

French Cued Speech: Teaching French in a Mainstream College Classroom

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Numerous deaf and hard-of-hearing students at Rochester Institute of Technology expressed interest in studying Beginning French I, II and III for a variety of reasons: to learn the language of their culture or ancestors; to travel in francophone countries; to pursue graduate studies in which a foreign language is required; to learn a new language and culture. To provide these students access to French language courses, we redesigned the three beginning-level French courses to ensure inclusion of deaf students as full and equal members of the class.

In the several previous attempts to provide deaf students access to French language classes, sign language interpreters had employed American Sign Language (ASL) while mouthing French words and occasionally fingerspelling key words in French to interpret for the French spoken in class. This method created a double standard for the deaf and hearing students in the class; whereas the hearing students benefitted from exposure to the target language, deaf students admitted their tendency to read the interpreter's ASL, not lipread the French. To ensure deaf students' equal exposure to French in the classroom, we incorporated French Cued Speech (CS)--le Language Parlé Completé (LPC)--as a primary mode of communication in the beginning French sequence. We hypothesized that instruction of and in LPC would enhance deaf students' reception of French and their learning of grammatical structures and vocabulary; would provide visual reinforcement of correct French pronunciation; and would facilitate interactions among both deaf and hearing students. We chose to adopt LPC because of the significant phonemic differences between French and English, as well as because it is already a well-researched and widely-used mode of communication in France, Belgium and Switzerland. Researchers found that the use of LPC enhanced reception of the spoken message (Perier, Charlier, Hage and Alegria, 1988), facilitated language acquisition (Hage, Alegria and Périer, 1990) and improved acquisition of reading skills (Leybaert and Alegria, 1990).

Used primarily to teach French to deaf French children, LPC has not been documented as an effective tool to teach French as a second language to deaf and hearing college students in the United States. A telephone interview with Dr. Carol Frankel, Associate Professor of Foreign Languages and Literatures at Gallaudet University revealed that she used a simplified version of Cued Speech (not LPC) to teach a French conversation course to college students who did not have a French background. Other studies have documented the use of American CS to teach phonetics to hearing students (Beaupre, 1977) and improve auditory discrimination of Chinese students learning English (Chapman, 1984).

Preparation

Team members redesigned the course, developed teaching materials, and studied LPC during the 1994-95 academic year, one year prior to our pilot. To train to use LPC, we studied thirty hours with Dr. Catherine Quenin, Speech Language Pathologist/Cued Speech Instructor. Learning the LPC cues took ten hours. Building fluency and speed required 20 hours more. We supplemented this instruction with the audio cassette lessons developed by Denis Mermod of Geneva, Switzerland, in collaboration with Dr. Orin Cornett of Gallaudet College.

To facilitate teaching students LPC, we reconfigured the course meeting times to allow for three hours of regular class meeting times, allotting the fourth hour for a lab experience. Students would choose between a "Listening Comprehension Lab" and a "Pronunciation Lab." We were cognizant of the political climate at NTID that followed the release of the film, "The Land of the Deaf" that associated oppression of the deaf with Cued Speech and oral training in general. We, therefore, believed that the success of the lab and deaf students' willingness to use Cued Speech depended on hearing students also seeing the value of cued speech. Indeed, the fact that equal numbers of deaf and hearing students chose the "Pronunciation Lab" and learned LPC promoted a very positive classroom environment. We marketed LPC as a visual tool--one among others--to aid pronunciation by showing the subtle differentiations in French pronunciation that are often difficult for second-language learners to perceive and produce. We anticipated completing the presentation of the system in the ten-week fall quarter, using winter and spring quarters to review and reinforce the cue system and to help students enhance their speed and fluency.

To facilitate the students' learning process, we worked with NTID's Instructional Design Department to produce charts displaying photographs of a speaker demonstrating the LPC hand configurations and positions. We also developed pronunciation guides presenting the French phonological system (according to the Larousse Dictionary) and materials to teach pronunciation and LPC simultaneously. These weekly handouts were designed to teach the pronunciation of three to

five French vowels, consonants, and semi-consonants, their orthographic spellings and cues. We developed additional exercises, drills, and games, occasionally adapting or expanding ancillary materials (videotapes and audio cassette scripts) to the main textbook, *Invitation*, (Jarvis, Bonin, Birckbichler, 1993). To expedite the learning of LPC for new students enrolling in the course in the second term, we prepared an instructional videotape of the LPC system with the expectation that students would spend more time outside of class learning the system. This videotape proved an invaluable tool for review as well.

Subjects

A total of 18 college students enrolled in the Pronunciation/Cued Speech Lab during the 1995-96 academic year. The students' backgrounds were diverse. Nine students were hearing. One student had a mild unilateral hearing loss. Eight students had a bilateral hearing impairment: three were profoundly deaf and five were severely deaf. Sixty percent of the deaf students had a prelinguistic onset of hearing loss. Eighty percent were consistent hearing aid users. Lipreading skills and auditory reception of spoken English ranged from an inability to identify key words in sentences to 100% accuracy. Speech intelligibility ranged from non-intelligible speech to being completely understood.

Many of the deaf and hearing students had an international background, and a variety of languages were spoken at home (e.g., Chinese, Greek, Spanish, Macedonian, Russian, etc.). All of the deaf students also knew a form of sign language (e.g., American Sign Language, Pidgin Signed English). None of the deaf students and several of the hearing students had any previous experience learning French while six of the hearing students had studied French in high school or at another college. None of the students had experience with LPC.

Procedure

Enrollment levels varied throughout the year. The highest enrollment for the course and the Pronunciation/LPC Lab occurred in Beginning French I: Fourteen students--seven deaf and seven hearing. During the second ten-week lab, three deaf and five hearing students were enrolled in the lab, including one new deaf student and two new hearing students. By the third quarter, two deaf and three hearing students were enrolled in the lab.

As students were learning LPC, information was presented in a variety of communication modalities: Pidgin Signed English, speaking, writing, fingerspelling and cueing. When English was spoken, the general course instructor and the lab instructors would sign Pidgin Signed English. When French was spoken, the instructors would fingerspell. Twice a week the lab instructors also attended the general class and served as sign language and voice interpreters. As the students learned more cues, fingerspelling was replaced with LPC. The general course instructor also used LPC in the classroom to assist with the reception of French by the deaf students and to provide feedback on the pronunciation skills of both deaf and hearing students. By the end of the year, French was presented using only LPC in the lab. At this point, in the general classroom, the lab instructors served as LPC transliterators.

The primary goal of the first ten weeks of instruction was for students to learn the hand configurations and vowel positions of the LPC system. For each lab meeting, we used the following cue training hierarchy: 1) cues in isolation, 2) cue syllables, 3) cue vocabulary words, and 4) cue short phrases. The instructors modeled the new cues and requested that each student reproduce them. The cued vocabulary words were then used to reinforce grammar points from the text (e.g., definite articles, gender, verb conjugations and tenses). The newly learned cues were subsequently incorporated into an oral activity adapted from the course *cahier* to review a grammar point. Students engaged in receptive practice by recognizing the cue for the correct grammar point or vocabulary word. In addition to producing cues correctly, expressive cue practice also included pronunciation drills on vowels that are often confused, *liaison* formation and nasalization versus denasalization. We strongly felt that the Pronunciation/LPC Lab should be closely coordinated with the general class. Therefore, the groups of cues taught during a session were partially determined by the grammar presented in the preceding class. For example, the general class learned some salutations to engage in a brief conversation. During the next lab, students were introduced to the cues for the vowels /a/, /y/ and the consonants /l/, /v/ and /s/. By the end of that lab, the students had learned to cue "Salut! Ça va?" "Ça va."

We encountered certain difficulties during the first quarter of the Pronunciation/LPC Lab. Although we had planned to present the entire LPC system in the first ten weeks, the speed for learning the cues was slower than anticipated. Ten fifty-minute sessions did not allow for sufficient receptive or expressive practice. In addition, the misperception among the hearing students of what Cued Speech is created some concerns and fear that they were being required to learn sign language and French simultaneously. Finally, the lab instructors experienced some hesitancy about appropriate levels of work they could expect from students. However, when the instructors began to make their expectations clearer and more rigorous, students responded in kind. Perhaps it was this hesitancy as well as the political climate that caused students initially to question the value of the LPC system. But by quarter's end, many of the deaf students had "lightbulb"

experiences. For example, in the midst of a grammar drill, tired of fingerspelling "Qu'est-ce que c'est," one student asked the general course teacher if there was an easier way. The teacher responded by cueing the phrase. The lightbulb of understanding lit up the student's face as he seemed to recognize one of the benefits of the system.

During the second ten-week lab for Beginning French II, two new hearing students and one new deaf student enrolled. These new students learned the LPC hand configurations and positions by working with the instructional videotape outside of class; returning students used the videotape for review. To keep up with the general class curriculum, the lab focused on understanding more complex grammatical points through the use of cues. Students were also required to become more familiar with their dictionary's pronunciation system in order to determine the correct pronunciation and cues for a word. In lab, the instructors provided receptive practice in a variety of ways. Cueing was used to review vocabulary, conjugate new verb tenses and reinforce grammatical points. Scenes from *Causons*, the accompanying video program of the course text, were captioned. Multiple-choice, yes/no questions and fill-in-the-blank questions were cued for receptive practice, and students had to cue the correct response. Pronunciation tips focused on the subtle differences between vowels (i.e., /ɛ/ versus /e/). Students also had numerous opportunities to practice reception and production with a partner. During this second ten-week lab period, hearing students opted to work with other hearing students, and deaf students worked with other deaf students.

We perceived a significant change in attitude in this second lab period. The new students took cueing seriously, thereby motivating the returning students to do the same. As a result, by the end of the second ten-week lab, all the students had learned the entire LPC system, and we began to see all students cueing at a faster pace and with greater accuracy both in class and on their videotaped assignments. Students were cueing phrases, sentences and entire conversations, and they were demonstrating their ability to make *liaisons*, an important feature of French and LPC. One of the new deaf students in the class quickly became a model for correct grammatical use of French and of LPC. She cemented this role by winning a game of *Jacques Dit* (Simon Says). Although the hearing students had full access to the auditory information as well as the cues, the deaf student won the game and the admiration of her peers. This recognition on the part of all lab students of a deaf student's leadership in the class was instrumental in lending credence to LPC as a legitimate learning and communication tool. This ten-week lab session proved to be a turning point; the students were making clear connections between cueing and the French language.

By the third quarter (Beginning French III), three hearing and two deaf students were enrolled in the lab. French was cued by the instructor, and the students on a regular basis both in lab and in the general classroom. Pronunciation tips and advanced grammar points continued to be presented. If the context was known, the deaf students rarely missed information cued by the instructor or the other students. Fill-in-the-blank activities were also cued without voice to assess the reception of cues and knowledge of grammar. Both the hearing and deaf students clearly received the information. Throughout this third ten-week lab period, deaf and hearing students were partnered with each other on a regular basis to practice conversational level cueing and to provide feedback on each other's cue accuracy. Initially, one hearing student was hesitant about working with one of the deaf students because of his concern about their ability to understand each other. The deaf student convinced the hearing student to work with her because they would be able to communicate clearly using LPC. This ability to communicate through LPC was reinforced near the end of the quarter when all the deaf and hearing students were working together as a group to produce their final videotaped presentation. The students were attempting to carry on their informal discussion in English, but were hindered by constant unclear communication because the common modality, LPC, was not being used.

Assessment

Speech Perception Tests

For the pilot study, four speech perception tests were developed to assess students' ability to recognize French vowels and consonants with and without cues. The two vowel lists and two consonant lists were recorded on videotape by a female Cued Speech Transliterator who was familiar with LPC. The first lists were recorded without cues, and the second lists were recorded with cues. There were fifteen items on the vowel tests and nineteen items on the consonant tests. Each item was presented in a five forced-choice identification format and included foils which were considered to be visually indistinguishable without cues. Vowels were presented in groups of 5 (e.g., /a/, /ɛ/, /i/, /u/, and /y/). Consonants were presented in CV clusters (e.g., day, tay, lay, kay, and nay). The first vowel and consonant list for each test was presented audition plus lipreading without cues, then the second list was presented audition plus lipreading with cues. The four tests were administered as a pre-test and re-administered following ten, twenty, and thirty weeks of cue training.

Videotape Evaluations

Students' pronunciation and cue proficiency were evaluated on an on-going basis through the use of assigned videotaped conversations. Each conversation was held with a lab partner. The initial scripts were generated by the instructors while subsequent scripts were student generated. The scale used for the speaking tests, traditionally administered in the course, was modified to be used for the video analysis. The evaluation scale of the speaking tests ranked the areas of fluency, vocabulary, structure and comprehensibility of pronunciation on a five point scale (one lowest - five highest). The five general categories (i.e., vowels are clearly and accurately cued with correct speech synchronization, etc.) of the Basic Cued Speech Proficiency Rating (Beaupré, 1984) were added to this evaluation tool. Expressive cueing proficiency was evaluated on the same five point scale used for the previously mentioned areas.

Course Evaluations

A questionnaire was administered on a routine basis to assess students' perceptions of the lab format and of learning LPC. Each question was rated on a five-point scale (strongly agree—strongly disagree).

Results

Speech Perception Tests

Pre- and post-speech perception measures were obtained during the first ten weeks on nine students: six deaf and three hearing. The mean pre-test scores for the hearing students was 64% on vowels without cues, 84% vowels with cues, 91 consonants without cues and 86% consonant with cues. For these students, post-test mean scores showed 18% improvement on the vowels without cues list, 3% vowels with cues, and no changes for either consonant list. (See Figure 1.)

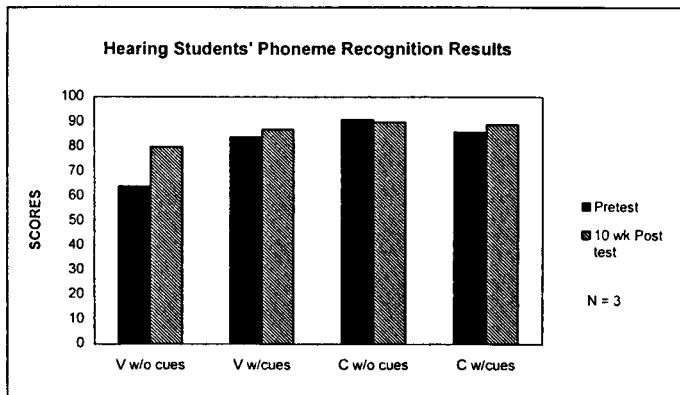


Figure 1

For the deaf students the mean pre-test scores were 39% vowels without cues, 57% vowels with cues, 54% consonants without cues and 50% consonants with cues. Post-test mean scores showed a 24% improvement on vowels without cues, 12% vowels with cues, no change on consonants without cues, and 20% improvement on the list of consonants with cues.

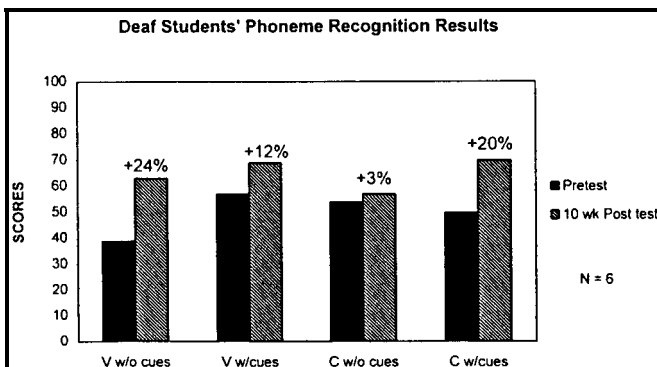


Figure 2

Overall, both groups had more difficulty perceiving vowels than consonants. For the group of hearing students, a significant difference was not seen between the cue versus no cue lists on the post-test for either the vowels or the consonants. For the deaf students, there was a broader range of scores on all of the pre-tests due to the range of auditory and speechreading skills. Post-test scores did show moderate improvements in the reception of vowels (69% average) with cues and consonants (70% average) with cues. (See Figure 2.)

Individual differences proved to be more significant than the group data. Two deaf students had a marked improvement on ability to recognize consonants with cues. The students scored 47% and 32% on the consonant pre-test and ten weeks later scored 89% and 95% respectively on the consonant -with-cues post-tests. (See Figure 3.)

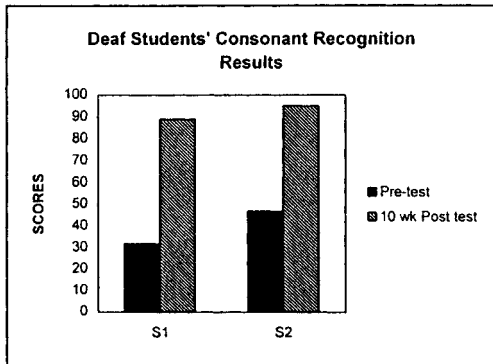


Figure 3

High scores were also seen for students who had more cue training. One deaf and one hearing student, who only took the post-tests after 20 weeks of training, scored 100% on the vowel and consonant tests with cues. (See Figure 4.)

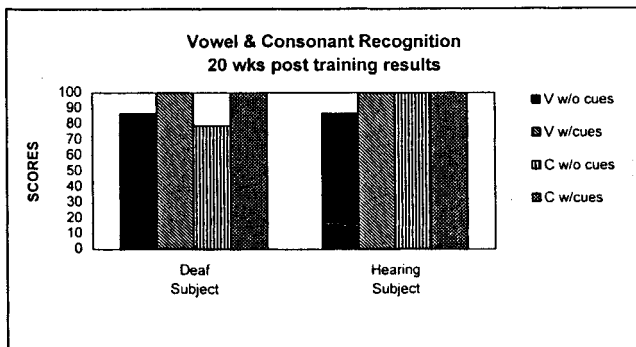


Figure 4

One of the hearing students who took the lab for 30 weeks scored 100% on the consonant-with-cues-test. One deaf student who took all 30 weeks received 95% on the consonant-with-cues post-test. (See Figure 5.)

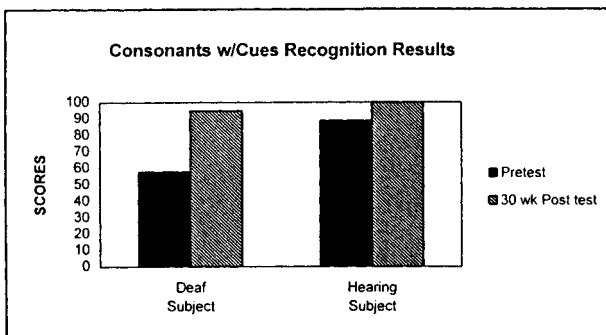


Figure 5

Videotaped Conversations

Each pair of students produced four to eight videotaped conversations during the course of 30 weeks. Students in the lab taped each conversation twice, once without cues (i.e., speaking only, fingerspelling only, or both), the second time with as many cues as they could incorporate. Each videotape was evaluated by the lab instructors and the course instructor.

During the first quarter, we observed performances which included no cues at all, one student only cueing the word "je" throughout the conversation, and at least one pair of deaf students attempting to cue nearly the entire conversation. We saw a variety of errors by the deaf and hearing students alike. Students struggled to find the correct cue from their LPC photograph chart. As a result, across the board, speech rhythm was very jerky and pace was extremely slow. In comparison to the video without cues, it was faster for the deaf students to fingerspell the conversation than to cue it. As with new users, there were numerous mistakes with hand orientation, configuration and position. Moreover, sometimes words were pronounced correctly, but incorrect cues were used. Cue blends (e.g., *trois*) were difficult to produce. Students were often unsure of the correct vowel and its position (e.g., /E/ versus /e/. The cues for final consonants were omitted or the wrong configuration was used. Syllables were missing from multisyllabic words. It was clear to the evaluators that initially the cues were not aiding the students' pronunciation skills. Indeed, sometimes the students were clearer without cueing. Students' cue scores on the initial videotapes were low (1-2).

During the second ten-week session, students were able to cue the conversations without using the LPC photograph chart. We observed that students were cueing at a better pace and with greater accuracy. Some sounds that were pronounced incorrectly were nevertheless cued correctly. Vowels were cued with great accuracy for position, and fewer mistakes were made with the handshape for the consonant. Most of the multiple syllable words were cued correctly. Cue scores ranged from 3.5 to 5, mid to proficient on the beginning language level evaluation scale.

In the third quarter, students were consistently cueing phrases and sentences. For both deaf and hearing students pronunciation skills improved with cueing, although there was still some confusion between /E/ and /e/. Speed of cueing was faster than in the previous quarter; nevertheless, cueing continued to slow down the hearing speakers. Yet, this allowed for greater precision in their pronunciation. We observed a high degree of accuracy in using correct cues for both vowels and consonants; however, errors still remained in the making of appropriate liaisons, and the pace was still a little jerky. Students who were enrolled in the lab for 20 weeks or longer achieved a basic cue proficiency level.

Course Evaluation

Eighteen students completed the lab questionnaire. Sixteen of the eighteen students agreed that learning the cue system was helpful. During the first ten weeks, however, some students also commented that learning French Cued Speech and pronunciation at the same time was confusing. Early on students also wanted more exposure and class time to learn the cues. Students stressed the importance of seeing LPC used by the teachers and of using LPC themselves in both lab and the general classroom as a motivator to learning the system.

Recommendations

1. To enhance the environment of a mainstream classroom, hearing as well as deaf students should be encouraged to learn and use LPC.
2. LPC should be introduced to students in a systematic fashion that parallels grammar, vocabulary and pronunciation being concurrently taught in class. This will facilitate students utilizing cues in class. This requires teaching assistants and the classroom teacher to work in close collaboration, meeting on a regular basis.
3. Appropriate classroom and laboratory materials that allow for visual presentation and practice of LPC need to be developed.
4. It is beneficial to teach LPC in a separate laboratory component to the regular class. Already full class plans will be overtaxed if LPC is "added" onto the established curriculum of the course. Students' participation in the LPC lab should substitute for another required lab component of the course, such as a listening comprehension lab.
5. Adequate time, both hours per week and weeks per term, should be allotted to learn the LPC system. Students need sufficient time to comprehend and internalize the concept of the system, the handshapes and positions, and to produce the cues. Additional time is needed to build up speed and fluency. Because students are

learning a foreign language during this same time, they need the opportunity to perceive LPC's connection to the target language as a representation of sound.

6. As soon as students begin to learn LPC, they should use the cues they know while speaking French. This gradual incorporation of cues serves to motivate students to learn and use the complete system. Waiting until they know the complete system before requiring its use, allows students to see LPC as a simple exercise rather than as a tool that facilitates communication.
7. The classroom teacher as well as any interpreters or teaching assistants must all use LPC in class when speaking French. This enables students to see LPC in use, to gain receptive as well as expressive practice and to recognize that the teachers value LPC as a communicative tool.
8. Students should be evaluated in appropriate (visual) ways and on a regular basis. Speech perception, pre- and post test measures and videotaping of cued conversations, are particularly valuable tools for measuring improvements over time. Videotapes must be assessed in a systematic way with carefully articulated criteria which are made clear to the students. Review of videotapes with students following the evaluation is a particularly helpful, formative activity.
9. Finally, as with any language acquisition, learning LPC requires teachers' and students' commitment to practice outside the classroom.

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