INTERACTIVE AUDIO STRATEGIES
FOR DEVELOPING LISTENING SKILLS

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ABSTRACT: This article is based on a paper presented at the CALICO '89 Sixth Annual International Symposium, Colorado Springs, Colorado. This article describes and discusses some ideas for exercise types that can best exploit the capabilities of the computer-controlled laser audio disc in the design and development of foreign language listening comprehension learning activities. The exercises considered include vocabulary recognition, discovering paraphrases, predicting discourse, and transcribing text. Some suggestions for future study are offered.

KEYWORDS: interactive audio, listening comprehension, analog audio, digital audio, laser disc, template, authoring.

Introduction

The Defense Language Institute, Foreign Language Center (DLIFLC), located in Monterey, California, is the nation's largest school of foreign languages: thousands of military linguists enrolled in over thirty languages graduate from it every year. The graduation requirements, recently raised, are quite demanding. Students are rated on their proficiency in three skills: Listening Comprehension, Reading Comprehension and Speaking. In order to graduate, they need to demonstrate a minimum proficiency of Level 2 in Listening and one additional skill, and Level 1 in the third, as measured by the Interagency Language Roundtable scale. Clearly then, developing and improving students' listening skills is a matter to which DLIFLC needs to pay particular attention.

This skill area, however, has traditionally suffered from what we might call a sort of "benign neglect" in the field of second language (L2) instruction, as borne out by Joan Morley in a retrospective on the subject (Morley 1984, 7-18). It is only in the last five to ten years that instructional materials specifically focused on building listening comprehension skills have begun to emerge, as we shall see below. And for computer-assisted materials in this area, the panorama has been even bleaker. Indeed, it is interesting to read the rather glum assessment made as recently as two years ago that "CALL ... is ill-suited for work in listening since, without additional expensive hardware, the medium cannot provide any audio,"
I think most would agree that we are confronting a far brighter outlook today. To a great extent this has changed due to the extraordinary technological advances that have taken place over the last decade which have contributed to making this medium increasingly affordable and accessible. At the same time, those same advances have presented unique opportunities and posed serious challenges to designers and developers of listening comprehension instructional materials. One area of development which is of particular interest to us in this endeavor is the gradual evolution in the use of audio equipment, from the characteristically linear mode represented by the reel-to-reel tape and audio cassette media to the far more flexible random-access capabilities provided by devices such as the Instavox, the laser disc in its various incarnations, and digitized audio. The addition of computer-assisted control has multiplied the possibilities, promises—and challenges—of designing innovative, motivating and pedagogically sound activities which could not be created at all or would simply not be as effective without it. This double capability of random accessibility and computer control gives us our first real chance to explore "interactive" uses of learning materials.

**Background and Overview of Project**

The Educational Technology Division (Ed Tech) at DLIFLC has among its responsibilities that of conducting research and assisting in the training, guidance, quality control, coordination and support for the design and development of computer-assisted language learning (CALL) projects, in response to the Institute’s various resident and nonresident requirements. One of these projects evolved precisely from the requirement to help students improve their listening comprehension performance, particularly in crossing the Level I+/2 threshold and moving toward the 2+ boundary, as that need was manifested in the Spanish Department at the School of Romance Languages. To this end, the department produced a workbook of activities with an accompanying instructor guide entitled "From Listening to Speaking," based on five Voice of America broadcasts selected for this purpose and recorded on an accompanying cassette.

Some time after the workbook was produced, Ed Tech was offered the opportunity of mastering the broadcasts on one of the two available standard half-hour analog audio channels of a laser disc (the other was reserved for number transcription activities), and Ed Tech was tasked with exploring ways of adapting these materials for use with an interactive computer-driven program. This requirement—which has its counterpart in the area of reading comprehension—has been integrated into an overall effort whose goal is to design and develop a bank or pool of activity types, adaptable to different languages, that could be included among others as templates or prototypes in a teacher’s "tool kit." A template is essentially a program that allows a teacher with
no prior computer programming knowledge to create CALL activities. There are currently a variety of templates for preparing interactive video (IAV) and reading materials, but few specifically designed for listening skills. One recent addition using MacIntosh MacLang is described in the previous issue of this journal (Frommer 1989).

An Authoring Scenario
The scenario for creating a listening exercise with the help of such tools (and this will probably be familiar to anyone acquainted with them) should work out along the following lines. Depending on the learning requirements of the moment, an instructor wishing to create an exercise based on material contained on a laser audio disc first identifies and selects the appropriate segment from the disc and picks a corresponding exercise template or templates from among those available (each could be stored on a separate floppy disk, for example). Then, and depending on what the exercise calls for, the teacher reviews the audio, logs the disc frames marking key points on the broadcast (e.g., starting and ending frames, location of targeted vocabulary items or important subsegments, and so on), and prepares the scripting documents as needed (e.g., transcript of the recording, lists of key terms, questions for the student, allowable responses, feedback, etc.). Armed with this information, the instructor then "runs" the template, and from that point on is guided in a step-by-step manner to provide the necessary information in response to menu-driven prompts (e.g., "Enter starting and ending frames of main segment," "Type in the/ a correct response for Question No. 2" etc.), in the process spawning the exercise that the student will get.

Evolution of Listening Activity Types
The activities included in the Spanish Department workbook are suitable for students in the latter portion of the six-month basic course and for those continuing on to the intermediate course. The booklet includes the following types of exercises, briefly described:

A. Vocabulary: identify synonyms/antonyms of words on list and write down as heard.
B. Paraphrase: shown a printed paraphrase of a broadcast segment, write in the equivalent that was heard.
C. Give News a Title: provide an open-ended headline for the broadcast, based on what was heard.
D. Content Check: answer open-ended and true/false questions.
E. Transcription: fill in a partially deleted text.
F. Translation: complete a partially done translation.
G. Discussion Topics for the Classroom: follow-up activities.
H. Matching: join matching halves of sentences taken from the text of the broadcast.
I. Cohesion: identify the presupposed elements in the broadcast that other items in the text refer to (anaphoric/cataphoric reference).

The very first "bare bones" attempt to convert these exercises for computer use (naturally, those that were obvious candidates: e.g., A-B, D-F) quickly led to the realization that the most valuable and unique capabilities of the new medium were being wasted and that the approach and strategies used in presenting the activities had to be significantly modified. As Underwood (1984) and others have repeatedly pointed out, we should be wary of falling in the trap of "treating the computer as a substitute vehicle for existing instructional techniques and methodologies" (Weible 1987, 67). In fact, there are strong arguments for the emergence of what this same author calls a "media-specific methodology for CALL" (Weible 1987).

Furthermore, there seems to be a growing perception/acceptance of the fact that the scope of foreign language teaching extends beyond just teaching the language, and also encompasses teaching some of the strategies involved in using the language skills being acquired. According to one researcher, for example, "it has been shown that good LI readers do not transfer their good reading strategies when it comes to reading in L2" (Thompson 1989, 34). By extension, it does not seem unreasonable to suppose that this holds even more strongly for an arguably more difficult skill to master in L2, such as listening. If so, the responsibility for providing those missing strategies—or repairing those which are being misapplied—would appear to rest even more squarely on the shoulders of foreign language teachers to the extent that we are to expect successful learner outcomes. Fortunately, and as alluded to earlier, far greater attention has been paid in the last decade or so to the issue of helping L2 students (or for that matter, LI students) to build good listening skills by encouraging them to focus on and to develop the relevant strategies (Ur 1984, Morley 1984, Galvin 1985).

All the above considerations had a bearing on the way in which the original ideas contained in the Spanish Department workbook served as a springboard for the evolution of the listening activity types described below and prompted exploring alternative approaches and techniques. Only those that have been sufficiently developed as workable possibilities are included in this discussion. Further avenues for exploration are suggested later.

Description of Activity Types

These activities were designed and developed using the Courseware Design System (CDS) (ITC Corporation, San Diego) authoring system, specifically the version released for use with the Matrox Co. EIDS (Electronic Instructional Delivery System) equipment.

Activities in four listening subskill categories are considered here: recognizing vocabulary, discovering paraphrases, predicting discourse and
transcribing (taking dictation). Although the focus is on listening comprehension, other language skills are involved to some degree in all the activities. Not listed in any particular pedagogical sequence, it must be emphasized that the following are essentially still only ideas for exercise types that we might want to incorporate into the above-mentioned author’s "tool kit." The finished, working templates remain to be produced.

A. Vocabulary Recognition
   In this category the basic objective of the exercise is to listen for and identify a series of targeted terms or expressions, equivalents or synonyms which are listed on the screen. Two variations on this activity are presented, in both of which the listening task is integrated with other skills:

   1. Broadcast Extracts. This variation (which could serve as an introduction to a topic or as preparation for some of the other activities listed here) presents the student with a series of extracts taken from a broadcast, in each of which one of the target terms to be identified is used by the announcer. After each clip is played, the student makes a selection from the list on the screen by pressing the corresponding number key and proceeds to type the term heard alongside its listed equivalent. The extract is replayed if the expression is not correctly identified from the list or if the term written in does not correspond to the one used in the broadcast. At this point the task becomes essentially one of transcribing the term, so correct spelling is expected. Corresponding feedback, confirmation and explanations of terms are given. Optionally, an allowance can be provided for equivalent terms not actually used in the broadcast: i.e., if the student types in an alternate synonym, a message is displayed saying something to the effect of "That's an equivalent expression, but not the one actually used in this broadcast. Please listen again." After a predetermined number of unsuccessful attempts, the extract is displayed with the target expression highlighted. The program then proceeds to the next clip and the sequence is repeated. Additional screens with new terms are displayed as needed, depending on the number of extracts selected for the exercise.

   2. Complete Broadcast. This activity is somewhat analogous to scanning a printed text. Here, the student "scans" for the target items while listening to the full broadcast, interrupting it at any time by selecting a number from the list and then entering a response, as above. To encourage students to develop anticipation and use whatever prior knowledge they bring to the task, they are allowed to guess and attempt to answer even if the audio is interrupted before the target items are actually heard. If the expression typed in does not match the target term, an appropriate message (similar to the one in A.1, above) is displayed, and play is restarted from a point preceding that where the target expression occurs. After a couple of unsuccessful attempts, the expression is simply displayed in context. Following an acceptable response, play resumes.
from the point at which it was stopped. The student can review any portion of the broadcast or restart it as needed, and continues the activity until all the items have been attempted.

B. Discovering Paraphrases

Activities in this category are somewhat related to skimming tasks in reading, where the objective is to recognize (discover and identify) main ideas or topics in the text. In the case of listening, the targeted ideas or topics are those portions of a broadcast whose target-language paraphrases appear on the screen (another variation would be to render the paraphrases in English). In other words, the student will read on the screen, "Instead of saying <Target Language Paraphrase inserted here> the commentator said:...." and search for the actual broadcast statement. Two versions are offered:

1. Listen and Type. The students listen for the significant portion of the narration, and respond by typing it in verbatim, stopping and/or replaying the audio as needed. The response is evaluated on the basis of whether it includes any of a series of key elements occurring in the segment which have been preselected by the instructor, and feedback is provided accordingly: i.e., any key terms or expressions not found in the students response are displayed. If there are any still missing after a couple of attempts, the target segment is replayed and displayed on the screen. Evidently, several skill modalities are involved in this exercise, including reading and transcribing.

2. Listen and Mark. In contrast to the preceding, and to allow students to focus more explicitly on the listening skill, their responses in this second variation are non-linguistic. One could think of it as the counterpart of a skimming exercise in reading where the task is for students to circle the portions of the text where a topic or idea is expressed. Analogously, in this listening situation, the task is simply to tag or mark the beginning and end of the corresponding portion of the broadcast by pressing a given key. The response is then evaluated on the basis of how close the students came to tagging the actual start and end of the target segment, and feedback is provided accordingly: e.g., "It seems you missed the opening portion of this statement," or "You didn't get to listen to the whole idea," and so on. As confirmation, or after a predetermined number of not fully successful tries, the targeted segment is played and displayed.

C. Predicting Discourse.

This activity is the listening counterpart of a reading exercise described by Grellet, which she calls "Predicting"(1981, p.56), based on an idea of Moody (1976), and is designed to encourage students to take advantage of native language listening strategies such as anticipating and guessing, and to apply them in dealing with foreign language material. As a lead in, the student hears a segment extracted from a broadcast—one that is fairly brief (sentence or clause
length), but which contains enough cues to enable the student to decide which of two possible continuations of approximately the same length was most likely used by the speaker at that point. Both continuations are then played (the one actually used and another extracted from elsewhere in the same broadcast) and, to reduce memory load, shown on the screen. If the student selects the incorrect one, the actual contiguous segments are replayed. The last broadcast segment then serves as a lead in for the next step, and these are thus successively chained, until a significant portion of the broadcast has been heard. The activity concludes with a replay of the entire passage, also displayed on the screen. Naturally, the characteristics of the text (content, level, cohesiveness) will, to a great extent, dictate the suitability and success of this exercise type.

D. Transcription/Dictation.

A more conventional activity, yet one of particular importance for our students, involves listening to a recorded text and transcribing it verbatim. The recording can be controlled at will (stopped or replayed) and revisions made to any portion of the transcription. When the student has completed it, the full transcript of the actual text is displayed along with the student’s rendition, line by line in a parallel fashion, in contrasting colors, allowing for a quick visual comparison of the two. In addition, any key words or expressions which may have been preselected by the instructor for their significance (and which could serve as a basis for scoring and rating student performance) are highlighted—in the student’s version if correctly included there, or in the original if not.

Directions for Future Exploration

A thorough examination of possible avenues of thought for CALL listening activities is beyond the scope of this article, and undertaking it requires a good route map. There is a wealth of materials that can serve as a basis for a comprehensive listening exercise typology that can very fruitfully be reviewed for just such ideas. Let us for now at least look at a few obvious starting points suggested by the discussion above.

1. Template options. Letting students decide in which language to receive the instructions; giving students (or teachers) a degree of control over features such as allowable attempts, maximum replays, availability of helps or cues, length of review times (e.g., number of seconds each “rewind” lasts), and so on.

2. Vocabulary Activities. Using matrices or charts to be filled in while listening. Of course, since the design of any such chart is largely determined by the contents of the text it is associated with, one problem with this format will be to find ways of designing suitable "generic" templates, that lend themselves equally well to a variety of different texts.
3. Predicting. This area might lend itself very well to a variety of cooperative learning tasks: e.g., jigsaw listening, information-gap activities in general, and so on. Another avenue of exploration, of particular interest to many of our students, is the inclusion of background noise or other distractions (e.g., simultaneous speakers) as part of the stimulus heard.

4. Transcription. A clear requirement at DLIFLC is to devise a procedure to score the student’s transcript automatically and yield a numerical grade. This can easily be done on the basis of the preselected key elements for a rather crude evaluation. A more sophisticated scoring algorithm based on spelling comparisons, omissions or insertions, word order, and so on, would require a bit more study. On the other hand, the very output of this activity, i.e., the transcript, in turn lends itself nicely as input for a variety of follow-up reading activities, such as recognizing organizational discourse features (cf. Harmer 1983, pp. 168ff) or the cohesion activity of the original workbook (Exercise I), is quite amenable to computer adaptation.

Conclusions

As indicated earlier, these fledgling ideas are but a first attempt at exploring and exploiting (in the best sense of the term) the possibilities given to us by the increasing availability and affordability of the medium which integrates random access audio and the computer. Somehow, one cannot help but feel that we are just scratching the surface of the methodological potential for such foreign language learning tools, along with a gnawing sensation that there is probably a whole new dimension to this enterprise that we are not seeing, and that someday someone will come along and point out the obvious to us.

One critical issue that has received only passing mention in this article, but that must not be omitted from any discussion of these matters, is the relationship that needs to be established between the activities done with the computer and what happens in the classroom. I would venture that if we are to hope for any real benefit to be derived from our efforts to prepare worthwhile, truly useful materials for student-language interaction in a computer-assisted setting, we must insure that these interactions be well integrated into the ongoing classroom instruction.

Notes

1 For a more detailed description of one project using the Instavox, see Henry et al. (1989)
2 Strictly speaking, there are three distinct departments as of this writing. For purposes of this paper I will refer to them collectively as one.
3 There are plans to prepare additional discs using digitized audio. The analog/digital coding scheme for EIDS allows up to 60 hours of audio per disc side.
References


Author's Biodata

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