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ENFI: A System to Promote Reading and Writing

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EHFI: A SYSTEM TO PROMOTE READING AND WRITING¹

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How does one approach the teaching of reading and writing in English to speakers of another language? Does one first work only on oral proficiency and wait until the language level is sufficient to process reading materials, or does one use the reading materials to reinforce language learning? Research has shown evidence to support both sides of this controversy (see Alderson 1984, for a discussion).

What if one's students have no recourse to the phonological component of the language in question--if oral proficiency cannot be used to facilitate the acquisition of literacy because the students are unable to speak or hear what is being said? These are issues that must be faced by teachers of the deaf. My focus in this paper involves an even more complex language issue: the learning of English by deaf foreign students. In this case the difficulties caused by the missing oral component are compounded by the fact that the teacher and students may not share a sign language. Not only do these students have to learn written English, they must also learn the sign language used by the teacher and/or the other students. How might one go about teaching these students to read and write in English?

I had originally decided not to discuss the language issues faced by teachers of the deaf, but without an understanding of these issues one cannot fully comprehend the impact of the instructional program I describe later. The question of which language to choose for teaching deaf children to read, write and communicate in general is as complex if not more so than the controversy over the use of Black English Vernacular in school.

The literature and emotional arguments which deal with this issue are too numerous to discuss in detail here, but I will attempt to provide a basic understanding of the complexities involved in the choice of instructional language in this setting.

First, when one discusses language in relation to the teaching of the deaf, one is not simply trying to decide if a child should be taught in his or her native language/dialect or Standard English. The medium of language itself is in question. Should an oral/aural medium be imposed on children with little or no aural ability, or should they be allowed to use the more easily accessible manual/visual medium offered in the use of sign language? If one chooses the oral/aural medium, fifty percent of those sounds which carry meaning that are not visible on the lips (Jeffers & Barley 1971) will most likely be lost, and all communication becomes a guessing game. If one opts for sign language, the next question is which one to choose: Manually Coded English (MCE), Pidgin Signed English (PSE) or American Sign Language (ASL).

It has been argued (Stokoe 1972) that MCE and ASL are in a diglossic relationship, with MCE being the H, or high² variety of the manual languages, and ASL being the L, or low³ variety. Others (Baker & Cokely 1980; Woodward 1973) claim that these two varieties are on extreme ends of a continuum, with PSE falling somewhere in between. Lee (1982) argues yet another interpretation of the relationship between the manual languages, claiming that in fact there are two types of PSE: that used by hearing signers (PSEh) and that used by deaf signers when communicating with the hearing world (PSEd). Quigley and Paul (1984) propose that there might be two continua, one for users of PSEd and one for users of PSEh, and that these are parallel rather than adjoining.⁴ If one accepts this theory, then manual communication between a hearing teacher and his or her deaf students involves the simultaneous use of more than one language variety.

There is yet another diglossic situation that can be put forth. For hearing people there are definite differences between most oral and written discourse (Tannen 1981). I believe that for deaf readers and writers these differences form an even sharper

boundary, as MCF or any variety of sign language that incorporates all the morphemes of a language is rarely if ever used by deaf signers in face-to-face interaction. The special forms of communication that are involved in writing must be learned for the "high" functions of language, but these features can and should be reserved for print.

Another instructional language option which became popular in the 1970's (Nix 1975) combines spoken English and ASL signs presented simultaneously with the spoken words. This method is called "total communication" and seems to offer a compromise between the information lost to deaf students in oral English and the lack of exposure to Standard English when signing is the only form of communication. Others (Crutchfield 1972; Jones 1979) have claimed that a signed language based on English word order does not give the children the fluency and options of a real language such as ASL, nor does it give an accurate representation of English, and therefore may be detrimental to initial language learning. They claim that the deaf child must first internalize a sign language before being taught English through an ESL approach.

Topol and Baran (1980) discuss three different total-communication classrooms in which the teachers had very different foci: one teacher focussed on communication at the expense of the lesson content or language forms; one focussed on the lesson content at the expense of ease of communication or use of standard English; and the third signed very careful exact English at the expense of ease of communication or lesson content. Topol and Baran relate the focus taken by the different teachers and the type of manual language used to those aspects of spoken language which the students in each different classroom learned. The three teachers use obviously different strategies, with the results that the children in one class learn more about discourse strategies than about the lesson, children in the second class learn about lesson language, and the third class learns about English language but without the practice in interpersonal communication necessary for the acquisition of meaningful language.

This brief summary of the problems involved in deciding what language, or even what medium or media, should be used with deaf children does not address the issue of what the children are exposed to before they enter school. It is rarely made clear in the literature on language instruction for the deaf when terms such as "language deprivation" and "word" are used whether this is in reference to spoken language, or whether a signing system is taken into account. I have been unable to find statistics on the languages children are exposed to before they begin school. Only ten percent of the deaf children born in this country are born to deaf parents, but even for some of these children the only language input is oral English (Corson 1973); other children are exposed to PSE or MCE (Brassel & Quigley 1977) instead of the expected ASL. Some hearing parents try to learn ASL, or at least PSE, to communicate with their deaf children; however, it is difficult for parents to become fluent in a new language, especially a language in an unfamiliar medium, quickly enough to begin giving children vital language input.

With the diverse language media and degree of language exposure at home--oral English, the various forms of manual language, the occasional oral English with cues such as fingerspelling or Cued Speech, or little or no language input at home--it is no wonder that a teacher in a typical deaf classroom has problems teaching the reading and writing of English.

One approach to enhancing English instruction for deaf students was proposed by Staton (1984). She claimed that dialogue journals provided practice in reading and writing English in a non-threatening setting. The students wrote about anything that interested them, and the teachers responded in a written conversational mode. Incorrect grammar was not corrected, but the proper English forms were modeled by the teachers in their responses to the students. New vocabulary was introduced by the teacher, but it was left to the student to decide if it was a word s/he wished to use. Language was used in a communicative context, and students learned, through teachers' modeling and questions,

how to use language for a wide variety of functions, as well as having the opportunity to see grammatically correct structures.

With advancing technology many instructors have found that the computer is useful for teaching. Computer assisted instruction (CAI), which involves vocabulary and grammar drills on computer, is useful for giving the student immediate feedback on their responses (Lesgold 1983). Computers also provide a medium that has been shown to be more motivating than paper and pencil drills.

Research (Daiute 1985) has shown that writing on a computer has also been beneficial for students. Seeing their work in neat, typed form helps them to write more. The fear of poor handwriting, while most noticeable in young children who are first learning how to write, persists for some students throughout their school years. The computer can help alleviate this anxiety and allow the message to become more important than the formation of letters.

At Gallaudet University in Washington, D.C. a program has been developed that incorporates the advantages of the neatness and immediate feedback of the computer with the communicative reading and writing of dialogue journals. This program, called English Natural Form Instruction (ENFI), involves class instruction on a series of networked microcomputers. The teacher and students at the college preparatory and college levels are each seated at individual microcomputers through which classes are conducted. When one wishes to respond to something that has been written, one creates a message and sends it to all the other computers on the network, where it appears tagged with the sender's name. The advantage of this system is not that class can be conducted more quickly than it could be in sign, because it takes longer to type and read than to follow a face-to-face interaction. The advantage is that the class is conducted in print, promoting reading and writing. As with dialogue journals the teacher is able to model grammatical English; as with CAI the students receive immediate feedback. All is done in a very legible medium.

Students also have an opportunity to learn from other students as well as from the teacher

Another advantage of this system is anonymity. As one class discussed, on the computer no one is deaf, no one is young or old, and even the male/female distinction is often blurred. One teacher encourages this anonymity by having the students use fictitious names which can change each class period. These names help with the development of a persona or voice in the interaction.

The vastly different language backgrounds of the students become less of an issue if the interaction is all written. It no longer matters that some students cannot understand Signed English, while others cannot understand ASL. That foreign students may not have the same signs in their first language becomes unimportant in the ENFI class. The major goal of the class is the acquisition of written Standard English; the medium of instruction in ENFI is written Standard English, and the students are more motivated to write in Standard English than they would be to sign in MCE or some other form of sign that incorporates all the Standard English morphemes and structures. As Batson (1986) points out in the EnfiLOG (the newsletter put out to inform interested people of what is happening with the ENFI program), a swimming instructor does not teach a child how to swim by lecturing, and then telling him or her to go to the pool and use what has been taught for homework. One learns how to swim in the water. One learns how to read and write by reading and writing. The ENFI method allows this reading and writing to take place in a communicative context with immediate and legible feedback.

This system can be used for many different purposes. In the classes I have observed thus far I have seen it used for everything from collaborative writing to grammar drills. In the ESL class that I observed there was only one student who might have been at a level to begin writing (the others were still grappling with "My name is..."), so the system was used for conversation practice. The students were exposed to conversational norms and Standard English constructions, and they were expected to

create standard constructions themselves. The teacher rarely gave drills, but he did correct the students' grammar, and often asked them to repeat the correct forms. Sign communication was employed frequently in this class on the day I observed. The students asked the teacher in sign for a word they did not know, or the teacher used sign to confirm and clarify what the students had intended to communicate in writing when the written message was not clear enough to interpret. It will be interesting to see if the use of Sign decreases as the students become more proficient in English.

I was able to obtain transcripts of this ESL computer interaction from their first day on the system until the end of the first semester. While I have not had the opportunity to do a formal analysis of these transcripts, a few general patterns are evident. I also discovered from my day of observation that the transcripts on their own cannot explain what is really happening in the class. For fuller understanding I would need to have been present at more than one class session. For example, the transcripts are often hard to follow because there are frequent gaps in the written conversation where messages were signed during the interaction.

The class from which the transcripts were obtained epitomizes the problems presented by mixing students of varied language backgrounds and different proficiency levels. Not only is the ENFI program new, but this class is involved in a pilot program that was begun in September of 1986 called "English Language Institute" (ELI), which provides foreign deaf students with a chance to learn or improve their English. This program is designed to bring the students to a level of English that will enable them to pass the University entrance exam. The class meets thirty hours each week. This time is spent in computer instruction, both with CAI drills, ENFI networking and individualized classroom instruction. They also take trips around the city which give the students a broad range of experiences (not to mention a common topic to discuss on the network). In the class I observed, which I believe may be the only class at this point, there are three students, all

of whom had arrived in this country only a few months before my observation, one teacher, and a part-time teaching assistant.

Dan is a highly motivated student from Taiwan. He reads and writes Chinese, and his native sign language is Taiwanese. He has studied English, and at the beginning of the year tested on about a third or fourth grade level of English proficiency, so he began the class with a strong language base from which to work. He reported to me that he had a friend visit him in Taiwan who used ASL signs, and he decided to learn it himself; when he arrived in this country, therefore, he already had a good range of ASL vocabulary and was able to communicate with the teacher and other students from the beginning. He does not, however, know ASL structure, so he is more comfortable with the more "hearing" students or those who use PSE.

Ahmed is from Qatar, and he studied in Kuwait. He can read Arabic at least well enough to look up words in the dictionary, and probably better, but I had no way to determine this. He began the class with no concept of English structure and almost no English vocabulary. The first step taken with him was to teach him the alphabet so that he could look up words in his dictionary. The sign language that he used was also different from ASL or PSE, but by the end of November he did not seem to have any problems communicating with the other deaf students.

Mark is from Honduras. He had had some English instruction before arriving at the University, and had some English vocabulary, but little concept of English structure. His grasp of Spanish does not seem very strong either, as he did not recognize words such as "problema", even when the concept was explained to him. I do not know what type of sign language is used in Honduras or what his grasp of ASL was before arriving, but by November he was able to communicate well in sign with the teacher and the other members of the class. At one point he asked me what color my eyes were, and I spelled "a-q-u-a", forgetting that his "first" written language was Spanish. His response was

(roughly translated from sign), "Yeah, water. Like the sea." This showed me that he had a grasp of abstract language.

The teacher is American, but he has travelled extensively. He taught English in Taiwan for six years and in many other countries, as well. He is presently teaching a class in Chinese to American students in addition to this English class. He is fluent in Chinese, speaks and writes Spanish and several other languages, and now is learning Arabic from Ahmed. He is able to sign Chinese and Taiwanese Sign Languages, and I am sure there are others he has not yet mentioned. He is interested in computers and their educational adaptations and is constantly writing programs for his students to use in class. Many of these programs involve putting their textbook exercises on computers so they have a new medium with which to work and so that they can receive immediate feedback on their input.

I have not met the teaching assistant, but in reading the transcripts I have learned that she is a recent graduate from Gallaudet, and that she, like all the undergraduates there, is deaf. Her command of English is good but not perfect, and the teacher often corrects her grammar when they are on the network.

Visitors are always welcome in this class, so the students receive written language input from a variety of different people with a variety of backgrounds. Often the teacher and the visitor will hold a conversation on the network at a level that the students are not ready to produce, giving them an opportunity to see more complex language than they would normally deal with.

I had hoped to do a sort of quantitative analysis of intervals throughout the transcripts, but the sorts of things I found myself counting did not really seem to reflect the nature of the change in interaction over time. Therefore, I will attempt a more descriptive approach in this paper.

The first interaction on the first day the computer was in use was between the teacher, Mark, and Ahmed. Dan had not arrived yet. The interaction lasted for a total of 62

lines. The teacher had a large percentage of the input. The students' input was short and mainly in response to questions from the teacher. Ahmed only contributed five comments to Mark's 14 and the teacher's 66. Of Ahmed's five comments, three were in response to questions directed at him, as were four of Mark's 14. Mark asked three questions, Ahmed, none.

By the last day of class for which I have a transcript (Dan was working independently and not participating on that day), there were a total of 177 lines of interaction. The teaching assistant was responsible for 37 of them, and the teacher, 104. Ahmed had increased his output to eleven lines, four of which were answers to questions directed at him, and five of which were questions directed at the others on the network. Mark produced 25 lines of text: three of questions, seven answers, and five "off-the-wall" comments totally unrelated to what was happening in the interaction.

As just this brief numerical description might show, numbers do not do justice to the interaction that took place among these participants. In the opening interaction the teacher was very much in charge, and the students were unable or unwilling to do much more than follow his lead. By only the second day of class Mark was beginning to contribute his own news: "my Mother and My sister come gallaudet today" (sic). Such contributions give the teacher information from the student to build upon in sustaining the interaction.

The first few sessions were used to go over exercises from their workbooks, but this ended when the teacher's aide joined the class. The network time became much more conversational after that, and the students began to try their knowledge of English in a communicative setting rather than for drill and practice.

The teacher took his topics from the students or what was happening in the classroom around them. He often changed topics in the middle of an interaction to follow up on something unrelated that a student had interjected, to answer a student's question,

or to give an unplanned mini-grammar lesson if a constantly recurring mistake had been made by a student once too often.

The early interactions rarely lasted for more than one or one-and-a-half pages of transcript, but later interactions stretched for four to five pages, possibly showing that the students' ability to sustain a conversation increased with time on the network. This increased ability to sustain the interaction was evident even when no teaching assistant or visitor was participating in the "conversation".

As in classroom learning, each student had his own individual way of approaching the network and using it to his own advantage. The qualitative gains made by the students seemed to vary, as well.

Dan, in his first encounter with the ENFI network, responded in only short sentences, most of which were grammatically perfect. As his typing improved and he began to feel more confident with the system and with the English language, his sentences became much more complex, much longer and much less correct. The teacher encouraged him to write shorter sentences, and this he began to do, but his sentences remained innovative and creative as he tried out new vocabulary and played with the various sentence constructions he was learning in the classroom. He took a lot of time in creating a message, perhaps because he was afraid of making mistakes, or perhaps because he was not yet comfortable with the keyboard or with the English language. Interview data are needed to clarify why he requires so long to produce a message and why he does not say very much on the system.

Ahmed appeared to be very concerned with the form of his input, most likely due to the teacher's constant correction of everything he wrote. On the day that I observed he was writing down the unfamiliar words that he saw on the screen, looking many of them up in his dictionary and then carefully composing a message to send. When the teacher gave the corrected form of Ahmed's message, he would look frustrated and return to his writing and looking up until he had again constructed what he thought was an appropriate

comment to add to the discussion. Again, information not included in the transcript is needed to interpret the history of Ahmed's frustration.

Mark did not seem to care what was transpiring on the screen in front of him. He would usually respond to a direct question with a short answer and then contribute his own thoughts regardless of what else was going on. He used the network to experiment with new words that he came across, such as telling the teacher one day in September to "Have a nice Day Dipshit", or adding his comment "LET'S GET COZY" to the middle of a discussion about eating lunch. His smile every time he sent one of those messages seemed to show that he realized that the teacher found his "off-the-wall" comments amusing. By the beginning of October, Mark began correcting many of his own mistakes in word endings and punctuation. He would send his message and then write the missing element under his first sentence, in the same way his teacher had been correcting him. At the beginning of the semester he was using many Spanish constructions, but toward the end of the semester many more of his comments came closer in form to Standard English. He also began using a few ASL constructions, and the teacher explained the different uses of ASL and SE to him.

As for actual grammatical improvement over the three months of transcript, that cannot be reported quantitatively. The percentage of ungrammatical messages is actually greater on the final transcript than on the initial one, but the quality of interaction and language exchanged between the students and teacher, the students themselves, and the students and the teaching assistant and visitors is much richer in the later transcripts than in the initial ones. The students seem to change from being scared to write anything but the simplest grammatically correct phrases to being able to ask, complain, inform and perform many other functions of language in written English in a form that is almost always interpretable.

All this is to say that work on what can be accomplished with the ENFI system has barely begun. There is much to be done to help understand how and if this system helps promote better reading and writing of English. Some sort of quantitative system of coding

will be developed for analyzing the transcripts, and a more careful categorization of what exactly is going on must be decided upon. The ENFI learning program incorporates authentic reading and writing with immediate feedback, access for both teacher and student to transcripts of everything that occurred in class, and a meaningful communicative context. In theory, such a program cannot help but promote better reading and writing skills for *all* its users, not only for the hearing-impaired. It remains to be seen if research will bear this out.

This has been my first attempt at looking at data from the ENFI project. I plan to continue work in this area and would appreciate any comments or suggestions on ways to approach looking at the facilitation of reading and writing acquisition through this system. I expect to have access to a class of American students that are preparing for the Gallaudet entrance exam; thus the language issues, while still highly complex, will not be as involved as those of the students described in this paper.

¹ This paper was written for "Teaching Reading to Second Language Learners and Adults" with Professors Lytle and Landau.

² The H, or high, variety of a language in a diglossic situation is used in formal/structured settings such as a religious service or a classroom. See Ferguson (1959).

³ The L, or low, variety in a diglossic situation is used in normal/everday settings such as a conversation with a friend (Ferguson 1959)

⁴ This is not to say that speakers on one continuum cannot communicate with speakers on the other. The situation is somewhat analogous to two speakers of different dialects being able to understand each other, even though some of the forms they use differ.

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