape in newer signs—see Fischer, 1996b). However, in CSL, I means negative (Yang, 2000; Yang & Fischer, submitted) and thumbs-up means positive. For example, the CSL signs for "neat/clean" and "dirty" are given in figures 3-4. In ASL, negation is shown by individual signs and a negative headshake; the idea that a specific handshape would denote negation is foreign to ASL.

The same two handshapes have intrinsic meaning in NihonSyuwa as well, but the meanings are different! In NS, the thumbs-up handshape marks male gender, while the I handshape marks female gender. So, for example, figure 5 (p. 5) shows the sequence of actions in the sign meaning "did you tell her?" The direction of the eyegaze marks you;" the widening of the eyes and the raised eyebrows mark a yes-no-question; the movement of the right hand marks "tell," the I-handshape "on the left hand marks "her," and the mouth movement "po" marks the past (Osugi & Supalla, 1998; Fischer & Osugi, 2000).

Again, ASL generally does not mark gender in pronouns or in verb agreement. NihonSyuwa does so systematically. (If we substituted the thumbs-up handshape for the I, the sign in figure 5 would mean "did you tell *him*?") ASL has no generally

**Notes of Note**  
*continued from page 3*

**Frank Caccamise and Bill Newell** have recently developed two Web sites, the first related to the Sign Communication Proficiency Interview (SCPI) and the second to ASL and Deaf Culture materials.

The SCPI Web site provides an overview of the SCPI, and includes other information such as the SCPI rating scale; skills important to the SCPI; the history of the SCPI; readings; SCPI workshop, workshop schedule and workshop

planning factors/costs; contacts; programs; and a sample SCPI interview. To access, click on [www.rit.edu/~wjnncd/scpi/home/html](http://www.rit.edu/~wjnncd/scpi/home/html).

The second site lists distributors, ASL Curriculums, & Technical Communication information for ASL and Deaf Culture materials. This site is at [www.rit.edu/~fccncr/ASLDCM.HTM](http://www.rit.edu/~fccncr/ASLDCM.HTM).

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**Figure 4.**  
CSL Sign for 'dirty.'



**Figure 5a.**  
Beginning of  
"Did you tell her?"



**Figure 5b.**  
End of  
"Did you tell her?"

recognized grammatical marker of past, but NS uses a facial marker to indicate past. These are genuine differences among sign languages.

Figure 5 demonstrates another interesting difference between NS and ASL. All known sign languages can mark verb agreement by moving or facing the active signing hand toward a location. In ASL and NS at least, there is another alternative: to use another hand as a surrogate location. However, the difference between ASL and NS in this regard is the *systematicity* of that alternative. In ASL, only a few verbs permit both kinds of agreement marking, but in NS, *any* verb that can inflect for agreement using location can substitute a gender marker (such as thumbs-up or I) for that location. Furthermore, in ASL when a hand represents the location of a noun, it can only be an object; however, in NS, it can be a subject: that is, the verb can move or face away from that hand.

#### Differences in the Use of Facial Expression

One final difference between ASL and other unrelated sign languages that I shall discuss is the use of facial expression. I mentioned earlier that all sign languages seem to use facial expressions to express concepts like negation and questions. In ASL, those expressions tend to occur simultaneously with words or sentences. For example, if we have a sign like UNDERSTAND, we can negate it by signing it along with a negative facial expression to mean "not understand." To a user of ASL, it seems so natural that it is hard to imagine that some other sign language would not have that option. However, CSL cannot negate its sign for "understand" by shaking the head while signing; rather, the negation, whether lexical or facial, must occur after the sign, not at the same time. (Yang, 2000; Yang & Fischer, under review) Similarly, in ASL when we ask a certain kind of question that requires an answer other than "yes" or "no," a special facial expression is attached to the sentence or the part of the sentence being questioned. In NS, such expressions exist also; however, there is a second facial expression associated with this sort of question that occurs after the sentence. Such a construction is impossible in ASL (Fischer & Osugi, 1998).

#### And Finally

Looking at different sign languages can help us to appreciate and celebrate linguistic diversity; it reminds us that different languages have different ways of expressing the same meaning, and that ours is only one way of many. By looking at our reactions when we consider the "strangeness" of another sign language, we can better understand our own language. Understanding what is possible in sign languages can help to prevent crosslinguistic misunderstandings.

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*Harry Lang is a professor in the Department of Research at NTID.*

## **Bridging Research and Practice in Math and Science Education for Deaf Students: The Development of a Major Internet Resource**

By Harry Lang and Gail Kovalik

There is an urgent need for well-grounded information about “best practices” in teaching and curriculum development for pre-service teacher preparation programs and for ongoing professional development. This need is exacerbated by the problem of teacher turnover and the assignment of science and mathematics instruction to teachers not appropriately trained in these disciplines. With increased attention being focused on improving the quality of teaching around the country, there also is a need for resources to support such efforts to be available any time and any place (i.e., on an asynchronous Web site).

With more than 25,000 deaf and hard-of-hearing students in postsecondary programs today, a central clearinghouse of information and resources would be welcomed by educators in the college environment as well. These needs are reflected in hundreds of queries received each year from parents, interpreters, “informal educators” (museum staff, planetarium directors, etc), graduate and undergraduate students, and other professionals in K-12 and postsecondary education and led us to establish the Clearinghouse On Mathematics, Engineering, Technology and Science (COMETS).

Based at NTID, COMETS is funded by the National Science Foundation (Award No. HRD-0095948) and will include the development of a prototype for “systemic reform” in science, engineering, mathematics, and technology for

deaf students. The “system” in “systemic reform” in this project is a complex mosaic of people with a variety of needs. The system also includes people and resources working to achieve a common goal—quality education for deaf students.

COMETS will align professional development and the delivery of instruction. It will involve educators and parents, and deaf students themselves. Both organizations serving deaf students (e.g., CEASD, CAID, PEPNet) and those focusing on science, math, engineering, and technology (e.g., National Council of Teachers of Mathematics, National Science Teachers Association, Association for the Education of Teachers in Science, etc.) will be connected through the systemic reform efforts.

COMETS will have the following primary goals:

- develop a comprehensive resource to provide asynchronous information through interactive components to eleven target audiences on the World Wide Web and in print
- field-test the applicability of the information and the dissemination strategies in both formal and informal professional development activities
- develop a network for systemic reform through information dissemination in the education of deaf students in science, engineering, mathematics, and technology.

The revolution in computer technologies shows promise for enhancing information dissemination to deaf students and the professionals responsible for their education. In particular, the World Wide Web was very successful in a prior NSF-sponsored grant project, the Access to English and Science Outreach Project, AESOP (see *NTID Research Bulletin*, vol. 2, no. 3, Fall 1997), which was highlighted by the National Science Foundation in their publication



*Gail Kovalik is the COMETS Project Coordinator.*

### **Notes of Note** *continued from page 4*

**Jerry Berent** has received an RIT Provost’s Learning Innovations Grant to fund his “Supporting English Acquisition” (SEA) project for the 2001-2002 academic year. The project involves expansion of the SEA web site ([www.rit.edu/~seawww](http://www.rit.edu/~seawww)) and the involvement of NTID technical, math, science, social science, and humanities faculty in implementing SEA site suggestions for supporting deaf and hard-of-hearing students’ English skill development

in content courses. For more information, you may contact Berent at [GPBNCI@RIT.EDU](mailto:GPBNCI@RIT.EDU).

At the April 28 meeting of Conference of Educational Administrators of Schools and Programs for the Deaf (CEASD) in Rochester, NY, the CEASD awarded **Harry Lang** the Edward Allen Fay Award in “recognition of your significant literary contributions to the field of deafness.”

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*"Evidence of the positive effect of better teaching is unequivocal; Indeed, the most consistent and powerful predictors of student achievement in mathematics and science are full teaching certification and a college major in the field being taught."*  
(John Glenn Commission on Mathematics and Science Teaching, 2000)

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*"I think there is a significant gap between what the training programs offer and the actual needs of programs hiring their products. So it ends up being the responsibility of the individual schools to develop our own inservice offerings. It would be great if there was a 'clearinghouse' of planned inservices that we could access."*  
(School Superintendent)

*Synergy* (NSF, March 1998). AESOP, co-directed by NTID researchers Harry Lang and John Albertini, provided evidence that many of the needs of professionals serving deaf students in science, mathematics, engineering, and technology areas can be met with quality, interactive resources based on the most recent educational research findings and available on the World Wide Web.

COMETS' Principal Investigator is Harry Lang, a deaf educational researcher, scientist, and teacher who has been on NTID's faculty for more than 30 years. Gail Kovalik, who has degrees in both science and library science, and who is currently editor of the *NTID Research Bulletin*, will serve as the Project Coordinator. In this position, she will be responsible for building the network of target audiences, Web development and implementation, data entry, replying to queries from outside users, and information dissemination. Together, Lang and Kovalik will present educational research findings and draw implications for teaching, curriculum



*Splash page for the new NTID-sponsored COMETS Web site. This image was downloaded from the Web.*

development, and the provision of support services in science, math, engineering and technology areas. Alan Cutcliffe, from NTID's Instructional Design and Evaluation department, and Cea Dorn, from NTID's Educational Resources department, will be instrumental in designing and programming the World Wide Web site.

Lang's research in this project will focus on evaluating the Internet to determine whether it can be a credible change agent in an information dissemination program for systemic reform. The application of the COMETS Web information will be field tested in formal professional development programs (inservice teacher education in K-12 schools) and in preservice teacher preparation

programs in other universities. The results of the comprehensive evaluation will be shared with others through presentations and publications.

The acronym "COMETS" presents an appropriate metaphor. As with the so-named astronomical bodies, this project will leave a trail of material and energy which will be available for a long time to come.

The prototype COMETS Web page is still under development. Bookmark us at [www.rit.edu/~comets](http://www.rit.edu/~comets).

*If you wish to be added to the COMETS network, please send your name, address, and email address to Gail Kovalik, COMETS Project Coordinator, National Technical Institute for the Deaf, 96 Lomb Memorial Drive, Rochester, NY 14623-5604, email [GLK9638@RIT.EDU](mailto:GLK9638@RIT.EDU).*

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Networking! NTID's Access to English and Science Outreach Project. (1997). *NTID Research Bulletin*, 2(3), 1, 3-5.

*Harry Lang is a profoundly deaf scientist and educator with more than 30 years' experience in educating deaf students in science and mathematics, and in preparing teachers in both in-service and pre-service environments. He has published three books on the contributions of deaf women and men in science, and is nearing completion of a co-authored fourth book summarizing what research says to educators of deaf students. For more information, he may be contacted at [HGL9008@RIT.EDU](mailto:HGL9008@RIT.EDU)*

*Gail Kovalik is a former librarian specializing in the field of deafness for nine years at NTID. She is currently the editor of the NTID Research Bulletin, the CRTL Connections newsletter, and co-edited Deafness: An Annotated Bibliography and Guide to Basic Materials (American Library Association, 1992), and a Library Trends issue, Libraries Serving an Underserved Population: Deaf and Hearing-Impaired Patrons (1992). For more information, she may be contacted at [GLK9638@RIT.EDU](mailto:GLK9638@RIT.EDU)*

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# NTID RESEARCH BULLETIN

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*This welcome page displays navigation choices for targeted audiences and features of a major new NTID-sponsored Web site called COMETS: Clearinghouse on Mathematics, Engineering, Technology, and Science, sponsored by a grant from the National Science Foundation. For information on the COMETS Web site project, see the article on p. 6 of this issue.*

*This picture was downloaded from the COMETS Web site.*

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COMETS is a two-year information dissemination project funded by the National Science Foundation, project number HRD-0095948, to address the urgent need for well-grounded information about "best practices" in teaching and curriculum development for deaf students in science, mathematics, engineering, and technology (SMET) courses. While the primary focus of the COMETS site is on the needs of SMET educators in K-12 and postsecondary environments, additional audiences who will benefit from the information contained at this site are the professionals responsible for in-service teacher professional development in K-12 programs, professionals responsible for providing support services in SMET courses, informal education professionals, and parents of deaf children.

- Pre-Service
- In-Service
- K-12 Teachers
- High School Students
- College Faculty
- Undergraduate Students
- Graduate Students
- Support Personnel
- Parents
- Employers
- Administrators

# IMPLICATIONS OF NTID RESEARCH

FOR DEAF AND HARD-OF-HEARING PEOPLE • NTID RESEARCH BULLETIN

Vol.6 No.2 Spring 2001

*In 1993, the National Technical Institute for the Deaf established the Center for Research, Teaching and Learning. A primary mission of the Center is to "foster advances in teaching and learning that enhance the academic, professional, social and personal lives of people who are deaf or hard of hearing." Among its other functions, the Center both conducts research relevant to that goal and supports research conducted by colleagues from across NTID.*

*As part of our collaborative efforts, the Center regularly undertakes the collection and dissemination of relevant research findings from across NTID. Included for each publication is a description of the implications of the research findings the author thinks will be most relevant for NTID's audiences.*

**McEvoy, C., Marschark, M., & Nelson, D.L. (1999). Comparing the mental lexicons of deaf and hearing individuals. *Journal of Educational Psychology, 91*, 312-320.**

The present study examined similarities and differences in the organization of verbal concept knowledge in deaf and hearing individuals. That organization has been shown to influence performance by hearing adults in a variety of tasks that entail language and memory, but comparable studies comparing deaf and hearing individuals have not been conducted previously. Results indicated that the mental lexicons of deaf and hearing individuals vary in several ways relating to the coherence or consistency of concepts across individuals. At the same time, there was remarkable consistency between the groups, and the organization of concepts that are sound-related and not sound-related did not vary with hearing status.

#### **Implications:**

Reading, problem solving, and other academic tasks frequently require relatively automatic access to the meanings of words. We know that the automatic retrieval of word meanings tends to be slower in young deaf readers. The present study

demonstrates that while deaf and hearing students have very similar knowledge about common words, deaf students tend to have concepts that are less clearly defined and less strongly interconnected with related words, which may be a factor in their slower reading comprehension.

**Parasnis, I. (1997). Cultural identity and diversity in deaf education. *American Annals of the Deaf, 142*, 72-79.**

This paper begins with a discussion of the sociocultural model of a deaf child as a member of a bilingual minority and examines its implications for deaf education. A case is made for recognizing ethnic diversity within the deaf community in designing and implementing educational programs and policies that strengthen the self-identities of deaf children. The use of technology, its potential to accommodate diverse deaf learners, and its influence on the deaf community are also discussed.

#### **Implications:**

Acknowledging the cultural identity and diversity of deaf children and the complexity of their psychosocial experiences is the first step toward developing educational programs that meet the needs of individual deaf learners and help them realize their full potential.

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The *NTID Research Bulletin* is published three times a year during the academic year by the Center for

Research, Teaching and Learning, National Technical Institute for the Deaf, a college of Rochester Institute of Technology. It is available without charge. Contact the Editorial Office for back issues, changes of address, or to subscribe to the *NTID Research Bulletin*.

Opinions expressed in the *NTID Research Bulletin* do not reflect those of NTID or RIT. Your comments, questions, and requests for information are welcome.

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The goal of this article is to inspire some fresh insights, new thinking, and innovative approaches to deaf education.

**Stuckless, R. (Ed.). (1997). *National Task Force reports on quality of services in the postsecondary education of deaf and hard of hearing students*. Rochester, NY: Northeast Technical Assistance Center, Rochester Institute of Technology.**

The reports of eight committees of this national task force have been distributed nationally and posted on the Web at <http://www.rit.edu/~netac/publication/taskforce>. These are:

- Stuckless, R., Ashmore, D., Schroedel, J., & Simon, J. *Introduction*.
- Warick, R., Clark, C., Dancer, J., & Sinclair, S. (1997). *Assistive listening devices*.
- Anderson, C., Boyd, B., Brecklein, K., Dietz, C., Gibson-Harmon, K., & Ishman, S. *Basic academic preparation*.
- Hastings, D., Brecklein, K., Cermak, S., Reynolds, R., Rosen, H., & Wilson, J. *Notetaking for deaf and hard of hearing students*.

- Orlando, R., Gramly, M.E., & Hoke, J. (1997). *Tutoring for deaf and hard of hearing students*.
- Stinson, M., Eisenberg, S., Horn, C., Larson, J., Levitt, H., & Stuckless, R. *Real-time speech-to-text services*.
- Porter, J., Camerlengo, R., DePuye, M., & Sommer, M. *Campus life and the development of postsecondary deaf and hard-of-hearing students: Principles and practices*.
- Sanderson, G., Siple, L., & Lyons, B. *Interpreting for postsecondary deaf students*.
- Kolvitz, M., Cederbaum, E., Clark, H., & Durham, D. *Institutional commitment and faculty/staff development*.

**Implications:**

More than 20,000 deaf and hard of hearing students presently attend, and seek special services in approximately 2,000 different colleges and universities throughout the US. These reports are intended to give guidance to these institutions in providing services of high quality to deaf and hard-of-hearing students, and to enable the students to become better-informed consumers of these services.

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*If you would like to obtain information in an area beyond what you see listed, you can write to the first author of closely related papers, c/o NTID. If you are unable to obtain one of the publications on this sheet from your local library, you may send this form to: Educational Technology Resource Room, National Technical Institute for the Deaf, 52 Lomb Memorial Drive, Rochester, NY 14623-5604.*

\_\_\_ McEvoy, C., Marschark, M., & Nelson, D.L. *Comparing the mental lexicons of deaf and hearing individuals*.

\_\_\_ Parasnis, I. *Cultural identity and diversity in deaf education*.

\_\_\_ Stuckless, R. *National Task Force reports on quality of services in the postsecondary education of deaf and hard of hearing students*. Available on the Web at <http://netac.rit.edu/publication/taskforce>.

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questions or need more information, please contact the authors listed or the editor of the *NTID Research Bulletin* directly. Copies of complete articles abstracted in **Implications of NTID Research for Deaf and Hard-of-Hearing People** are available from the Educational Technology Resource Room at NTID, e-mail: [ASKCRTL@RIT.EDU](mailto:ASKCRTL@RIT.EDU) or mail: 52 Lomb Memorial Drive, Rochester, NY 14623-5604. Books may be borrowed via interlibrary loan services at your local public library.

