

NTID RESEARCH BULLETIN

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

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Bill Clymer is an associate professor in the Department of Educational Resources at NTID.

Supporting English Acquisition: A Professional Development Web Site for Educators Serving Deaf and Hard-of-Hearing Students

By Gerald P. Berent and E. William Clymer

The infusion of English teaching principles throughout the college curriculum is one of the strategic objectives outlined in *NTID's Blueprint* (Davila & Hurwitz, 1999) for enhancing NTID student success. This broad effort to facilitate NTID students' improved acquisition of English language skills was the motivation for the development, in progress, of our Supporting English Acquisition (SEA) Web site. The actual development of the site began during a session of NTID's Instructional Technology Consortium, a program which provides NTID faculty with training in emerging instructional technologies for application in the education of deaf and hard-of-hearing students.

The SEA Web site is an online professional development tool for English teachers, content teachers, and other professionals serving deaf and hard-of-hearing students (Berent & Clymer, 2000). Its goal is to help educators promote students' English acquisition and literacy development by explaining the challenges that English poses for deaf and hard-of-hearing students, summarizing the characteristics of specific English structures and processes, translating English language research findings into everyday language, and discussing research implications and suggesting applications to the teaching/learning process. By learning more about the implications and applications of English

language research, teachers will be better positioned to anticipate students' problems with English and to develop and employ methods and materials that can facilitate their students' ongoing English language acquisition.

As an online tool, the SEA site affords world-wide access to professional development information and activities. It presents professionals with a dynamic, interactive medium containing guided practice sections in which site visitors learn to identify, produce, and simplify specific English structures and receive online feedback on their responses to exercises. The online medium also makes it easy to revise the site's materials and to expand the site's contents in response to the needs of the profession and the feedback provided by site visitors. Along with the current components oriented toward teachers and other professionals, future plans may include the development of components specifically designed as English teaching and tutoring modules for students themselves.

Because of its accessibility via the World Wide Web, the SEA site has the potential to positively impact teachers and students not only in English-speaking countries, but also in programs for deaf students in non-English-speaking countries. For example, English is now being taught to some deaf students in the Czech Republic. As English instruction to deaf students in other countries expands, the SEA site could serve as a valuable resource for teachers and students in those countries.

Organization of the SEA Site

In its current format, the SEA site contains

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Notes of Note

Project Access, a grant-funded project that provides for the first-ever Information Technology curriculum for deaf students in Central and Eastern Europe, was a distinguished finalist in the Stockholm Challenge Award 2000. Initiated by **Ken Nash** and **Jim DeCaro**, and funded by the Soros Foundation, Project Access links NTID with eight schools for the deaf and hearing impaired in Hungary. The Stockholm Challenge is a global arena for information technology projects that benefit people and society, and offered NTID an

opportunity to take part in a global sharing of knowledge. For more information, contact Ken Nash at KRNNIS@RIT.EDU

Marc Marschark, together with three graduate students at Queensland Institute of Technology, recently had a paper, "Understanding theory of mind in children who are deaf," published in the fall, 2000, issue of *Journal of Child Psychology and Psychiatry*.

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“Tripping the Light Fantastic”

The two pieces highlighted in this edition of the *NTID Research Bulletin* nicely show the ongoing dance between research and practice in the applied world of education. This partnership has characterized NTID’s research efforts over the last 32 years.

Alys Young’s work is a wonderful example of this dance, with practitioners and researchers alternately taking the lead. Alys is with us this fall as a Visiting Scholar from the University of Bristol, England, and we are enjoying and benefiting from her collegueship tremendously. Her work neatly demonstrates how research can help move practice forward through gathering and organizing needed information, and by creating a common forum among researchers and practitioners to consider and act on such information. As such, her research creates a momentum to further practice that arises from the inside, from partnership, not through a force applied externally, from outside that partnership.

The article by Jerry Berent and Bill Clymer represents another example of the lively dance between research and practice. While Alys’ work happens at the program level, Jerry and Bill are forging alliances with practitioners at the “micro-level” of teaching/learning activities. Their work, using the highly interactive technology of the Web, represents an exciting interweaving of practitioners and researchers around a critical question:

What is the best way to support the learning of English by deaf and hard-of-hearing students?

It is a timeless question, but new technology allows for powerful new ways not existing before for teachers and researchers to work together in addressing it. It is a technology that takes “interactivity” to new levels: quick, responsive communication between and among teachers and researchers about both teaching/learning challenges and solutions as they arise, instant access to a wealth of educational resources to support the learning of English, and a scope of participants that potentially is world-wide! It is a wonderful example of using technology to amplify, not diminish, the human gifts of individuals working together toward a collective goal.

The endless dance between practice and research, mutually informing each partner and illuminating the steps, with each step growing out of the one before—this has been the hallmark of NTID’s research commitment to make a difference; it will continue to be its future.

Jeffrey Porter
Interim Director, CRTL

NTID RESEARCH BULLETIN

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

If you wish a copy of the *NTID Papers &*

Publications 1998 or if you know of colleagues who would enjoy receiving the *NTID Research Bulletin*, please send names and addresses to:

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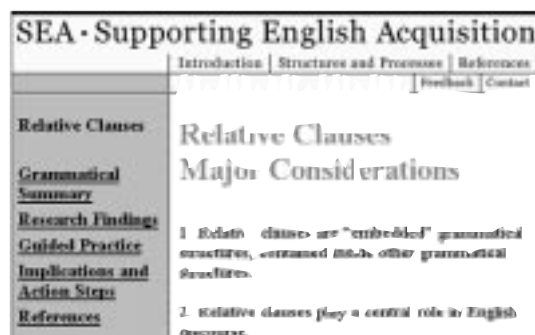
A unique feature of the SEA site is the Guided Practice section for each grammatical structure or process.

Screen 1
Relative Clauses/Major Considerations

Supporting English continued from page 1

introductory pages stating the purpose of the site, its intended audiences, and instructions for using the site. From the introductory pages there are links to Structures and Processes, References, Feedback, and Contact. The Structures and Processes link provides a list of English grammatical structures and processes. Currently, there are units on Relative Clauses and Wh-Questions, but the list will expand to include coverage of many grammatical structures (verb tense and aspect, passive voice, auxiliary verbs, subordinate clauses, etc.) and processes (paragraph development, transitional phrases, pronominal reference, etc.). Because professionals serving deaf students vary in their levels of familiarity and comfort with grammatical terminology, a philosophy of the SEA site is to illustrate and discuss the logic of particular English phenomena in very general terms and to introduce grammatical terminology to the minimum extent possible.

When site visitors link to a unit on a particular structure, they encounter a list of Major Considerations associated with that structure and a list of links to the subsections of the unit, which



Notes of Note
continued from page 1

Marc also recently gave three presentations, “Understanding language and cognition of deaf learners — or — Descartes is dead and I’m not feeling too good myself,” an invited address to the International Symposium on Mental Health and Deafness, Sydney, Australia, July, 2000; “Development and education of deaf children — or is it education and development?” a plenary address to the International Congress of Educators of the Deaf in Sydney, Australia, July, 2000; and “Alternative modes of communication can lead to alternative

include Grammatical Summary, Research Findings, Guided Practice, Implications and Action Steps, and References.

The Grammatical Summary section of the Relative Clauses unit contains links to the following subsections: Relative Clause Description, Relative Clause Functions, Relative Clause Introducers, Confusion with Other Sentence Structures, and Gaps Inside Relative Clauses. These subsections provide sufficient background information for professionals to understand the nature and variety of English relative clauses.

The Research Findings section then discusses relative clauses in the context of research that has been conducted on deaf students’ knowledge of English relative clauses and the difficulty that relative clause structures can pose for students in reading comprehension and written expression. Cited research articles and books appear within the text as underlined links. These links take site visitors directly to the complete reference for a particular citation in the SEA References section.

A unique feature of the SEA site is the Guided Practice section for each grammatical structure or process. In the case of the Relative Clauses unit, there are interactive exercises on Identifying Relative Clauses, Producing Relative Clauses, and Simplifying Relative Clauses. The intent of these exercises is to provide site visitors with the opportunity to test out their knowledge or new intuitions about the grammatical phenomena that they have reviewed in the Grammatical Summary and Research Findings sections. In all of the Guided Practice exercises, visitors verify their answers by

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modes of thinking: A proud heretic speaks (and signs) out,” a keynote address to the Biennial Research Symposium of the International Society for Augmentative and Alternative Communication, Washington, August, 2000. For more information, contact Marschark at MEMRTL@RIT.EDU

Harry Lang has been invited to present to Gallaudet University’s Honor Society on October 18, 2000. The

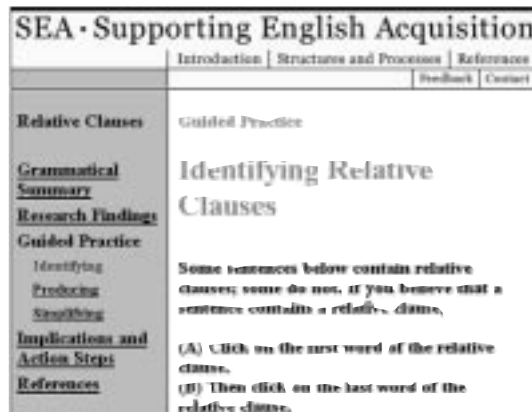
Notes of Note continued on page 6

Berent's current research interests include the description and explanation of deaf students' English language knowledge, the effects of varying levels of grammatical competence on students' reading comprehension and written expression, and the comparison of deaf students' English acquisition with the acquisition of English as a second language by hearing students. His research activities also include the exploration of diagnostic measures for assessing English language knowledge and

the identification of learning disabilities and attention deficit disorders in the deaf population. For more information, he can be reached at GPBNCI@RIT.EDU

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clicking on a relevant word, which opens a dialogue box containing a correct answer or explanation or a message instructing the visitor to try again.



For example, the Identifying Relative Clauses subsection provides a list of sentences, some of which contain relative clauses and some which do not. Site visitors test their ability to identify English relative clauses by clicking what they believe is the first word of the relative clause and then clicking what they believe is the last word of the relative clause. An incorrect click prompts a message of "Incorrect. Try another word." Clicking the correct first and last words of a relative clause prompts a verification of "Correct!" and an illustration of the sentence with the relative clause highlighted. For the following sentence, the correct responses would be to click the word *a* and then the word *has*, identifying the relative clause *a camera has*.

It is obvious to most professionals that the quality of an image is improved depending on the number of megapixels a camera has.

The Producing Relative Clauses subsection allows visitors to test their understanding of how two meaning units are combined in a sentence containing a relative clause. In this exercise, visitors are asked to combine two sentences into one sentence containing a relative clause. For example, from the two sentences,

My instructor bought a lightweight digital camera.

She will take outdoor photos with the lightweight digital camera.

the following four sentences with relative clauses (italicized) could be formed:

My instructor bought a lightweight digital camera *which she will take outdoor photos with*.

My instructor bought a lightweight digital camera *that she will take outdoor photos with*.

My instructor bought a lightweight digital camera *she will take outdoor photos with*.

My instructor bought a lightweight digital camera *with which she will take outdoor photos*.

Such an exercise underscores the complexity and variation of English relative clause sentences and emphasizes the challenge that such sentences pose for many deaf and hard-of-hearing students.

The Simplifying Relative Clauses subsection gives site visitors practice in simplifying complex relative clause sentences, which might be necessary for facilitating students' reading comprehension in course materials or on tests and quizzes. For example, the sentence below containing relative clauses could be paraphrased by the three simpler sentences shown after it:

One thing *you have to do* when you find an image *that you would like to edit* is to find a program with which you can adjust color, brightness, contrast, size, and shape.

Suppose you want to edit an image. First find an image. Then find a program *that adjusts color, brightness, contrast, size, and shape*.

Although the revision still includes a sentence containing a relative clause (italicized), it is a type of relative clause that the SEA Relative Clauses unit explains is easy for deaf students to process.

Screen 2

Identifying Relative Clauses

The Producing Relative Clauses subsection allows visitors to test their understanding of how two meaning units are combined in a sentence containing a relative clause. ... Such an exercise underscores the complexity and variation of English relative clause sentences and emphasizes the challenge that such sentences pose for many deaf and hard-of-hearing students.

Bill Clymer is an instructional developer whose primary professional responsibility is to determine how new technological innovations and applications can be applied to solving instructional and administrative problems in an educational environment. Additionally, he serves as the Coordinator for NTID's Instructional Technology Consortium. For more information, he can be reached at EWCNCP@RIT.EDU

As we continue to develop and expand the SEA site, we will explore other guided practice formats using more sophisticated Web-based interactive strategies.

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The last section within a unit provides Implications and Action Steps based on the material that has appeared in the earlier sections. There is a Summary of Research Findings that briefly summarizes the main points covered in the Research Findings section, a list of Research Implications that outlines primary educational considerations associated with the target structures, and a list of Action Steps that offers guidelines for the use, avoidance, or modeling of particular structures in different educational situations.

The SEA site includes an Evaluation/Feedback Form that visitors can complete and submit electronically. The form solicits visitors' opinions of the site design and its sections, and it requests background information on visitors' employment settings and other demographic facts. As the SEA site develops, visitors' evaluations and feedback will help us to improve and expand the site.

Screen 3 Feedback Form

The screenshot shows a web browser window with the title "SEA - Supporting English Acquisition". The page has a navigation menu with links for "Introduction", "Structures and Processes", "Reference", "Feedback", and "Contact". The main content area is titled "Supporting English Acquisition" and "Evaluation/Feedback Form". Below the title, there is a paragraph of text: "Please give us your own evaluation of this site, your comments on usage, ideas, and your background information by completing the items below." This is followed by a section titled "Your opinion of this site" with two numbered items. Item 1 asks "This site is easy to navigate." and item 2 asks "The material is presented in a form that I can understand." Each item has four radio button options: "Strongly agree", "Agree", "Disagree", and "Strongly disagree".

Request for Submissions

We would like to invite professionals serving deaf and hard-of-hearing students to contribute units for inclusion in the SEA site. As described above, the current organization of the site focuses on descriptions of English structures and processes, research findings, guided practice, and implications and action steps. We would like to invite English

teachers, content teachers, researchers, and others to submit proposals for covering other English structures and processes. In addition to such units that refer to English language research, we would also like to invite proposals for a new type of unit that demonstrates how to infuse English teaching principles into technical and other content courses for deaf and hard-of-hearing students.

Individuals interested in contributing to the SEA site may send proposals to Gerald P. Berent, Department of Research, National Technical Institute for the Deaf, Rochester Institute of Technology, 96 Lomb Memorial Drive, Rochester, New York 14623-5604, or may contact either of the editors by e-mail: GPBNCI@RIT.EDU (Berent), EWCNCP@RIT.EDU (Clymer). The SEA site may be visited at <http://www.rit.edu/~gpbnci/sea>

References

- Berent, G.P., & Clymer, E.W. (2000, March). *On-line professional development for supporting English acquisition*. Paper presented at the annual convention of Teachers of English to Speakers of Other Languages, Vancouver, BC, Canada.
- Davila, R.R., & Hurwitz, T.A. (1999). *NTID's blueprint: Strategic objectives 1999-2004*. Rochester, NY: Rochester Institute of Technology, National Technical Institute for the Deaf.

Acknowledgment: We wish to thank Alan Cutcliffe, Department of Instructional Design and Evaluation, for his active involvement in the initial phases of Web design for this project.

Alys Young has a Ph.D. in Deaf Studies from the University of Bristol, England, and is also a qualified psychiatric social worker. Currently she is the Associate Head (Research) of the School of Community, Health Sciences and Social Care at the University of Salford, England. Her published research includes studies of bilingual/bicultural approaches to early intervention in hearing families with deaf children, deaf/hearing inter-professional working relations in educational and health settings, forensic mental health and deafness,



Alys Young is a Visiting Scholar in the Center for Research, Teaching and Learning at NTID for fall quarter 2000.

Deaf Child and Family Intervention Programs Using Deaf Adult Role Models By Alys Young

In the UK, the past ten years have seen a slow but steady development in home intervention programs in which deaf adults are the primary intervenors (Sutherland and Kyle, 1993; Young, 1995). Typically these programs have three basic aims: (1) to introduce hearing parents to a deaf adult who can be a positive role model for them and their deaf child; (2) to encourage the use of British Sign Language (BSL) and/or other forms of signed communication within the family; (3) to expose families to a cultural rather than a deficit model of deafness. At the heart of these projects is not simply the employment of professionals who are deaf. Rather it is the deliberate and positive exploitation of skills and approaches to working with families that are inherent to being deaf. The development of these programs parallels that in other countries (e.g., Hoffmeister and Shettle, 1981; Svartholm, 1993).

The difficulty in the UK is that, despite being a small country, there has been little coordination between programs and no available national overview of their location, scope, and service arrangements. This lack of information is a major problem for parents seeking access to such programs in a country where available services to deaf children and their families can differ significantly between regions. The lack of overview also represents a wasted opportunity for the sharing of training needs, developmental knowledge and practice innovation in programs that are still not commonplace.

To answer these and other considerations, the

Royal National Institute for Deaf People (RNID) funded a national (England and Wales only) research project. Among its objectives were to identify the location, aims, target populations, funding, working arrangements and structure of these programs, and to evaluate influences on their development and service delivery. The following represent key examples of some of its findings.ⁱ

A two stage process of questionnaires sent to 776 providers of services to deaf children and their families located 36 programs which were explicitly set up to employ deaf people as role models working with hearing families and their deaf children in the home setting.ⁱⁱ Although the projects were nationally widespread, there were large regional variations, with the significant lack of such programs in Wales being of particular concern.

The first program began in 1988, but between 1995 and 1999 the number of projects more than doubled. This rapid growth coincides with the Code of Practice on the Identification and Assessment of Children with Special Educational Needs (Education Act 1993, part 3) coming into effect in 1994. This legislation reinforced the need for the social and linguistic development of children to be considered in the planning of appropriate special needs support, and clearly some programs used this as leverage to secure funding.

The primary aim of all programs studied was the provision of a deaf role model to children and families. However, most programs were found to work with children across a very wide age span (from a few months old, to late teens). This lack of focus on a particular age range raises significant questions about what a 'role model' is, whether this should change according to the age of the child, and

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presentation will focus on the empowerment of deaf people as related to the telecommunications access movement, summarized in his new book, *A phone of our own: The deaf insurrection against Ma Bell*.

Lang will also present the keynote address, "Educating deaf students in the 21st century: Turning research into practice," on October 27, 2000, at the Southeast Regional Institute on Deafness' 30th annual conference in Atlanta.

In November, Lang will work with a group

of national experts convened at Arizona State University to update the book *Teaching chemistry to students with disabilities*. For more information, contact Lang at HGL9008@RIT.EDU

Ron Kelly, with Co-PI Harry Lang, has received a grant award from the Fund for the Improvement of Postsecondary Education (FIPSE) at the U.S. Department of Education. The award will cover the 14-month development of a prototype Web-based problem solving resource for deaf students. The

and theoretical issues in the methodology of Deaf Studies research.

During her stay at NTID, Young will be carrying out research into the implementation and professional organization of universal newborn hearing screening programs and continuing to develop her current interest in epistemology and validity in Deaf Studies research.

For full details of the research project and its findings, see: Young A.M., Griggs M., Sutherland H. (2000, in press). *Deaf child and family intervention services using*

deaf adult role models: A national survey of development, practice and progress. London: Royal National Institute for Deaf People. [For information, contact: RUTH.GEALL@RNID.ORG.UK]

how programs cope with that variation. Results suggest that most programs have come under pressure to work with any and all children referred to them by teachers of the deaf or social workers simply in order to demonstrate the viability of the programs.

Although a minority of projects employed over five deaf staff, the vast majority employed just a single deaf adult. Usually this person was 'attached' to an otherwise hearing team, comprised, for example, of teachers of the deaf. Given the fact that most programs were found also to work in total isolation from each other, this was a worrying finding with implications for the professional isolation and stress of the program leaders.

All programs reported an acute skills shortage in recruiting deaf staff. This was not fundamentally about deaf adults not possessing relevant formal qualifications (although that was true of most); rather it was about the difficulty of finding deaf adults who had the necessary experience and self-confidence to believe that they could support families. A small number of projects were attempting to tackle this problem by setting up pre-job application training.

Most projects were only locally funded on a short term basis and relied on referrals at the discretion of education and social services (or, in some cases, self referrals by parents). A key issue facing many programs was whether they could demonstrate their viability and impact so that statutory services would take over and fund the program on an ongoing basis as part of the standard range of provision offered to families. This had already happened to a small minority of programs.

The research demonstrated the clear scope for

collaboration and joint training between programs, the usefulness of establishing a deaf professional network in this area of work, and the pressing need to develop and share tools to demonstrate the impact and viability of such programs.

These opportunities will be addressed in a national conference (sponsored by RNID and run by the report's authors) early in 2001 that will bring together current program providers, would-be providers, parents, and managers of funding authorities.

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Hoffmeister, R.J., & Shettle, C. (1981). *Results of a family sign language intervention program.* Paper presented at the 50th Meeting of the Convention of American Instructors of the Deaf, Rochester, NY.

Sutherland, H., & Kyle, J. (1993). *Deaf children at home, final report.* Bristol, UK: University of Bristol, Centre for Deaf Studies.

Svartholm, K. (1993). Bilingual education for the deaf in Sweden. *Sign Language Studies, 81*, 291-332.

Young, A.M. (1995). *Family adjustment to a deaf child in a bilingual/bicultural framework.* Unpublished doctoral dissertation, University of Bristol, Bristol, UK.

ⁱ For full details of the research project and its findings see: Young A.M., Griggs M., Sutherland H. (2000, - in press). *Deaf child and family intervention services using deaf adult role models: A national survey of development, practice and progress.* London: Royal National Institute for Deaf People.

[For information, contact: RUTH.GEALL@RNID.ORG.UK]

ⁱⁱ It should be noted that the project also identified a further 153 services where deaf people were employed in work with deaf children for different purposes. See Young et al., 2000, Chapter 3.

project addresses a critical problem facing many deaf college students and other learners—inadequate preparation in the analytical procedures used to solve problems, particularly word problems. The goal is to provide instruction and mentored guided practice with a wide variety of sample problems to improve general problem solving skills, analogical reasoning, and self-monitoring of solution procedures. For more information, contact Kelly at RSKNCP@RIT.EDU

Susan Fischer gave a colloquium at the State University of New York at Albany in October, 2000, on "Sign Language Typology." Susan spoke to members of the Linguistics and Anthropology Program about how sign languages vary, as well as how they are similar to each other, in an attempt to account for both phenomena. Included in the talk were issues such as iconicity and the way that the modality of a language helps to shape its structure. For more information, contact Fischer at SDFNCR@RIT.EDU

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The SEA—Supporting English Acquisition—Web site is an online professional development tool for English teachers, content teachers, and other professionals serving deaf and hard-of-hearing students. See the article on p.1 for a description of this Web site.

SEA • Supporting English Acquisition	
	Introduction Structures and Processes References
	Feedback Contact
<p><u>Purpose of Site</u></p> <p><u>Intended Audience</u></p> <p><u>How to Use</u></p> <p><u>About the Authors</u></p>	<p>What is the purpose of SEA resource pages?</p> <ul style="list-style-type: none"> • To assist educators of deaf students in their efforts to promote their students' English language acquisition and literacy development • To assist educators of hard-of-hearing students, of students of English as a second language (ESL), and of other students with limited English proficiency (LEP), whose English difficulties are often similar to the difficulties experienced by many deaf students

IMPLICATIONS OF NTID RESEARCH

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

Vol.5 No.3 Fall 2000

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.

Kelly, R.R. (2000). Technology and individuals who are deaf, hard of hearing, blind, and partially sighted. In J.D. Lindsey (Ed.), *Technology and exceptional individuals*, Third Edition, (pp. 353-374). Austin, TX: PRO-ED.

This chapter provides an overview of the educational applications of technology for students who are deaf, hard of hearing, blind, or partially sighted. It describes and discusses current, state-of-the-art instructional and educational technology along with practical examples of utilization for each of the identified student populations. Examples from actual classroom applications are included. A literature review is provided, with emphasis on computers and related technology.

Implications:

This is a practical guide for pre-service and in-service teachers to obtain a comprehensive summary of the current technology applications with exceptional learners, as well as the potential for future use. Activities and resource references for the various technologies and pertinent organizations are provided.

Marschark, M., & Everhart, V.S. (1999). Problem solving by deaf and hearing

children: Twenty questions. *Education and Deafness International*, 1, 63-79.

Two experiments examined the problem solving strategies of deaf and hearing students from seven years to college age in the context of the Twenty Questions game. Overall, deaf children were significantly less likely than hearing peers to "win," and problem solving appeared less efficient and less cognitively sophisticated among deaf than hearing students at all ages. Inexperienced hearing children typically discovered the "correct" strategy, whereas inexperienced deaf peers did not. Possible causes and implications of the observed effects are discussed as they relate to early experiences of deaf children and their lack of early, effective access to language.

Implications:

This study demonstrates that deaf students do not spontaneously use information about the categories of things (e.g., animals or vehicles) during a problem solving task, and that the lack of such a strategy can hinder performance. The results are consistent with other recent studies suggesting that deaf and hearing students may have different organizations in long-term memory, which may influence performance on some kinds of tests.

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

**Stinson, M.S., & Liu, Y. (1999).
Participation of deaf and hard of hearing
students in classes with hearing students.
*Journal of Deaf Studies and Deaf
Education, 4*(3), 191-202.**

Regular classroom teachers, interpreters, teachers of the deaf, hearing classmates, and deaf or hard-of-hearing (D/HH) students can all contribute to active participation by the D/HH student. Barriers that interfered with participation of each of these groups of individuals, and strategies to facilitate participation, were identified. Accommodations that regular classroom teachers, teachers of the deaf and interpreters can make to promote integration of the D/HH student were identified.

Implications:

Teachers and support staff can use 16 specific strategies to promote the participation of D/HH students. 1) *Regular classroom teacher:* (a) Provide a communicative environment for the entire class that encourages participation by D/HH students. (b) Create effective small group learning situations that include the D/HH student. (c) Meet with the teacher of the

D/HH and interpreter to discuss ways of facilitating participation and learning of the D/HH student. (d) Demonstrate and promote positive attitudes toward the D/HH student. 2) *Teacher of the D/HH:* (a) Provide information about deafness. (b) Problem-solve communication/relationship difficulties. (c) Organize special activities for D/HH and hearing students. 3) *Interpreters:* (a) Facilitate communication of the D/HH student with teacher and hearing classmates. (b) Contribute information about deafness. (c) Assist the classroom teacher with supporting students' learning. 4) *Hearing Students:* (a) Participate willingly in activities with others, regardless of whether they are hearing or D/HH. (b) Have skills for effective communication. (c) Be familiar with characteristics of D/HH students and become comfortable with these students. 5) *D/HH Students:* (a) Actively participate in class activities and perceive hearing classmates as having positive or neutral attitudes. (b) Have communication skills for participating in the regular classroom. (c) Know how to participate in small group learning activities.

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

_____ *Kelly, R.R. Technology and individuals who are deaf, hard of hearing, blind, and partially sighted.*
_____ *Marschark, M., & Everhart, V.S. Problem solving by deaf and hearing children: Twenty questions.*
_____ *Stinson, M.S., & Liu, Y. Participation of deaf and hard of hearing students in classes with hearing students.*

Name

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