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## **English for Deaf Students: Assessing and Addressing Learners' Grammar Development**

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### The Importance of English Skill Development

Deaf learners generally experience tremendous difficulty in acquiring spoken languages in contrast to their natural and effortless acquisition of signed languages. Without full access to the sounds and intonations of a spoken language, the acquisition process for deaf learners is often labored and unnatural and occurs at a much slower rate than for hearing learners (Quigley & King, 1980). Some deaf learners are somehow able to compensate for the lack of auditory access to the spoken language and attain native-like knowledge of the language. However, many deaf learners accomplish only partial acquisition of the spoken language and experience persistent difficulties in reading comprehension and written expression.

For deaf students in the United States, it is clear that a sound knowledge of English is a critical factor in students' academic success and the attainment of gainful employment. At the National Technical Institute for the Deaf (NTID) in Rochester, New York, Vice President Robert Davila and Dean Alan Hurwitz have re-emphasized the importance of English for enhancing students' success by calling for the infusion of English teaching principles not only in the English language courses that students take, but throughout the college curriculum (Davila & Hurwitz, 1999). For students--both deaf and hearing--in non-English-speaking countries, English skill development is also becoming a critical educational need. A good, functional knowledge of English is essential in these countries for accessing the wealth of English-language information disseminated via the World Wide Web and through other educational and technological sources.

### Overview of Deaf Students' Knowledge of English Grammar

Expression of grammatical relations. With respect to deaf students' knowledge of the grammar of English, research has identified specific sentence structures on which many deaf students have persistent difficulties. Unlike languages with freer word order, such as Czech, English has a strict basic word order for expressing the grammatical relations SUBJECT VERB OBJECT (SVO) in simple sentences. English language learners quickly acquire this basic SVO word order and, in the case deaf learners of English, come to overgeneralize SVO order to other structures that actually exhibit non-SVO orders. Consequently, whenever the basic SVO order is "disturbed" in a more complex sentence, the resulting sentence structure is one that often poses a challenge for deaf students in their reading comprehension and written expression.

English structures in which patterns of major constituents deviate from the basic SVO order include passive formations, questions, sentences containing relative clauses, and sentences with infinitives, participles, and gerunds, to name a few. In the examples below, the pattern of major grammatical relations is indicated after each sentence. Sentence (1) reflects the most basic word order pattern: S (Students) V (read) O (books). Sentences (2)-(5) deviate from this basic SVO order in various ways, as illustrated.

- (1) Students read books.  
S V O
- (2) What do students read?  
O V S V
- (3) The teacher read the book which the student found.  
S V O O S V
- (4) The students asked the teacher what to read.  
S V O O V
- (5) Finishing the book, the student completed the assignment.  
V O S V O

In sentence (2), a "wh-question," the question word what represents the object of the verb read. However, instead of appearing in its logical object position after read, what must move to the beginning of the sentence in accordance with the rules of English syntax. This wh-word is then followed by the auxiliary verb do, and the subject of the sentence finally appears in third position, followed by read, which is the main verb of sentence. This simple readjustment of SVO order, along with the insertion of the auxiliary verb do, poses a major challenge for many deaf students acquiring English (Berent, 1996b; Quigley, Wilbur, and Montanelli, 1974).

In sentence (3), although the main clause conforms to the expected SVO pattern, the second half of the sentence (which the student found) does not. This portion is a "relative clause" that describes the book. As in English wh-questions, the wh-word in a relative clause moves to the front of the clause. Therefore, which, which represents the object of the verb found, precedes the student, which is the subject of the clause. Not surprisingly, sentences with relative clauses have been shown to pose considerable difficulty for deaf students in reading comprehension and written expression (de Villiers, 1988; Quigley, Smith, & Wilbur, 1974).

In sentence (4), the first part of the sentence again conforms to the expected SVO pattern. The second part does not, and even appears to have missing elements. In an "infinitive clause" such as what to read, the wh-word must move to the front of the clause, just as in wh-questions and relative clauses. In addition to the fact that what, the object of the verb read, precedes the verb, there is no explicit subject in the infinitive clause. In such infinitive clauses, the logical subject of the infinitive verb must be inferred. In this particular sentence structure, it is the students who will do the reading, not the teacher. Research has shown that the proper interpretation of such sentences is difficult for many deaf students (Berent, 1983). With respect to sentence (4), many deaf students would interpret the sentence to mean something like "The students asked the teacher what he or she was reading." That is, they would interpret the teacher as the logical subject of the infinitive to read because the teacher is closer to the infinitive than the noun phrase the students is.

In sentence (5), the participle finishing begins the sentence and is followed by its object, the book. The sentence continues with the main clause, the students completed the assignment, which exhibits normal SVO order. Such sentences are extremely challenging for deaf students because the sentence as a whole deviates from SVO order and especially because the sentence does not begin with any noun phrase at all (Berent, 1988). It begins with a verbal form. As in infinitive clauses, the logical subject of the participle must be inferred. In (5), the logical subject of finishing is interpreted as the students, which is the explicit subject of the main clause.

Regarding English grammatical structures that deviate from expected SVO order, Berent (1988, 1993) found that the relative order of difficulty that deaf college students experienced on

a variety of structures generally correlated with the extent to which structures deviated from expected SVO order.

Interruption of major grammatical constituents. In addition to deviation from expected SVO word order, research has demonstrated that deaf students are less successful on English sentence structures in which major grammatical constituents are interrupted by other structures than on those in which major grammatical constituents are not interrupted. English relative clauses are a good example of this phenomenon (Lillo-Martin, Hanson, & Smith, 1992; Quigley, Smith, & Wilbur, 1974). Sentence (3) above contains a relative clause that follows the object of the main clause (the book). The sentence is repeated as (6) below with the relative clause underlined.

(6) The teacher read the book which the student found.  
S V O

(7) The book which the student found explains English grammar.  
S V O

In contrast, sentence (7) contains a relative clause (underlined) which interrupts the main clause constituents. The relative clause occurs between the main clause subject (the book) and the main clause verb (explains). Such structural interruptions contribute to the challenge, for deaf students, of interpreting which noun phrases are associated with which verbs. Some students, for example, would interpret part of the meaning of sentence (7) as if "the student explains English grammar."

Distance that constituents move from logical positions. Another factor contributing to deaf students' difficulty in acquiring English pertains to the distance that certain sentence constituents move from their logical, underlying positions. For example, Berent (1996b) found that deaf college students' success on wh-questions was associated with the distance between the wh-word (e.g., who) and the particular position that the wh-word would occupy in a non-question. The following sentences illustrate the point.

(8) Who translated the sentence for the student?  
S V O

(9) Who did the teacher help \_\_\_\_ with the translation?  
O S V

(10) Who did the student say the teacher helped \_\_\_\_ with the translation?  
O S V S V

The students were most successful on wh-questions like (8) because who occurs in its logical position as subject of the verb translated. The students were less successful on questions like (9) because who has moved to the beginning of the sentence from its logical position (\_\_\_\_) as the object of verb help. The students were least successful on questions like (10) because who has moved to the beginning of the sentence from a "deeper" position, in this case the position of the object of helped in the embedded clause. This fact is apparent from a response to (10) such as "The student said the teacher helped the visitor with the translation."

Establishing identity between sentence constituents. In order to comprehend and to produce English sentences correctly, language learners must recognize that some sentence constituents refer to the same thing. That is, they are identical in reference. In some cases, there is identity between two explicit constituents as in the case of a pronoun and its antecedent. In

sentence (11), for example, the pronoun it is identical in reference (refers to) the noun phrase a book.

(11) The student bought a book and started reading it.

In other cases, the relationship is more subtle. In the *wh*-questions (9) and (10) above, the learner must recognize that there is identity between the *wh*-word who and the object position (\_\_\_\_) from which who moved. Establishing identity between constituents is also necessary to interpret sentences containing infinitives, gerunds, and participles. As noted above with respect to sentence (5), repeated below, language learners must be able to interpret the logical subject of the participle in order for the sentence to be understood.

(12) \_\_\_\_ finishing the book, the student completed the assignment.

In this case, referential identity must be established between the empty subject position (\_\_\_\_) before finishing and the subject of the main clause, the student. Research has shown that deaf learners of English often have considerable difficulty establishing identity of reference (Berent, 1983, 1996a).

Summary. As outlined above, deaf students' knowledge of English grammar is influenced by a variety of properties of sentence structures, which are outlined in Table 1. These properties interact. For example, the movement of a *wh*-word from its typical, logical position within a sentence to the beginning of the sentence, as in *wh*-questions and relative clauses, not only upsets the typical SVO word order of a clause; it also creates an empty position that must be perceived and interpreted by the language learner. The language learner must be able to establish identity between a moved constituent and the empty position from which the constituent has moved. All of the properties in Table 1, which are normal properties of spoken languages, can pose a formidable challenge to deaf students learning English.

Deviation from expected Subject-Verb-Object word order
Interruption of major grammatical relations by other constituents
Longer movement of constituents from their typical logical positions
Establishing identity between two or more sentence constituents

### Classroom Methods for Assessing and Addressing Deaf Students' Grammar Development

In view of the challenges confronting deaf students as they develop skills in English grammar, teachers need to recognize where students stand in their grammar development in order to best address individual students' needs. Standardized English tests are certainly one option available. However, there are some classroom methods for assessing students' grammar development that can be quite useful. These methods can be employed as pretests at the beginning of a course, as post-tests to monitor students' grammatical growth, or as classroom exercises on specific types of language structures.

Converting statements to questions. One indirect method for classroom assessment of grammar skills consists of a traditional exercise in which statements are converted to questions. In the following examples, students are given a statement with a noun phrase underlined. They must rewrite the sentence as a *wh*-question, changing the underlined portion to who, whom, whose, what, etc., as the case may be, and making all other required changes to form an

appropriate English wh-question. In each example below, the (a) part is the stimulus sentence and the (b) part is the expected response.

- (13) a. The teacher saw the student at the bookstore.  
b. Who(m) did the teacher see at the bookstore?
- (14) a. The director thinks that the lawyer's secretary will visit Prague.  
b. Whose secretary does the director think will visit Prague?

This method simultaneously taps several aspects of students' grammatical knowledge. It taps the ability to select an appropriate wh-word or phrase, to move the wh-word or phrase to the beginning of the question, to use the auxiliary verb do, to mark do with the appropriate tense, and so on.

Sentence combining. Another useful indirect method of assessing deaf students' grammar development involves a sentence combining technique. This technique can be used, for example, to assess deaf students' knowledge of English relative clauses. In the examples below, the student is expected to incorporate the (b) sentence into the (a) sentence, with the (b) sentence becoming the relative clause portion of the new combined sentence. The student should be told to use the words who, whom, whose, or that, as necessary, in the new sentence. For each example below, the (c) portion is the expected target response (the relative clauses are underlined).

- (15) a. Zora likes the teacher.  
b. The teacher explained the answer to the students.  
c. Zora likes the teacher who/that explained the answer to the students.
- (16) a. Ludvik saw the teenager.  
b. The baby poured the milk on the teenager.  
c. Ludvik saw the teenager who(m)/that the baby poured the milk on.
- (17) a. Liba rescued the man.  
b. The woman pulled the man's uncle from the fire.  
c. Liba rescued the man whose uncle the woman pulled from the fire.

Establishing identity: Infinitives. A third useful indirect method of assessing deaf students' grammar development requires students to decide who the logical subject of an infinitive is in sentences containing infinitive clauses. In each example below, the student reads a sentence containing an infinitive clause followed by a question about who will perform the action described by the infinitive. Of the two choices to the right of the question, the student must decide which person will perform the action of infinitive. (The correct responses are underlined.)

- (18) a. Jan told Marije to close the door.  
b. Who will close the door?                      Jan              Marije
- (19) a. Milan asked Karel what to buy.  
b. Who will buy something?                      Milan              Karel
- (20) a. Vaclav was told whom to visit.  
b. Who will visit someone?                      Vaclav              another person
- (21) a. Rada was asked where to sit.

- b. Who will sit somewhere? Rada another person

All three of the indirect methods illustrated above can be used for assessing deaf students' levels of grammatical development, for addressing students' individual needs, and for monitoring students' progress over time. Research on deaf students' English language development has shown that students' abilities on these very specific aspects of English grammar correlate with their overall English proficiency as measure by standardized tests (Berent, 1983, 1996a, 1996b).

Writing sample analysis. Perhaps the most useful method for assessing and addressing deaf students English grammar development is the direct method of analyzing students' productive writing samples. Teachers can assign various topics for students to write on that will elicit a variety of language forms and structures. For example, "What did you do during summer vacation?" will naturally elicit past tense verb forms from students, whereas "What will you do after you graduate?" will naturally elicit structures for expressing future time. Whatever the topic, careful analysis of students' productive writing samples allows teachers to assess students' abilities in most areas of English grammar--use of verb forms, articles, wh-structures, prepositions, subordinate clauses, etc.--and to monitor students' continued development of these grammatical forms and their functions over time.

A direct assessment method such as writing sample analysis has certain advantages over indirect methods of assessment. With writing sample analysis the teacher obtains a fairly accurate picture of the student's true grammatical knowledge. Although written language samples are not the same as spoken language samples in terms of naturalness and spontaneity, with deaf students written samples are realistically the best "window" to a learner's grammatical knowledge.

Furthermore, a written sample can uncover facts of learners' knowledge that might be disguised in the results of indirect assessments. For example, in work in progress (Berent, in preparation), data from deaf college students' productive writing samples has revealed that, contrary to the assumptions of many teachers, students at high, mid, and low English proficiency levels do, in fact, produce sentences containing relative clauses. However, the productive samples indicate that the deaf students mainly produce relative clauses like those in (22) and (23), which are not introduced by a wh-word. The students appear to have very little knowledge of relative clauses involving a wh-word that has moved to the beginning of the clause from a deeper position, as, for example, in (3) above.

(22) Here is the book that I read.

(23) Here is the book I read.

### Factors Influencing the Learning of English by Deaf Students in the Czech Republic

With respect to teaching English to deaf students in the Czech Republic, factors related to first-language acquisition, second-language acquisition, and the special situation of deaf students learning the grammar of a spoken language are all involved. These interacting factors will present unique challenges to deaf students who are studying English in a non-English-speaking environment. Teachers of such students should carefully observe their students' abilities in reading comprehension and written expression in order to assess and address the special needs of deaf students in such a novel situation.

There are some obvious features of the Czech language that differ from English and that might influence students' grammar development in the form of "language transfer." Table 2 lists three areas where English and Czech contrast.

Table 2 Contrastive Features between English and Czech		
	English	Czech
Required subject pronouns	YES	NO
Strict word order	YES	NO
Use of definite and indefinite articles	YES	NO

All finite verb forms in English must have an explicit subject. Therefore, when a finite verb refers back to a noun phrase that has already been mentioned, a subject pronoun is used, as in She reads books. In Czech, when the reference is clear, the subject pronoun is not used: Reads books. Given this fundamental difference, we can hypothesize that deaf students who know Czech might tend to omit English subject pronouns in their written productions.

With the exception of questions, relative clauses, and a few other structures, English finite clauses follow a strict SVO word order, as noted earlier. In contrast, Czech clauses have fairly flexible word order, and word order plays a central role in signaling old versus new information. For example, Duskova (1985) found that, in Czech scientific texts, a noun phrase representing new information occurs at the end of a clause approximately 90% of the time, whereas in English scientific texts new information occurs at the end approximately 50% of the time. Such differences in information structure can have a major impact on deaf learners' reading comprehension in English and on their written production.

Related to word order is the issue of article usage. Czech does not have the equivalent of the English articles the and a/an for marking definite and indefinite noun phrases (e.g., the book versus a book). Instead, Czech marks definiteness through word order and intonation (Cummins, 1998). Even though deaf students in English-speaking countries generally have great difficulty mastering article usage, deaf students in a Czech-speaking environment might be expected to have even greater difficulty with English articles, not only because Czech does not have articles, but because of their expectations about where definite and indefinite noun phrases should occur in a sentence.

The features outlined in Table 2 are just a few examples of areas where cross-linguistic differences might influence deaf students' development of English grammar skills, over and above the general challenges confronting deaf students learning spoken languages.

### Responsibilities of Teachers of English to Deaf Students

Understanding the processes of language acquisition and the challenges confronting deaf students as they attempt to learn English is important for all teachers of deaf students. Unfortunately, many teachers of deaf students work in complete or relative isolation. In contrast to the hundreds of thousands of teachers worldwide teaching the millions of hearing students of English as a second (ESL) or foreign language (EFL), the number of teachers of English to deaf students (and the number of students) is, relatively speaking, extremely small. Therefore, these teachers have unique responsibilities, summarized in Table 3, that can contribute to their success as teachers and their students' success as learners.

Table 3 Some Responsibilities of Teachers of English to Deaf Students
Pursue professional development activities
Take advantage of methods and materials for Teaching English as Second/Foreign Language
Take advantage of emerging computer and internet technologies (where available)
Experiment with new methods and approaches
Observe, record, and monitor students' progress in English
Share experiences (successes and failures) with other teachers of deaf students

First, teachers of deaf students should participate in ongoing professional development activities (conferences, workshops, reading journals, etc.) that familiarize them with the characteristics and learning needs of deaf students. Secondly, because teaching English to deaf students is similar in many respects to teaching ESL/EFL to hearing students, teachers of deaf students should take advantage of the vast ESL/EFL field, in terms of both teaching methodologies and teaching materials. In addition to existing ESL/EFL books and journals, there are ever-increasing resources available through the World Wide Web. Thirdly, teachers need to be bold in experimenting with new techniques for teaching English to deaf students. Historically, teaching English to deaf students has been frustrating, given the slow progress that many students make. Therefore, teachers need to creatively experiment with any and all methods that might lead to new successes for their students. Fourthly, given the relatively small body of research devoted to teaching English to deaf students, teachers of deaf students must take on the responsibility of carefully observing and recording their English students' progress in terms of specific skill development and relative difficulties and successes. Such observations and recordings can serve as valuable databases for collaborative research. Finally, teachers of English to deaf students should share their experiences--both their successes and their failures--with other teachers of deaf students. Teacher and student success can be facilitated through networking and collaboration among teachers and other professionals serving deaf students.

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