

Language and Literacy

Berent, G. P. (1996). The acquisition of English syntax by deaf learners. In W. Ritchie & T. Bhatia (Eds.), Handbook of Second Language Acquisition (pp. 469-506). San Diego: Academic Press. [AN 1449] *

This chapter reviews the existing research on the acquisition of English syntax by deaf learners and, based on recent theoretical developments in linguistics, offers a new theory-based approach to understanding the impact of deafness on English language acquisition. The chapter shows that many of the English structures that are difficult for deaf children and adults to acquire (questions, relative clauses, auxiliary verbs, articles, quantifiers, etc.) are those that involve "functional categories." Functional categories include complementizer, inflectional, and determiner phrases. Many deaf learners learn the "lexical categories" that the functional categories contain (nouns, verbs, etc.) but not the functional categories themselves. In this sense, many deaf learners tend to learn smaller languages because of the limited access they have to spoken language input.

Implications

Much of the previous research on the English language knowledge of deaf children and adults has been descriptive rather than explanatory. It has identified and described English language structures that cause deaf students difficulty, but it generally has not explained the difficulty. In explaining relative difficulties among syntactic structures, this chapter exposes teachers of deaf students to recent developments in linguistics and offers a principled view of the variation in deaf students' English language knowledge. The chapter also underscores the need for more research on deaf children's English language acquisition and on finding better methods for facilitating the learning of English in educational settings.

Berent, G. P., Samar, V. J., & Parasnis, I. (2000). College teachers' perceptions of English language characteristics that identify English language learning disabled deaf students. American Annals of the Deaf, 145, 342-358. [AN 1705]

Deaf individuals typically experience English language difficulties at all levels of linguistic knowledge. Hearing individuals with English language learning disabilities (LD) can exhibit the same kinds of English language difficulties as deaf individuals. Although the existence of deaf individuals who also have LD has been recognized for many years, there are no clearly defined criteria for identifying them, partly because of the confounding effects of deafness and LD on English language development. Despite the confound, previous surveys suggest that teachers believe that atypical English language behavior is a potential diagnostic marker for LD in deaf individuals. In this study, we administered a survey to solicit the intuitions of experienced teachers and tutors of English to deaf college students regarding the degree of difficulty that deaf students with and without LD might be expected to have in dealing with 30 specific English language phenomena. Spelling knowledge and a variety of English discourse, lexical, syntactic, and morphological phenomena emerged as priority candidates for further study as potential markers of LD in the deaf population.

Implications

The results of this research suggest that the perceptions of expert English language professionals regarding the incidental English language characteristics of deaf LD students are consistent with previous empirical findings on hearing LD students. This consistency bolsters our confidence that the intuitions of such professionals can provide important theoretical direction for future empirical research on diagnostic markers for LD in the deaf population. In-depth investigation of the areas of knowledge identified by the participants in this study might lead to the discovery of a distinct profile of English language knowledge for deaf LD students compared with their non-LD peers. Such a profile would provide additional valuable information for educational planning and intervention services and could lead to new methods and approaches to educating deaf LD students.

Berent, G. P. (2001). English for deaf students: Assessing and addressing learners' grammar development. In D. Janáková (Ed.), International Seminar on Teaching English to Deaf and Hard-of-Hearing Students at Secondary and Tertiary Levels of Education: Proceedings (pp. 124-134). Prague, Czech Republic: Charles University, The Karolinum Press. [AN 1729]

English now is being taught to deaf students in the Czech Republic as part of an effort to foster coordination and continuity in foreign language acquisition at all levels of deaf education within the Czech Republic. This project involved researching the grammatical structure of the Czech language in order to anticipate potential transfer errors expected of deaf students learning English who have a knowledge of Czech. It also involved determining the most effective classroom methods for assessing, addressing, and monitoring Czech deaf students' English language development. The results of this research were presented in a paper at the International Seminar on Teaching English to Deaf and Hard-of-Hearing Students at Secondary and Tertiary Levels of Education in Prague. The paper is published in the Proceedings of that conference.

Implications

Although directed to teachers of English to deaf students in the Czech Republic, this paper offers guidelines to all teachers of English to deaf students. It provides an overview of the challenges that deaf students face in acquiring knowledge of the grammatical structure of English. With respect to the expression of grammatical relations in English, the paper explains the characteristics of difficult structures in terms of (a) deviations from expected word order patterns, (b) interruption of major grammatical relations by other structures, (c) movement of constituents from their logical positions, and (d) identity relations between constituents. The paper describes several classroom methods for assessing deaf students' English knowledge, and it outlines the responsibilities of teachers that can help them to optimize their success in teaching English to deaf students.

Caccamise, F., Newell, W., Fennell, D., & Carr, N. (1988). The Georgia and New York State programs for assessing and developing sign communication skills of vocational rehabilitation personnel. Journal of the American Deafness and Rehabilitation Association, 21 (4), 1-14. [AN 244]

and

Caccamise, F., Updegraff, D., & Newell, W. (1990). Staff sign skills assessment development at Michigan School for the Deaf: Achieving an important need. *Journal of the Academy of Rehabilitative Audiology*, 23, 27-41. [AN 1456]

and

Newell, W., Caccamise, F., & Tebo, A. (1989). Minnesota State Academy for the Deaf achieving excellence in sign language communication skills of staff: A progress report. *The Deaf American*, 39 (4), 17-20. [AN 1513]

These three articles provide information about the Sign Communication Proficiency Interview (SCPI), a conversational approach to assessing sign language communication skills. As discussed in these publications, the SCPI has been implemented for use within integrated sign language communication assessment-skills development programs for both academic and vocational rehabilitation personnel. Data reported in these publications have shown significant improvement in staff sign language communication skills as a result of implementing these programs.

Implications

The above publications support the idea that integrated sign language communication skills assessment-development programs for academic and vocational rehabilitation personnel can lead to significant improvements in the sign language communication skills of persons working with deaf and hard-of-hearing students and clients. Further studies are in process that are designed: (1) to provide data that will assist in identifying and supporting sign language communication skill level standards that are appropriate for people in various job positions; (2) to investigate the relationship between job entry sign language skills and skills achieved following job entry; (3) to identify appropriate timelines for achieving various skill levels; and (4) to investigate the reliability of SCPI results. In addition, the SCPI is being used with other populations (for example, student teacher and intern applicants, students enrolled in deaf education programs, and interpreter training program applicants), and the appropriateness of these uses is being monitored.

Caccamise, F., Mitchell, M., Reeves, J., Herald, S., & Burch, D. (1998). SIGNS for legal and social work terminology. Rochester, NY: National Technical Institute for the Deaf (NTID), Rochester Institute of Technology (RIT).

and

Caccamise, F. & Mitchell, M. (1999). Secretarial 3 & NTID/RIT secretarial videotape. Rochester, NY: National Technical Institute for the Deaf (NTID), Rochester Institute of Technology (RIT).

and

Caccamise, F. & Lang, H.G. (2000). SIGNS for science and mathematics: A resource book for teachers and students, 2nd edition. Rochester, NY: National Technical Institute for the Deaf (NTID), Rochester Institute of Technology (RIT).

Using a systematic process developed at NTID during the 1970s, skilled signers knowledgeable about legal work, social work, the secretarial profession, science, and mathematics were interviewed in order to collect the signs they use for terminology in each of these areas. These signs, together with signs collected from previously published materials, were then shared with other experts who provided judgments of the acceptability of these signs. Based on the results of this process and respondents' sociolinguistic background, signs have been selected for inclusion in sign language books and videotapes, which are disseminated on a national basis. The legal-social workbook includes suggestions and guidelines for effective use of sign language vocabulary for legal and social work terminology and information and readings from the National Association of the Deaf and the Registry of Interpreters for the Deaf. The science and mathematics book includes a selected reading list on science and mathematics education for students who are deaf.

Implications

Artificial versus natural sign language vocabulary development continues to be a major issue in academic settings. The results of the process used to document and select signs for inclusion in NTID-produced sign language materials for technical terminology support the idea that effective communication in academic environments can be supported through a systematic process for documenting and sharing signs used by skilled sign language communicators. Thus, rather than artificial sign development or invention, research efforts should focus on observing, documenting, and sharing what skilled signers do. Such efforts take advantage of the natural mechanisms in all languages, be they spoken or signed, for developing the vocabulary needed for communication by language users.

Fischer, S. (1998). Critical periods for language acquisition: Consequences for deaf education. In A. Weisel (Ed.), Issues unresolved: New perspectives on language and deaf education (pp. 9-26). Washington, DC: Gallaudet University Press[AN 1475]

This paper reviews the evidence on critical periods for language acquisition (age[s] after which not everyone can learn a language) and concludes that just as there are critical periods for aspects of spoken languages, so there are critical periods for the acquisition of signed languages, as well as for aspects of the signed and spoken modalities. Critical periods affect the acquisition of language by deaf children, but they also affect the acquisition of sign language by hearing adults such as parents and teachers. The paper itself discusses implications for deaf education, some of which are detailed below.

Implications

Because there is a critical period for the acquisition of sign language, it is imperative that deaf children be exposed to an accessible language as early as possible. That language is most likely to be a visual language. One cannot expect late learners of sign languages, such as parents and teachers, to fully master a natural sign language. At the same time, however, expecting children to adapt to varieties of signing that are convenient for adults can cause problems too, such as having to unlearn semantic fields in order to communicate with members of the Deaf community. It also is unrealistic to expect a signed version of English to

bear the entire burden of all functions of language (learning, conveying information, modeling grammar, and metalinguistic functions); some of those functions can be handled by contextualized print, such as one finds in television captions.

Fischer, S., Delhorne, L., & Reed, C. (1999). Effects of rate of presentation on the reception of ASL. *Journal of Speech, Language, and Hearing Research*, 42, 568-582.[AN 1668]

Isolated signs and American Sign Language (ASL) sentences were presented to 14 native signers at rates varying from 1 to 6 times normal speeds. Signers were asked to copy the signs or sentences on videotape. For the signers, accuracy dropped precipitously either between 2-3 times or between 3-4 times normal speeds. Also, error types shifted from more semantically or syntactically based to more formationally based as one went from lower to higher speeds. The rates at which the breakdown occurred are the same as for time-compressed speech, suggesting that there is an overall ceiling in processing rate that is independent of modality.

Implications

The original work in time-compressed speech made it possible to make recordings for blind persons that could come close to matching the rate of reading vs. speaking. Theoretically, this research could mean that signed information could be sped up so that signers could get more information per unit of time than would be possible through natural speeds of signing. However, two factors that limit the implications of this study must be kept in mind: First, all of our subjects were native signers, and native signers are but a small percentage of the population; second, longer narratives might be fatiguing as compared to relatively short sentences.

Fischer, S. (2000) More than just handwaving: The relationship between sign language and linguistic theory. In K. Emmorey & H. Lane (Eds.), *The signs of language revisited: An anthology to honor Ursula Bellugi and Edward Klima* (pp. 195-213). Mahwah, NJ: Lawrence Erlbaum Associates. [AN 1592]

The main focus of this paper is to show the contributions that sign languages can make to linguistics, as well as the contributions that linguistics can make to the study of sign language. There often is a danger when we compare just American Sign Language (ASL) with just English; the two languages look so very far apart. However, there are many spoken languages whose structures are very similar to those we find in ASL. This is one way in which linguistics can inform our discourse about language. At the same time, studies of sign language have enriched the study of linguistics; many features of spoken languages that linguists prefer to ignore cannot be swept under the rug when discussing sign languages. Thus, the study of sign languages keeps linguists honest.

Implications

One goal of this paper is to focus on the insights that can be gained when sign languages take their rightful place next to spoken languages as natural languages. They end up getting more respect, and therefore broader use in educational settings. When a teacher learns to think that a native signer's grammar of ASL is just as valid as his/her emerging grammar of English,

different attitudes develop. Similarly, the examination of many different sign languages makes us realize that ASL is not necessarily the norm, and that sign languages can vary.

Lang, H.G. & Albertini, J.A. (2001). Construction of meaning in the authentic science writing of deaf students. *Journal of Deaf Studies and Deaf Education*, 6, 258-284. [AN 1730]

This study examines how students construct meaning through writing during authentic science activities. To determine how well students understood science concepts, we analyzed 228 writing samples from deaf students in grades 6 through 11 as well as the explanatory and reflective comments of their teachers. The analyses indicate that certain process writing strategies were differentially useful in helping deaf students to construct meaning and in allowing teachers to evaluate the constructed meaning. Three instructional conditions and two teacher variables were found to play roles in determining the accuracy and adequacy of the writing: (1) the writing prompts the teachers used; (2) the focus for the writing; (3) follow-up to the initial writing activity; (4) the teacher's content knowledge; and (5) the teacher's ability to interpret student writing.

Implications

The results of this research suggest first of all that process-writing strategies help students learn science. The results varied, however, according to classroom variables and teacher characteristics. The best results were obtained by teachers who provided clear and focused prompts for the writing and who were able to respond to or follow up the writing with another activity. How well the teachers understood the content of the lesson and how well they understood their students' writing were also important. Second, the results suggest that regular use of such writing in science classes helps teachers monitor and assess student learning.

McEvoy, C., Marschark, M., & Nelson, D. L. (1999). Comparing the mental lexicons of deaf and hearing individuals. *Journal of Educational Psychology*, 91, 1-9. [AN 1652]

This 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. A single word semantic association task was used here to investigate part of the mental lexicon involving words that were either sound-related or not sound-related. The normative procedure allowed estimates of the size of the associative set of given words and the strength of relation between the word and individual associates within the set for deaf and hearing college students. Results indicated that 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 is remarkable consistency between the groups, and the organization of concepts that are sound related and not sound related did not vary with hearing status. The results are discussed in terms of both theoretical and practical implications.

Implications

Reading, problem solving, and other academic tasks frequently require relatively automatic access to the meanings of words. Reading comprehension, in particular, depends on the interconnections among concepts activated by words on the printed page; and we know that the automatic retrieval of word meanings tends to be slower in young deaf readers. This study demonstrates that while deaf and hearing students have very similar knowledge about common words, there also are consistent differences. Deaf students tend to have concepts that are less clearly defined and less strongly interconnected with related words. Such differences may be one factor in observed challenges in deaf students' reading comprehension.

Metz, D., Caccamise, F., & Gustafson, M. (1997). Criterion validity of the Language Background Questionnaire: A self-assessment instrument. *Journal of Communication Disorders*, 30, 23-32. [AN 1504]

College-age students, who are deaf and hard of hearing (N=231), were administered (1) an objective test of their sign language communication skills (the Sign Instruction Placement Interview/SIPI), (2) an objective test of their spoken communication skills (Write-Down Speech Intelligibility Test), and (3) a paper and pencil questionnaire which includes self-assessment items for sign language and spoken communication skills (Language Background Questionnaire /LBQ). The results showed a high degree of congruence between the objective measures of students' sign language and spoken communication skills and their self-assessments; that is, the higher students scored on the objective assessments, the higher they self-rated themselves on the LBQ items for sign language and spoken communication skills. The LBQ also includes an item on preferred communication mode (PCM), and further study is planned to investigate the relationship between PCM and sign language and spoken communication skills.

Implications

Results of this study support that young deaf and hard-of-hearing adults are able to accurately self-assess their sign and spoken language communication skills. Self-assessments are not intended to supplant detailed diagnostic testing for educational and rehabilitation purposes. However, when general information about young deaf and hard-of-hearing adults' communication skills is what is needed, the simplicity, ease and economy of administration and interpretation of the LBQ supports its use, rather than the use of more time consuming, costly, and intrusive objective assessment approaches. LBQ results have been shown to be helpful in grouping entering college deaf students for orientation activities and for identifying appropriate support services for these students. Future investigation of the relationship between preferred communication mode (PCM) and communication skills may provide additional insights into the benefits of using instruments such as the LBQ. (Note: In 1995, NTID combined the LBQ and another questionnaire, the Communication Background Questionnaire (CBQ), into a single questionnaire, the Language/Communication Background Questionnaire (L/CBQ).

Samar, V.J., Parasnis, I., & Berent, G.P. (in press). Deaf Poor Readers' Pattern Reversal Visual Evoked Potentials Suggest Magnocellular System Deficits: Implications for Neuroimaging of Dyslexia in Deaf Individuals. *Brain and Language*. [AN 1713]

Deafness and developmental dyslexia in the same individual may jointly limit the acquisition of reading skills for different underlying reasons. A diagnostic marker for dyslexia in deaf individuals must therefore detect the presence of a neurobiologically-based dyslexia but be insensitive to the ordinary developmental influences of deafness on reading skill development. We propose that the functional status of the magnocellular visual system in deaf individuals is potentially such a marker. We present evidence based on pattern-reversal visual evoked potentials (VEP) recorded to low and high contrast checkerboard patterns, that adult deaf poor readers as a group display magnocellular system deficits not observed in deaf good readers. Our results indicate that developmental dyslexia exists within the deaf population and is associated with the same underlying magnocellular system deficit that has been observed in hearing dyslexics.

Implications

The results of this study have two important implications. First, the findings suggest that direct neural imaging of the status of the magnocellular visual system in deaf individuals may eventually provide differential diagnosis of developmental dyslexia in the deaf population. Second, our work provides the first objective neurobiological evidence that dyslexia and other learning disabilities (LD) exist in the deaf population. This result should be a boon to deafness professionals, teachers, parents, and deaf individuals with LD who are currently struggling with agencies and institutions that disallow the concurrent classification of a deaf individual as learning disabled. Such exclusionary policies inappropriately complicate or limit access to LD services for deaf people. These results and further objective evidence of the occurrence of dyslexia and other forms of LD in the deaf population will aid educators and disability activists in their efforts to eliminate such policies and to advocate for specific LD services for deaf people.

Note: [AN XXXX] represents a local NTID publications designation. Please include when requesting copies of these publications.