

A Preparatory Study of Producing a CD-ROM of American Signs for Deaf Students to Learn English in Japan

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Abstract: English is a very important subject at schools in Japan. The primary intent of teaching English is to foster communicative competence and international understanding. For deaf students, learning signs to communicate with deaf people in the world is practical and valuable along with learning written English. We are trying to develop a material for deaf students who learn English using one of the textbooks authorized by Ministry of Education, Culture, Sports, Science, and Technology, which are edited for the students at regular schools. The material contains a dictionary of American signs with English and Japanese translations in a CD-ROM.

Key Words: CD-ROM, English, signs, communicative competence

1. Background

1.1 General system English instruction in Japan.

In Japan, almost all students begin learning English in the first year of junior high school at the age of 12. (See Fig. 1.) English is a required subject in junior high school, and listening and speaking practice is particularly emphasized. After three years

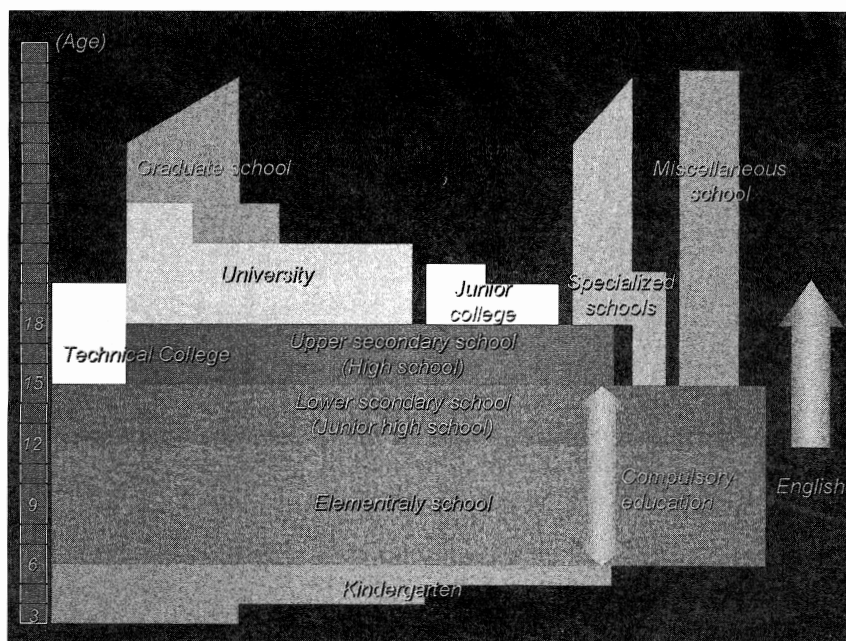


Fig. 1 The Japanese school system and English education

of education, 97% of the graduates enter high school¹⁾ and continue learning English for 3 more years. The primary intent of teaching English is to foster communicative competence and international understanding. Nowadays, the fostering of oral communication is encouraged, with listening and speaking competence being considered to be as important as reading and writing skills²⁾. Schools have assistant language teachers in their classes and let the students enjoy communicating with native speakers of English and directly learning more about the thinking and way of life of people living in other countries.

1.2 What about deaf students?

Students with hearing impairments are not excepted from English instruction. In the junior high and senior high school departments of schools, deaf students learn English using textbooks authorized by the Ministry of Education, Culture, Sports, Science, and Technology (MEXT), which are edited for the students at regular schools³⁾. Most of the teachers, however, are hearing and without any training to teach English to the deaf student. There is no specialized curriculum for teaching English to the deaf. Guidelines for the Deaf Schools simply state that “the curriculum of English classes at deaf schools should follow that of regular schools, although special attention should be paid to students’ individual abilities” (MEXT 1999)⁴⁾. Many schools use textbooks that are 1-2 years behind the regular schools, and the teachers feel it difficult to teach English in the same way as with hearing students.

In addition, there are many students who are at regular schools and learning English with hearing students. Those students usually have no supports to understand what the teachers and other students are saying in the classes. Sometimes they have to take comprehension tests by listening, in the same way as hearing peers, to assess their English competence.

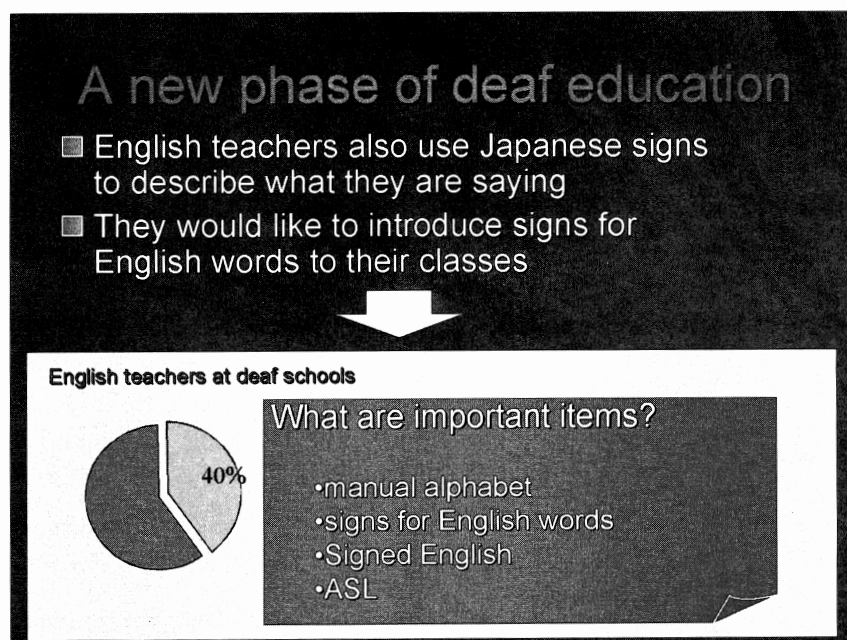


Fig. 2 How English teachers need to introduce signs

1.3 A new phase of deaf education

Oral education had been a matter of course for a long time in Japan. But there was a transition in the 1980s, when sign language began to be accepted as a necessary method for deaf people⁹. Nowadays, many schools for the deaf accept and utilize signs in the classrooms. English teachers also use Japanese signs to describe what they are saying. Now, however, they are considering introducing signs for English words to their classes. According to a survey carried out in 2002 by the Association of English Teaching for the Deaf and Hard of Hearing, 40% of all English teachers at deaf schools consider the manual alphabet, signs for English words, Signed English, and/or ASL to be important items⁹. (See Fig. 2.) In order to foster communicative competence, sign language plays an important role for deaf students, allowing them to communicate with people all over the world with signs. If deaf students have assistant language teachers who sign, they can enjoy direct communication, just like hearing students. And, to teach a foreign language, signs representing words of the language will be useful.

1.4 Problems of introducing signs to English classes in Japan

Unfortunately, most of the English teachers at deaf schools in Japan have little knowledge of deaf people abroad or inadequate experience to communicate with foreign deaf people. Often, they don't know American or British signs at all. Nowadays, however, many materials for learning signs are produced and sold. Some of these are books with illustrations or still pictures of signs with written descriptions. Others are videotapes with motion pictures, sometimes with captions and voice. Finally, CD-ROM dictionaries have recently become popular.

If the teachers at deaf schools introduce American signs, they need some references based on the content of authorized textbooks, at least based on their vocabulary. Our aim is to produce a useful collection of American signs to be used by English teachers at deaf schools. We recommend the use of American signs to teach English because many deaf people we meet in Japan can use them.

2. Procedures

2.1 Selecting materials

We received funding from MEXT to carry out this project for the 2000-2002 academic years. We are making a glossary based on a textbook for junior high school that is widely used in Japan. All of the textbooks are renewed in April 2002, according to the renewal of the National Curriculum Standards Reform. Before producing the intended CD-ROM, we carried out a preparatory study using a series of old textbooks used up until the 2001 school year. The textbooks have a word list at the end of the book. We are making a CD-ROM with motion pictures and a handy book with a description of each sign corresponding to the words in the list, so that the teachers and the students can use and learn the words presented with the standard textbook used in classrooms. This CD-ROM will be new material for teaching English to deaf students in Japan.

2.2 Videotaping

A part-time lecturer of English at TCT who had taken graduate courses at CSUN

(California State University at Northridge) and who is a very fluent signer of ASL agreed to serve as the model for the signs. She showed us the signs for the words listed on the last pages of the textbook in alphabetical order. If a word has two or three meanings, such as “light,” “poor,” and “well,” we checked the text to determine the context in which the word appeared and discussed which sign to show. We videotaped the signs and produced a tape of the entire vocabulary list.

At this stage, we tried to show as many words as possible, including the irregular past and past-participle forms of verbs, idioms, and rare proper names such as “Asian Health Association” when they appeared in the vocabulary list.

In the process of expressing each word, we checked several dictionaries of ASL^{7,8)}, SEE⁹⁾, and SE¹⁰⁾ published in America. We found there are some variations in the signs, for example, those standing for “what,” “all,” and “he”. We videotaped the variations and then tried to pick one preferred sign to avoid confusion in the classroom. To select this preferred sign, we mostly referred to Bornstein’s Signed English.

2.3 Making a dictionary

The videotapes were edited into each sign and saved using the MPEG-1 format. This format was chosen because it has better quality and portability than other formats when we considered the CD-ROM capacity. The captioned and non-captioned movies were saved into two different folders, with each, respectively, having the same numbered file names in the two different folders.

The two variations were shown to deaf students, and it was found that the captioned movies worked better for the students at the initial stages of instruction when using the system as a dictionary. In the captioned version they can see the sign and the English word in the same window, and there is no difficulty in checking the meaning of the sign if they know the equivalent English word. In contrast, the non-captioned movies were found to be useful for testing student learning, with students guessing at the meaning of a sign when it is selected and appears on the screen.

Consequently, we produced two types of dictionaries, one with captioned and the other with non-captioned movies, and a random system of showing the included words, like a set of word cards, allowing students to learn the signs and to test their memory. We call the system a “random card system.”

The dictionary has a list of words in alphabetical order, and jumping keys to go to the first word for each letter of the alphabet.

2.4 Random card system

The random card system has a window that shows a movie, two text fields, and two buttons. The two text fields display the English and Japanese words for the sign. The two buttons are initially labeled “question” and “answer.” When the user pushes the “question” button, a non-captioned movie appears in the window. (See Fig 3.) At the same time, the names and functions of the two buttons change to “replay” and “answer.” (See Fig. 4.) If the user pushes the “answer” button, the English and Japanese words are displayed in each of the two text fields, and the button labels change back to “question” and “replay.” As a result, if the user would like to see the same movie again, he can push the “replay” button. If he wants an action other than

replay, he will push the “question” button. (See Fig. 5.)

2.5 Memory Game

In the same CD-ROM, we have created two types of card games, which are called memory games or “Shinkeisuijaku” in Japanese. In the first game, 18 randomly selected signs and the corresponding 18 English words are scattered onto 36 cards that are displayed face down on the screen on two boards of 3 by 6 each. (See Fig. 6.)

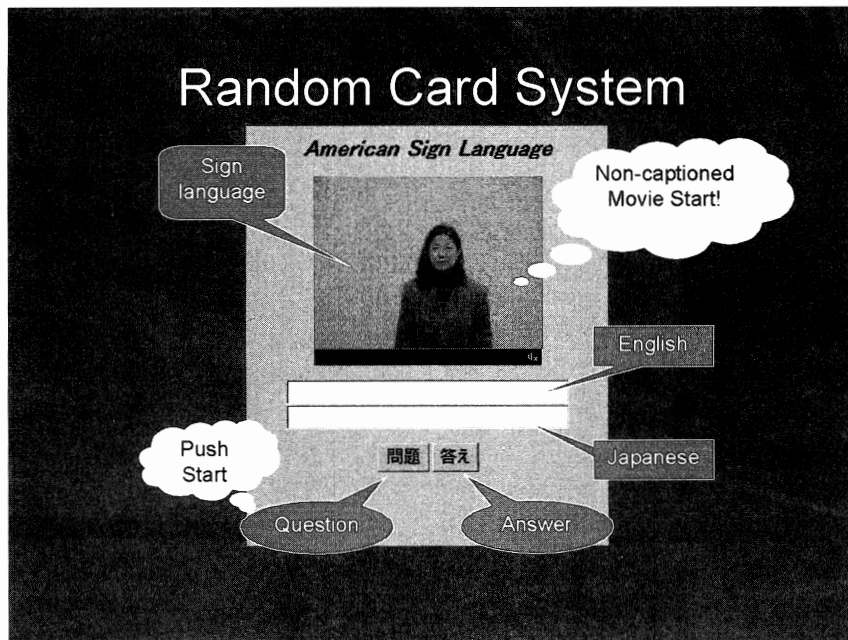


Fig. 3 Random card system

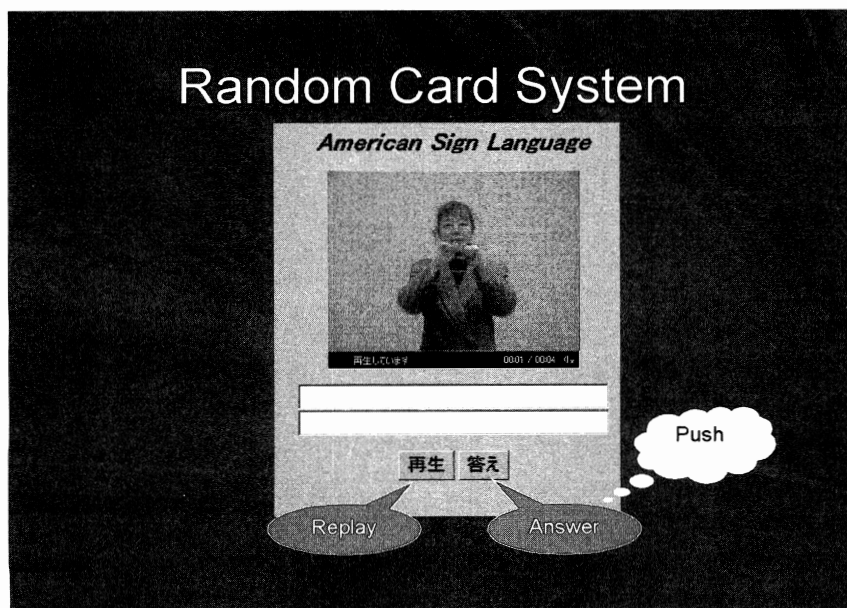


Fig. 4 Seeing the motion picture of a card

The screen has two windows to show the other side of the two cards picked up by the player. If the player succeeds in matching the two cards, the cards are kept face up on the board. When the player finishes clearing all of the cards, the game window displays how long the game has taken and how many clicks were necessary to complete the game to encourage the student to try again and improve his record. (See Fig. 7.)

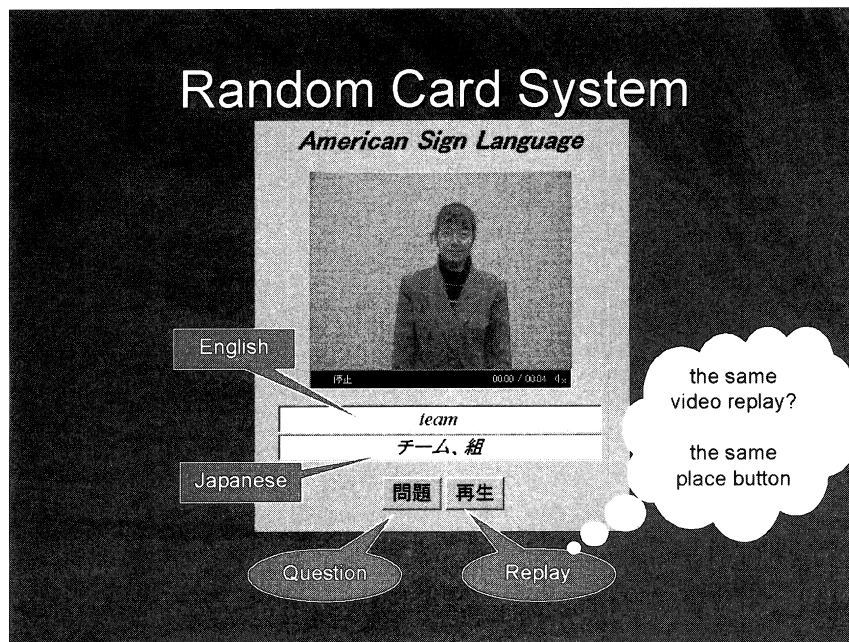


Fig. 5 Seeing the answer of a card

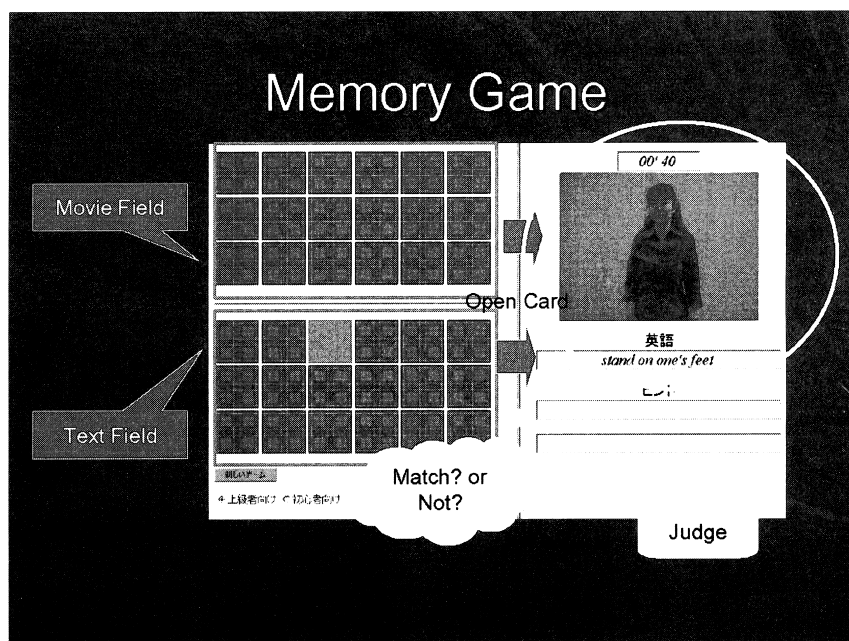


Fig. 6 Memory game (1)

We created another version of the same game using captioned and non-captioned movies for the advanced learners who know most of the signs included in the vocabulary list. While playing the game, the student's memory will be reinforced and he will become more proficient in signing the words. (See Fig. 8)

These systems were built using HTML (Hyper Text Markup Language) and Javascript, meaning that the user can use the systems not only by directly inserting the

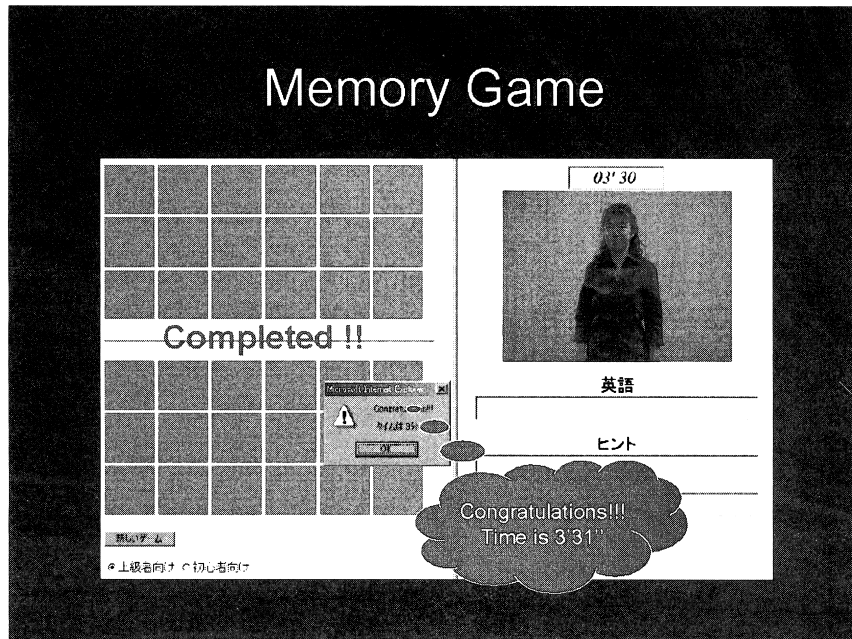


Fig. 7 Memory game (1) cleared

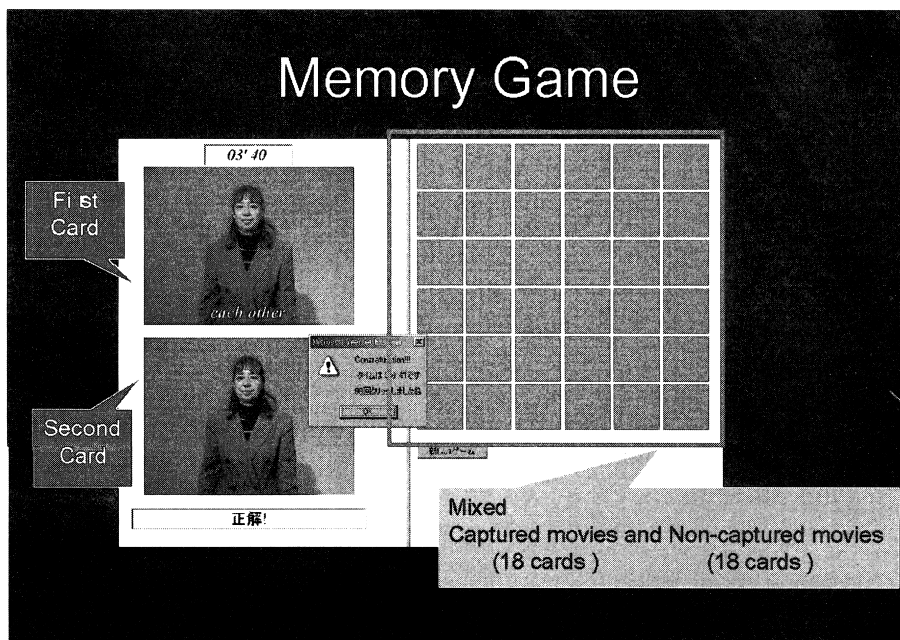


Fig. 8 Memory game (2)

CD-Rom into the computer, but also by storing all of the data (program, graphics, and movie files) in a WWW server and file server. No optional software is needed to share the system in a classroom and to control it in a center. Furthermore, the user may use the editor to change the combinations and create new original games as he likes.

3. Using a trial sample

3.1 At an oral deaf school

We brought a sample of the program to the biggest and most advanced deaf school in Japan, where students are educated orally. We demonstrated our work to the six English teachers. Teachers in the high school department had more interest in the program than in the junior high school department. At the junior high, students primarily communicate orally in Japanese, and the instructions are given without signs. As such, there seems no need to introduce signs for English words to them.

The teachers in the high school department, however, showed strong interest in the program. They use Japanese signs to communicate with the students in the classroom along with voiced Japanese. Many students are from all over Japan, and some of them have a wider knowledge of and greater interest in signs than those in the junior high department. The students' English competence varies widely, and introducing signs seems helpful for some students. Moreover, the students who had come from the junior high department had learned English using the old textbook, which our sample program was based on, and this material seemed very useful for those students.

3.2 At a local deaf school

We also brought the sample program to a local deaf school that might be considered to be an average deaf school in Japan. At the senior high school department, we had a chance to directly demonstrate the program to the students. We were offered three classes, two of which were regular and one of which was for a mentally retarded student. In the regular classes, students showed extraordinary concentration when they played the memory game. They gave us some tips regarding arrangement of the display such as the placement of letters and the frame size. Even the mentally retarded student, who had just learned to operate the computer, enjoyed the games immensely.

We believe our material was not a mere novelty for them, but a strong stimulus that greatly aroused their intellectual curiosity.

4. Conclusion

Our 3-year project, which includes both CD-ROM production and an authorized English textbook is not yet completed, and we can show only the trial sample today. By the end of next March, however, we will have a more complete version of the program and will be able to distribute our work to deaf schools so that it can be used by the teachers and students.

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