# DESIGNING YOUR OWN SOFTWARE:
## An Interim Solution for Intermediate French

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The lack of sufficient or adequate foreign language software, particularly at the intermediate level and for the IBM PC, has been previously discussed in CAI/CAL literature as one of the barriers to the use of the new computer technology by foreign language students.[1] Only recently has it been stated that the situation has improved (Smith 1989). Not surprisingly, it has also been noted that some faculty, "...almost always underestimating the work ahead, will begin to write new software packages tailored to the special needs of their students" (FIPSE 1988). This is generally regarded as an interim solution.

The FIPSE group notes that in the future, "Most software and most good ideas for using it will not be homegrown; they will have to come to the institution from external sources" (FIPSE 1988). In the meantime, as individuals or small teams attempt to fill the gap, there is much overlap of effort primarily because, "The chain of dissemination is not yet well connected" (FIPSE 1988). This article will attempt to add a link to that chain by describing the design and development of one such "homegrown" effort, and its use in intermediate-level university classes.

**The Authoring Language.** Observing the distinction made by Jones (1988) between "authoring language" and "authoring system," *French Verbs In Context* was written with the help of the authoring language TEACHPRO, developed by CATSCO of Santa Barbara, California. The primary difference between a "system" and a "language" is that some programming is required for the latter. CATSCO provided the necessary training and, in return, retains the copyright and distribution rights.[2] Although Jones is correct in observing that, "A non-programmer can often begin writing lessons with an authoring language after just a few days of practice" (Jones 1988), the difficulty for most novice faculty programmers will be in finishing and polishing, not in beginning such a program. Designing and writing the "pages" or text can be creative and invigorating. Writing and editing the command code is slow, tedious work that can become excruciatingly frustrating to a humanist.

TEACHPRO is not specifically designed for foreign languages and thus, as of this writing, has one obvious flaw, it does not allow the user of the program to type in special character sets such as accents, although the programmer can use them in the program itself. This was not considered a serious drawback in 1984 when the project began, thus no serious effort was made by the programmers to provide this feature. However since then, most new software has managed some sort of multiple key approach to provide this now expected feature. The remedy adopted for this program was to avoid answers with accents whenever possible, and to add an explanatory note when accents could not be typed into an answer that required them. Students have adapted to this as easily as to the frustrating

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variety of key strokes required for current programs. One difficulty that can already be foreseen based on the testing of three different French programs by my classes, is the confusion arising from different systems of typing accents. Hope, Taylor, and Pusack comment that "...software that does not supply them [foreign character sets] should not be immediately rejected" (Hope et al. 1984), however, it might also be stated that some sort of agreement on which keys are to be used would be nice. The primary advantage of TEACHPRO was the great freedom of design. This was especially important for an intermediate-level program. A major drawback was that the developers of TEACHPRO expected the author to work alone, a situation that is increasingly being viewed as less than ideal.[3]

**Institutional Support.** Many institutions still do not give full credit towards tenure and promotion for software development. It is generally considered part of a teaching rather than a research contribution. Assistant professors are thus warned that it may be several more years before software development will be widely accepted as research. In this case, the impact of the above policy was that the project took far longer than necessary - three years for writing and one and a half years for beta testing, which is still ongoing at the University of Louisville. By the time I had finished, such items as accents and parsers were standard fare in foreign language programs. This is possibly a good argument for a team approach to software development, however I have been told that unless all participants are at the same institution, delays due to arranging meetings can be quite lengthy. There were some travel and study funds, however, for the author to learn the programming language.

**Hardware.** *French Verbs in Context* is presently implemented for the IBM PC, XT, AT, PS2, or compatibles, with 128K, and either a color or monochrome monitor. These minimal requirements should be attractive to those institutions without hard-disk units for student use, or with older equipment with less RAM capacity.

**Program Design.** *French Verbs in Context* is designed as a tutorial as opposed to a simple drill and practice exercise, such as those that are now beginning to accompany textbooks. A tutorial presents explanations and summaries followed by practice exercises (Hope et al. 1984). The five lessons each take less than one hour to complete. Variety and a low frustration level were key goals in the design. These features should also make it possible to use it either on one's own or in conjunction with a class.

**Error Processing.** Error processing is of course one of the most time-consuming elements of lesson programming. In order to simplify the task somewhat, the exercises were limited to multiple choice or fill-in-the-blank responses. This format is acceptable for a program dealing primarily with verb forms and choice of tenses, but would probably not satisfy teachers or students interested in general writing practice. The responses are either right or wrong. This too will be seen by many as a major drawback. Although parsers that supply cues as to the nature of the error are helpful in responding to errors made in complete sentences, the specifications for correcting an incorrect verb form in this program would be "check model" (for incorrect spelling of root, auxiliary, or typing the wrong word altogether) or "check person/number/agreement," which is exactly what a student does anyway when told in a variety of French phrases that the answer is incorrect. One goal of this program was to keep things simple so that it might be used without supervision. Parsers are not yet foolproof, and have been known to give silly responses to incorrect answers (cf. review of RHELT in *J.E.T.T.* Summer/Fall 1989). The alternative, anticipating every potential conjugating error, and responding to it individually, is prohibitively time-consuming.

In some exercises, mastery is required in order to proceed. In others, one can choose between reviewing and continuing after three misses. In a third type, the correct answer, with an explanation, is provided after one miss. Only the first lesson, dealing with verb conjugation, provides a score. *French Verbs in Context* offers general advice after incorrect responses dealing with tense choice or conjugation practice. In other exercises the learner is informed, with a variety of French messages, that the answer was correct or incorrect, and invited either to try again, review the lesson (i.e. go back to the explanation part), go to a prior page, or continue. This variety in dealing with errors is meant to combat boredom. In order to minimize frustration, there are frequent opportunities to escape to the table of contents in order to choose a different lesson, a quiz, or a summary story.

**Program Content.** This tutorial is not textbook specific. It treats five morphosyntactic problems of intermediate French that seem to elude easy acquisition. The patience and liveliness of the computer seemed a perfect vehicle for making them more accessible to learners. Each problem area is treated in a separate lesson, and incorporated into the running story line of "Little Red Riding Hood." In order for the French to appear as authentic as possible, the story line and most exercises use vocabulary and verb forms used by native speakers interviewed in France between 1980 and 1981, and asked to tell the story as they remembered it. The lessons stand as independent units that can be selected in any order. They are programmed as follows: I. The present tense of 16 irregular verbs used in the story line; II. The use of prepositions before infinitival complements; III. Hypothetical structures; IV. The past in narration and discourse; and V. The future as seen from the present, and from the past. The following briefly describes each lesson and gives sample exercises.

**Lesson One: The Present Tense Part A**

The sixteen verbs chosen for this lesson are orthographically, morphologically, and syntactically problematic (e.g. *s'en aller*). They also, of course, reflect the needs of the story line. Four of the sixteen (*(re)connaître, entendre, prendre, (re)venir*) are among the fifty most frequently used verbs in French, according to the study done by Rivenc in 1968. In lesson one, the verbs are first presented in the context of a simplified present-tense version of "Little Red Riding Hood." The user is then asked if (s)he would like to practice the conjugation of the verbs. If the answer is yes, the program allows the user to select the verb to be studied and then displays a page showing the present tense conjugation, followed by a sentence lacking the verb. The user must type in the correct form of the verb, while still looking at the conjugation:

Example:  Révision de Conjugaison: Le Présent

2.  cueillir

| 1s | cueille | 1p | cueillons |
| 2s | cueilles | 2p | cueillez |
| 3s | cueille | 3p | cueillent |

2. Pour qui _____ -nous ces fleurs, maman?

Tapez la forme correcte du verbe dans le blanc, ensuite <ENTER>.

This exercise is largely a matter of person/number identification and correct spelling. If the answer is correct, the user is complimented and the correct phrase is again displayed. Often, several options present themselves to students searching for an answer. Seeing the whole phrase once again, without a blank, and attached to a compliment, serves a positive, affirming, memory-enhancing function. This feature was added particularly for the benefit of

those who will use this program outside of a classroom situation, where teachers provide such positive reinforcement. If the answer is incorrect, the corrected version is displayed, followed automatically by a review of the nouns, pronouns, and phrases that lead to that person/number choice. The user is then asked again if (s)he would like to review conjugations, and which ones. When the user responds "no," (s)he is asked if (s)he would like to review the meanings of the same verbs. If the answer is "yes," the choice of which verb to study is again presented. This semantic review is somewhat different in that the verb is presented in context and then explained with two or three English equivalents - the only English used in the program. The following sample page is for *cueillir*:

<div align="center">

cueillir
Cueillons les fraises de notre jardin!
Ne cueille pas toutes les roses, chérie!
J'arrose le matin, je cueille le soir.
TO GATHER OR PICK

</div>

When the user responds "no" to both a wish to review conjugations and a need to review meanings, (s)he is presented with a score on his attempted conjugations. This is followed by a brief exercise dealing with the syntax of adverbs with present tense verbs. The lesson concludes with either a suggestion to review or to continue, depending on the outcome of the conjugation practice. The program suggests continuing if 80% of the attempted conjugations have been completed successfully.

**Lesson Two: Present Time Part B**

Lesson two still deals with the present tense, but with a different problem: when a finite form of a verb is followed by an infinitive does French usage require an intervening preposition, and if so, which one? The program suggests the most common usages found today in conversational French. The user is first given an overview of the direct and indirect structures avail-

able, then asked to select which structure (s)he would like to study. There are four choices:

1. direct structures as in "Le loup espère croquer le petit chaperon rouge";
2. indirect structures with *à* as in "Le loup reussit à éliminer la grand-mère";
3. indirect structures with *de* as in "Le loup essaie de flatter le petit chaperon rouge";
4. indirect structures with *pour, sans, par* as in "Le loup se déguise pour tromper le petit chaperon rouge."

Each selection begins with models of a number of verbs using that structure, and some special advice such as *"ne pas* précède l'infinitif."* This is followed by completion "type-in" exercises, where the user types in both verbs, with or without a preposition, depending on the section being studied. For example in the section on direct structures, the fourth exercise looks like this:

4. Le loup _____ le petit chaperon rouge, en portant le bonnet de nuit. (penser)(ne pas effrayer)

Tapez les formes correctes dans le blanc, ensuite <ENTER>.

A correct response is rewarded with the compliment "Vous avez raison!," followed by a repetition of the correct response. An incorrect response is followed by "Pas tout à fait!," and the correct response. There are a number of different compliments and corrections in French. The exercises include negative, interrogative, and imperative structures, as well as phrases incorporating an adverb such as "Un loup s'habitue facilement à croquer la viande fraîche." As in the first lesson, the user is not given a second try after an error, only a correct answer. Based on feedback from students using the software which accompanies our basic text (Random House Electronic Tutor: *Deux Mondes*) it was decided that some variety in dealing with errors was desirable to forestall boredom. The drawback is that on initial use, some students will think that the

program is malfunctioning. In general, however, students report that they prefer the variety and appreciate a quick correction in the easier exercises, so that they can "just get on with it." As the lessons get more complicated, second, and even third tries are offered. In the quiz, which can be taken at any time, there is a choice of only five answers. The user cannot go on until s(he) either gets the correct answer or (after three misses) chooses to go on.

## Lesson Three: Hypothetical Structures.

In the introduction, tense choice for hypothetical structures is shown to be based on two major parameters: present versus past point of reference, and real (or probable or possible) versus unreal (or improbable) outcome. The tricky part for students is of course that despite a present point of reference one can have in the condition or protasis a verb form that looks like a past: *Si le loup mangeait la jeune fille, il mourrait.* In the program, the learner is first asked to select one of the four basic patterns of the presentation, or s(he) may select the quiz or the appropriate story containing these structures. The following basic patterns are shown:

Conditions basées dans le *présent:*
  REELLE
  1. Si la jeune fille a faim, elle cueille une pomme.
  IRREELLE
  2. Si le loup n'avait pas faim, il ne la suivrait pas.
Conditions basées dan le *passé:*
  REELLE
  3. Si la jeune fille a parlé au loup, elle a eu tort.
  IRREELLE
  4. Si le loup n'avait pas eu faim, il ne l'aurait pas suivie.

Variations on these patterns are offered in each section. Following the models, there is a review of the conjugation of the present and past conditional. Practice exercises require the user to type in the missing verb form. The quiz at the end of each section of lesson three asks the user to type in the letter of the correct verb form. There are only four choices for each of the questions, and three misses are allowed before the program asks if you wish to continue or review the lesson. The quiz at the end of the entire lesson offers seven possible choices of verb forms for each of five questions. The same system of three misses before a choice to review or continue is used. At the end of the quiz, one can either review the lesson, return to the table of contents, or continue to a reading of the "Little Red Riding Hood" story that uses all of the hypothetical models of the lesson. The story or the quiz could have been selected from the table of contents at the beginning of the lesson, or at many points during the lesson as well.

## Lesson Four: Narration and Discourse in the Past

A basic premise of this lesson is that past tense choice in modern French depends on the type of communication involved. Narration and discourse are the two main types discussed. Newspaper usage, poetry, formal lectures, and dialectal usages are not included. The term "discourse" is used to mean "conversation" or "dialogue" as opposed to "narration." The introductory comments are based on current research on the use of the past tenses in French (Blumenthal 1986; Waugh 1985; Weinrich 1964), and on the narrations of *Petit Chaperon Rouge* recorded in France in 1980. After the introduction, the user is shown a screen which explains the difference between the use of the *plus-que-parfait* and the *passé antérieur*. This is followed by a diagram showing the relationship between the five past tense forms discussed and narration and discourse. The program then provides conjugation practice for the *passé composé*, the *plusque-parfait*, the *imparfait*, the *passé simple*, and the *passé antérieur*. One must type in the

correct form in order to continue, however the conjugation paradigm is displayed directly above the sentence where the verb must be typed in. The practice given here is in choosing the correct person/number, copying the verb form correctly, and supplying the correct gender/number agreement if necessary. On the correct answer, the program continues; on an incorrect answer there is a choice of trying again, going back to the beginning of the lesson, or "escaping" to the table of contents in order to exit or choose another lesson. There are two multiple-choice quizzes at the end of lesson four. In the first, the "Little Red Riding Hood" story is given as a written narration, and in the second, as a written version of an oral telling (where one might find the *passé compose*).

### Lesson Five: The Future: As Seen from the Past and the Present

As the section title indicates, tense choice in the future depends on point of view. The introduction explains that the future as seen from the past is the *conditional*, whereas the future as seen from the present is the *future*. The user is directed to lesson three for practice of the conditional as a mood. Another observation, based on recent research, is that the temporal distinction between simple future and "immediate" future forms is becoming fuzzy, if it exists at all for many native speakers (Fleischman 1983). The program thus coins the term "compound future" to replace the misleading "immediate" label, and in the quiz, either the compound or simple future can correctly complete a sentence. There is conjugation practice for the simple and compound futures, for the present conditional and the *future antérieur*. Exercises allow the user to select and type in appropriate forms. Correct responses cause the program to continue; incorrect responses will be corrected on the first miss. Since other paradigms are displayed on the same page as cues, the exercise consists of choosing the correct

person/number and typing the form correctly. As in lesson four, the practice exercises must be completed before the quiz, because of the importance and newness of the expository material, at least for this author's students.

The following is a sample of a practice exercise page:

### LE FUTURE COMPOSE

Essayez ces conjugaisons:

s'habiller

1. je _____
   tu vas t'habiller
   il va s'habiller
   nous allons nous habiller
2. vous _____
   il vont s'habiller


   revenir

   je vais revenir
   tu vas revenir
3. il _____
4. nous _____
   vous allez revenir
   ils vont revenir

Tapez la forme correcte dans le blanc, ensuite <ENTER>.

**Evaluation and use at the home university.** Initial beta testing was done with the help of colleagues. This eliminated most typographical errors and questionable examples. The next step was to test the program on students. *French Verbs in Context* was offered as a supplemental study aid to three sections of intermediate French (French 221) in the fall semester of 1988, and again in the spring semester of 1989. In the fall, students were given class time to use the program, under the supervision of a teaching assistant. Currently, students are being asked to use the program on their own time, with only a brief set of instructions on loading the program. As of this writing, response has been very favorable,

even among first-time computer users. In an informal questionnaire distributed at the end of the fall semester of 1988, most students reported learning the most from the two lessons dealing with the present tense. They found the lessons on the future, the past, and hypothetical structures, most useful for their class work. In a question asking them to rank common out-of-class study aids they selected the following order:

1. workbooks, films on home VCR, private tutors

2. computer programs on campus

3. audio cassette tapes, films on campus, computer programs at home

Additional comments expressed enthusiasm for the variety of praise, and noted that this feature was missed in those exercises where the program simply continued after a correct answer. Students liked having the correct response displayed after both correct and incorrect answers, although this initially caused some to assume that their answer had been incorrect. One student would have liked the conjugation practice to include hundreds of verbs, instead of just the sixteen chosen for lesson one. This would certainly make a good team project. The response to the computer program continues to be sufficiently encouraging to warrant further experimentation. The department has purchased two well-known software programs (one for the APPLE IIe, and one that requires a hard disk), and is currently using a textbook with a software package.

Although there was no collaboration on the writing of the program between the author and the computer center or language lab staff, there has been good cooperation in making the program available to students. The foreign language program temporarily shares facilities with the computer centers (for software) and the instructional communications center (for audio and video programs) on campus. These centers have been responsible for making back-up copies, circulating the software, and notifying me in case of program failures, or student difficulties. This arrangement has been moderately successful. The main advantage over a standard language lab, is that the technical support has been much better. Student aides who work in the computer lab and ICC seem to be more knowledgeable about equipment use than aides in the old language lab. Of course, they do not always have foreign language skills, and can be occasionally gruff and intimidating to students. Also, *Systéme-D*, the acclaimed French word-processor, requires a hard disk, and our computer lab has only one such unit at this time, almost always occupied. A very ideal and perhaps idealistic solution, in this author's opinion, would be for the foreign languages to have a reserved section of the computer lab, featuring word processors (installed on hard disks), printers that were set to accommodate a variety of symbols, and a technician in charge who was multilingual.

Another problem has to do with demographics. We are an urban "commuting" campus, with many students leaving campus immediately after classes to go to jobs. They almost all, for example, prefer to use the audio tape copy service and listen to tapes off campus. If software programs are to become an integral part of the basic French program, we may consider scheduling computer time into each student's class time. It would be interesting to know if such a plan has worked at other commuter campuses. It would also be most helpful to hear about other IBM-compatible intermediate-level French software that has been successfully used.

NOTES

1. An earlier version of this article was presented at the annual meeting of the Kentucky Philological Association, on March 3, 1989, in Owensboro, Kentucky.

A slightly different version was published in *CALICO* (September 1990) and appears here with permission.

2. Readers interested in further information about the program may write to CATSco, Inc. 1531 Chapala St, Suite 4, Santa Barbara, California, 93101. (Program No. 601).

3. For a concise listing of commercially available authoring systems, see R. L. Jones. 1988. Creating Computerized Learning Materials: Software Options. *MLA Newsletter* Summer 1988: 21. For a thorough bibliography of CAI for French, see P. W. Cummins. 1984. CAI and the French Teacher. *French Review* 62: 385-41.

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