

An Evaluation of Two Current Computer Software Programs for Teaching English on CD

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Synopsis

Two recent comprehensive, readily available multimedia programs on CD, Dynamic English and The Rosetta Stone are evaluated for their degree of computer sophistication and abilities to teach speaking and listening. An evaluation scheme proposed by Barker and King (1993) was used. The software was found not to utilize computer capabilities to the fullest but has value in offering unlimited repetition.

Introduction

Today, with recent advances in computer technology, and with the cost of computer hardware falling, new types of software are becoming available for teaching English. Some of these programs exploit qualities particular to computers: the ability to store, analyze and manipulate extremely large amounts of data in a small space and in a very short period of time. The technological advances have arrived at a time when the emphasis of language teaching has changed from one focused on repetitive techniques for which the computer seemed ideally suited, to communicative ones where speaking and listening skills are being accounted for.

In the present study, two teaching English CD-ROM programs were examined. They were not chosen because they were at the cutting edge of technology, but because they are current, advertised in English language teaching journals and widely available. DynEd International, a company that has a Japanese division in Tokyo (DynEd Japan), sells "Dynamic English" (copyright 1988-1994), a computer program that focuses on speaking and listening. Fairfield Language Technologies sells "The Rosetta Stone" (copyright 1993), a CD-ROM based program that also makes strong claims to teach speaking and listening skills. It was recently reviewed and received a high rating (four stars out of five) in the commercial computer magazine, *MacWorld*. These two software programs were evaluated to see how well they utilized computer technology and whether they could do things that traditional teaching methods could not. Their strengths for teaching speaking and listening were particularly noted.

The Evaluation

To evaluate software in a way that is quantitatively or qualitatively scientific, or of practical value to English teachers presents problems. In the domain of education software review, Barker and King (1993) found two broad problem areas: the difficulty of creating an evaluation scheme that would cover the broadest range of products, and the lack of acceptance that previous evaluations appear to have had among educators. They mention Tucker, who, in his paper entitled "Software evaluation: who cares?" complained that software evaluations were flawed, inappropriate and totally subjective (Tucker 1989: reported in Barker, 1993: p. 308). A research paper for the ECOSSET project (European Computing Consortium BV) that reported collected data from 19 organizations in 10 member states of the EC concluded that the evaluation activities differed widely. Some groups did not use agreed upon instruments, some used formal evaluation instruments with varying criteria and without user trials, and one group

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performed user trials with participating educators. The results of the evaluations varied widely (Bonekamp 1991: reported in Barker, p. 308).

In their study, Barker and King chose a method of “competitive analysis” to evaluate 43 items of educational computer software (mostly CD-ROM) ranging from language teaching software to multimedia encyclopedias. Their aim was to identify “hallmarks of quality” that seemed to characterize good learning software.¹ The competitive analysis method consists of a two stage process. First the software is examined by a group of trained investigators using common sense that has been established according to set guidelines. Then, empirical user tests were performed with the products. The researchers asked respondents to evaluate the software according to fifteen questionnaire categories. The chosen evaluation categories were:

1. Engagement
2. Interactivity
3. Tailorability
4. Appropriateness of multimedia mix
5. Mode and style of interaction
6. Quality of interaction
7. Quality of end-user interfaces
8. Learning styles
9. Monitoring and assessment techniques
10. Built-in intelligence
11. Adequacy of ancillary learning support tools
12. Suitability for single user/group/distributed use
13. Availability in terms of cost and delivery platforms
14. Outstanding strengths and attractive features
15. Outstanding limitations and weaknesses

Barker and King found that five or six evaluation categories were consistently indicative of “quality software,” and four so much so that none of the others seemed to matter. These items appeared consistently within software that was determined to be quality software. The four most important items are the following: Item 7 (quality of end-user interface) seemed to be important because it affected how the users perceived the product. Item 1 (engagement) received an especially high rating if audio or motion video existed because this made the product noticeably more engaging. Item 6 (interactivity) was important because user participation rated this software higher than software that only informed, and Item 3 (tailorability) allowed users to configure products to meet individual needs. None of the other 11 evaluation items came close in predicting quality software.

Dynamic English and The Rosetta Stone were evaluated using Barker and King's four main indicators of quality software. It must be mentioned that some of the questions for these indicators might appear to be inappropriate to evaluate the present software, because they were meant to evaluate software for purposes other than teaching languages. Yet, it is also possible that these evaluative characteristics could have been incorporated to good effect.

Dynamic English consists of 6 CD-ROM disks, and focuses on improving listening comprehension skills for 3 Levels, from beginners to advanced beginners. It has native Japanese language support. This means that by clicking an icon, the Japanese equivalent for all spoken and written English is given.

After loading the program, you are presented with a screen that gives the names of the buttons on the user interface. These buttons are familiar to anyone who has operated a cassette player. Clicking them, however, does nothing. After exiting this screen, the program begins. At the bottom left corner, the buttons from the previous screen are laid out and this time they do work. Besides the usual cassette player type controls, there is a repeat

button that causes the spoken and written material to repeat, and the above-mentioned Japanese translation button that gives the Japanese equivalent of all written and spoken text. At the top of the screen there are menus to access the control panel, record-keeping files and the glossary. The glossary is excellent and gives each word usage in several contexts.

The program begins with a lesson called "Names and Places" (Basic, Level 1 of 3 levels). The cartoon drawings of two faces, a man and a woman, appear on the screen. Two characters are introduced: Max and Kathy. The Narrator's voice says, "This is Max." (A cartoon picture of Max's face is shown.) Max says, "My name is Max, what is your name?" The lips of the cartoon face move and the eyes blink. The narrator's voice then asks, "Where do you come from?" Max answers, "I come from San Francisco." The narrator asks the student, "Where does Max come from?" The student must answer by clicking a cartoon drawing of a bridge with the letters "S. F." on it. The bridge is one of three choices on the screen and the student is told if his choice has been correct or incorrect.

The next sample on the disk was from "Matrix Grid" (Basic, level not given) and consisted of five cartoon drawings: an ear, a man giving a speech, a cassette player, a bird and a piano. A question is asked: "Animal is to bird as musical instrument is to what?" The answer is "the piano" and the student must click it with the mouse. A voice answers, "The piano, yes that is right." A color palette is also part of this sample and the student is asked to identify colors on a palette with the mouse.

The next sample was titled "Biography" (Basic, Level 2) and consisted of a short narration (British accented) of Albert Einstein's life accompanied by cartoon drawings and spoken questions.

Example:

(Narrator): "Albert Einstein was a famous scientist.

He was born in Germany in 1879."

Question: "Where was he born?"

The student must click the correct answer, "Germany," on the screen.

The next sample was titled "Directions" (Level Three) and consisted of 15 squares. The student chooses 1 square and a voice tells the exact location of the square the student has chosen. ("This square is in the lower left hand corner.")

"Dictation" ("Upper Basic", Level not given), consists of a story told by a narrator. This is accompanied with cartoon pictures that don't move. At the end, the student must fill in missing words in cloze sentences by clicking them on the screen. Example: "Kathy arrived _____ Paris the day _____, _____ Saturday. The student must click "in", "before yesterday" and "which was" which are among 15 word choices.

The final selection, called "Fill in" (Upper Basic, level not given) consisted of a series of sentences, each with blanks to be filled in by choosing one of five words. Example: "The energy of falling water is _____ into electricity." There are two cartoon pictures, one showing water falling over a waterfall, and the other of a dam. The five choices are: been, being, convert, converted, converting. "Converted" is the correct choice. The experimenter first wrongly chose "converting" because that is what appeared to be happening, and was corrected.

The sample disk that DynEd mailed free of cost contained only the above samples and a few more entries for each of these types. For a program that fills six disks, it would be impossible to judge the entire program to its best effect from the amount of material within the sample disk.

We shall now see how this software fared according to Barker and King's four most important items: user interface, engagement, interactivity and tailorability. The user interface for Dynamic English was simple and adequate for the simple actions the software was capable of. Barker and King provided eight questions to evaluate the interface, and some were not appropriate because the software was not complex enough to contain the features to be evaluated. For example, a question like "Does the software allow links to be made between related areas of

information?” There were no “related areas of information” except a glossary. Another question, “Is the interface integrative with regard to multimedia techniques?” The “multimedia” in this software was fairly minimal and there was little to “integrate”.

This experimenter rated the engagement level as low. Although the content level appeared appropriate for the target users (beginners), the software failed other rating qualifications in regard to “engagement”. The content was not diverse. The material was not perceptibly “authentic”, *e. g.*, the cartoon graphics were not as real to life or exciting as they could have been, and course content did not present engagingly “authentic” situations. The software did not “maintain interest” or present an “enjoyable experience”. It must be stated, however, that to fulfill the requirements of “engagement” on a positive area of a rating scale is not easy, especially for educational material, and although the software was certainly not unpleasant or boring, there was nothing on the demo disk that particularly “engaged”.

In regard to “interactivity”, the software fared well on some evaluation questions and poorly on others. The answer to the following questions was no: Did the product give you enough opportunity to choose and enter things? When you weren’t making choices, was it still interesting? Did you ever feel that you were making choices just for the sake of it? Did you feel that you could decide what you wanted to do? Could you choose which route you wanted to take that was most relevant to you?²² The negative answers here are not due to the failure of the program to perform, but the result of the software not containing items of a necessary complexity to be rated in this way. However, on the positive side, the interaction was active. Students must respond to questions and there was feedback as to wrong answers.

Tailorability (as described by Barker and King) was minimal. The user could change the volume, the length of pause between questions and something called “shuffler” that was not explained in the demo (also lacking was “Help” aid). The user could not do other things that Barker and King wanted to rate: save individual software configurations, adapt the content to a student’s needs, choose a level of difficulty, establish new paths through the product, make macros, and the software could not make use of knowledge provided in a user’s background.

Although the software did not appear to make good use of the things that the computer is good at — manipulating large amounts of data quickly, branching of subtexts or multimedia — it would be a useful tool for listening. Lance Knowles, a software designer from DynEd, recently wrote about his philosophy of teaching English in a journal for teaching English. He stated that of the four language skills, listening is the most important. He emphasized the importance of repetition and intensive practice, and the lack of enough classroom time to allow a sufficient amount of practice and repetition. The software could fulfill this need.

Although it could not be tested within the demo disk, Dynamic English does allow the student to record his/her voice and compare it to that of a native English speaker. This is certainly a convenient addition, and immediate access to this function by the click of a button is a technical improvement over recourse to a separate piece of hardware (*e. g.* a cassette recorder).

The Rosetta Stone is a “start from scratch” program that is designed for entry level learners of any age and extends up through the intermediate level. It is more ambitious than Dynamic English and is meant to be a self-contained language learning course to accompany the first two years of instruction at the university level (for university students who are beginning language study). There are eight individual Units comprised of ten or eleven chapters each, plus a review chapter. Each Unit contains ten screens with four photographs each. There are no moving images in the program. The literature accompanying the software claims that the program is patterned after the way a person learns their first language — words are learned when they become associated with objects and ideas. The educational philosophy is stated, “Words are introduced in a context where the meaning is clear and the reinforcement is immediate.” Over 1,200 words are used within the software. Although it could not be tested in the

demo copy, voice recording capability exists and students can compare their speech with that of native speaker.

Although there is no motion video, there are some 3600 photographs that accompany spoken and written words. The photographs are excellent in that they are of human interest, not staged and visually exciting. The teaching method is the presentation of these photographs which the student must respond to by the native speakers' written or spoken cues. The student chooses the picture that relates to the information in written or spoken cues.

Several modes of presentation of the material are available and these are chosen by the student. They are called "Run Modes". These consist of combinations of pictures, text and spoken words. Run Mode 1 contains voice and text, 2 contains voice only, 3 contains text only. The other Modes are combinations of voice, pictures and text in all their permutations. The student can choose any combination and it is possible to go through all 92 chapters receiving only spoken prompts, if s/he wishes.

When you first enter the software demo, a menu appears allowing access to selections from Chapters 1-14. You are given a choice of target language: English, German, Spanish or Russian. The next menu appears, showing 3 buttons for Mode selections (1-12), the Browser, Tutorial, Dictation and a Control Panel. The latter items will be described later.

We will now, actually look at the program itself. The following is an example of the lowest level, Level 01-01 in Run Mode 1, which gives written cues along with the voice cue. Four pictures appear on the screen: a boy, a girl, a dog and a cat. The written words "a dog" appear on the screen. A voice says, "a dog". The student must click the mouse on the dog. The pictures disappear and reappear in different places on the screen. (This tactic is wise because the student is prevented from memorizing the picture location.) Next the written words, "a girl" appear and a voice says, "a girl". The student must click on the picture of a girl. The teaching method here is the matching of spoken and/or written cues with a correct photograph picked from four choices.

Gradually the cues become more complicated. The student will have a cue that states "a boy and horse", and must click on a picture of a boy and a horse from four choices. Next, prepositions of location are added. The student must respond to the cue, "a boy under an airplane" and click the appropriate picture from four choices.

As the chapters proceed, the cues get longer and more complicated. The following is an example of the highest level, Level 14-09. Two voices have a short dialog:

Man: Which season do you like better, fall or winter?

Woman: I prefer fall because of all the pretty colors on the trees.

Picture choice: a man and woman on the beach, a skier in the snow, trees with flowers and fall trees. The student must choose the picture of the fall trees. At the end, correct and incorrect answers are tallied and the time taken is given.

Now that some examples of the software have been given, we will describe the different functions that are accessed in the user-interface. The Browser is a reference tool that the student can access to go through the chapter material without having to respond to questions. Here again, the student has the choice of Modes, different combinations of text, voice and picture accompaniment. Inside the Browser is the voice recording option that allows students to record their voices (maximum, 10 seconds) and then compare themselves with the native speaker.

The Tutorial Mode is one that guides the student through chapter material and presents re-exercises on questions that s/he has missed. These do not end after ten screens, but continue indefinitely until the student quits.

A Dictation Mode prompts the student to write words, phrases and sentences and then the computer checks the student's work. The student is presented with four pictures, each with a Speaker button. The student can click this button to hear the spoken phrase for that picture. An empty text entry window then appears and the student must type what s/he has heard. The computer then checks for accuracy.

The Control Panel allows the students to configure several options within the software. Also, several other

things lie inside the Control Panel. Among them is the Test Mode, and this mode can be applied to any of the 12 Run modes, and the question/cues are the same ones as in the chapters. Wrong and correct answers are tallied and the time taken is shown. Scores can be saved to a file.

In the Control Panel, the "Test Delay" option can be set by the student. This prevents the pictures from being presented until after the queuing dialog (written or spoken) is presented to the student. This forces the student to retain in his mind, the information in the spoken or written cue. Then s/he chooses the correct picture. In the Control Panel a Timer option allows the student to set the length of time to respond from 1 to 30 seconds. The student gets an incorrect response if s/he goes beyond the time limit. This competitive element adds the motivational enhancement of a game. In the Control Panel, the student can also choose the sound s/he will hear when the correct or incorrect answer is chosen. For correct answers there are: a harp, gong, baby 'yeah', audience clapping, piano tinkle and orchestra. For wrong answers there are: an organ, cuckoo, strange voice, stupid laugh, buzzer and a boing. These sounds are humorous and this adds a spark of wit to the program. The volume is set here also.

Is clicking a picture that is appropriate to spoken and/or written English a good methodology for teaching listening skills? Is a record function that allows the student to compare his/her voice with a native speaker, a good way to teach speaking skills? By including sound, this software does offer the obvious sound advantage over a written textbook, but it is not a substitute for actual language production in a classroom. Its worth lies in its ability to offer endless repetition.

How well does The Rosetta Stone satisfy the evaluation criteria? The user interface was straightforward and easy to use. It had consistent, generic features and good visual and spatial attributes and provided a simple way to access the software's features. They were a good user support. They appeared intuitive in that they were there when you needed them and provided what you needed at the time.

The engagement factor was fairly high for a software without motion video. This is because the pictures were interesting and many gave the feeling of motion. The content appeared correctly appropriate for beginners through intermediate and there was a good deal of content diversity within the photographs. They were authentic in that they reflected real life situations. Generally, the software was enjoyable, maintained interest and its learning objectives seemed to be met.

In regard to questions related to interactivity, this software did not fare too poorly. Like Dynamic English it offered an active level of interaction, the user had to respond to cues. Compared to Dynamic English, the user did have a variety of areas to enter in the software. The user could choose so enter: Browser, Tutorial, Dictation and Testing, and felt a high level of control. Feedback was offered in a consistent manner — a panel tallied right and wrong answers and the time.

In regard to tailorability, the user has some control over the software's parameters, accessed in the Control Panel. Volume can be controlled by the user and the sounds emitted when a correct or an incorrect answer is given can be chosen as mentioned above. The student can set the Timer or choose to have the time and correct answer tally hidden. The student can choose from the twelve Modes, thereby tailoring a learning style.

Conclusion

In way of summary, the following questions must be asked: How well do these programs exploit the things that computers are good at? What computer weaknesses do they show? Do they do things better than the traditional teaching method of a human teacher or text? How successful are these programs for teaching speaking and listening?

Although both programs are copyrighted since 1993, neither program exploits the full range of multimedia (*e. g.*, motion video) or multi-leveled branching that some software now appearing on the scene possesses. Both suffer from the complaints of having in mind the model of an electric textbook.

Both programs exploit some computer advantages: a risk free learning environment, the ability of unlimited repetition, immediate correction and instant access to learning aids (tutorials, glossaries, etc.) and alternate symbol systems, auditory and visual offered simultaneously. In this they are superior to traditional teaching methods. Their strength for teaching speaking and listening is unlimited repetition.

What lies in the future for computer language teaching? Hopefully, discoveries from the field of artificial intelligence will eventually incorporate natural language in language teaching software. Virtual reality, the creation of a computer environment that a student could inhabit and explore using the target language, will some day be a useful teaching tool. A student could visit a computer-generated version of an English speaking country and perceivably live there for a while and learn. But this lies a little bit in the future.

Notes

1. It must be noted that these researchers were not specifically interested in rating or determining a successful teaching methodology executed within a piece of software, but formulating what they call "learning design" by identifying what they call "hallmarks of quality" that seemed to characterize "good learning products".
2. These questions come from Barker and King's, "Prompt Questions for Nonexpert Users" which are given as simpler equivalents of the same questions appearing in the authors' "Basic Evaluation Check-list" for more expert evaluators. These seemed more appropriate in this instance.

References

- Barker, Philip, King, Terry, "Evaluating Interactive Multimedia Courseware — A Methodology." *Computers in Education*, 21 (1993): 307-319.
- Knowles, Lance, "Forward to Basics". *The Language Teacher*, 18 (1994): 22-24.
- Pennington, Martha, ed., *Teaching Languages With Computers — The State of the Art*. Lo Jolla Ca: Athelstan, 1989.

The Rosetta Stone

Publisher: Fairfield Language Technologies, 122 S. Main St. — Suite 400, Harrisonburg, VA 22801

ESOL
level: Beginning students through intermediate, (grade 3 through adult)

Price: 39,500 yen each for first 10 copies, 19,500 yen each additional copy

System

Requirements: *Macintosh*: Color Macintosh, CD-ROM drive, 2 MB RAM in System 6.0x or 4MB RAM in System 7
Windows/MPC: MPC or equivalent system (386SX or better), 4MB RAM, CD-ROM drive, Super VGA monitor with 256 colors at 640x480, SoundBlaster or compatible sound card, Microsoft Windows with Multimedia Extensions and Microsoft CD-ROM Extensions version 2.2 or later

DynEd

Publisher: DynEd International, Inc., 989 E. Hillsdale Blvd., Suite 130, Foster City, CA 94404

ESOL level: Beginners

Price: Dynamic English Levels 1-3, 36,000 yen each level

Requirements: Macintosh: System 7, 4MB RAM, CD-ROM, color monitor 640x480 256 colors, PC-AT or greater with 1MB RAM, CD-ROM meeting MPC #1, VGA, SoundBlaster Pro or compatible

Reviewer's Equipment: Mac Quadra 605 with System 7.1, color monitor, APS 2x CD-ROM player