

COMPUTER-SUPPORTED ESL INSTRUCTION FOR ADULTS: A QUASI-EXPERIMENTAL STUDY OF USABILITY, LISTENING SKILL GAINS, AND TECHNOLOGICAL LITERACY

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Abstract

Demand for usable, productive, flexible, and cost-effective technology-supported adult education instruction is likely to increase in the coming years, along with the need for applied research that can guide the choices that must be made by policy makers, instructors, and learners. The present study of several ESL technology-based adult learning products, although of limited size and scope, provides a number of important findings. *First*, nearly all of the adult ESL learners in this study found the computer-supported software – irrespective of particular software program – to be of considerable interest and help, in part because *independent* student learning was of value to the learners. *Second*, while there was substantial variability among the software products, each contributed about the same amount to the impressive listening skill gains made with only 30 hours of additional independent instruction. *Third*, in addition to traditional literacy learning, technological literacy skills are perceived as very important to learners. *Fourth*, this study contributed to the *methodology* of how to conduct such research on adult learning through technology. Useful survey instruments, observational procedures, and data handling techniques were important outcomes of the present study.

Introduction

Technology is used in adult education programs in a variety of ways. Some programs choose to use technology to support distance learning, with learners working independently at home or at other access sites (see NIFL, 2000; Petty & Johnston, 2002). Other programs integrate technology into daily instruction, moving seamlessly between computer work and other classroom activities (NCREL/NCAL, 2000). A third option is to use targeted software as supplemental instruction for skills reinforcement (Ginsburg, 1998). This option is the focus of the present investigation.

The Literacy Technology Lab (LTL) of TECH21/NCAL was established to conduct much needed substantive evaluation and product research related to the use of technology in adult education. For the present study, the LTL team chose three well-known ESL computer-based products - *English Language Learning and Instruction System, Inc.* (hereafter, *Ellis*), *Rosetta Stone Language Library* (hereafter, *Rosetta Stone*), and *Randall's ESL Cyber Listening Lab*, www.esl-lab.com (hereafter, *Listening Lab*) - and evaluated them using a combination of qualitative and quantitative measures. Twenty-four adult learners were randomly assigned to one of the three products or to a no-product control group with the goals of (1) finding similarities and differences among the products, (2) identifying issues of concern, and (3) understanding how individuals engage with each product. Listening Comprehension was selected as the focus for the study because it is an important skill that can be isolated from reading, writing, and speaking for performance evaluation.

Three specific questions guided this investigation.

1. Which usability factors provide meaningful information for evaluating software for learners to use independently with low levels of intervention on the part of an instructor?
2. Does the independent use of educational software products as supplemental instruction improve learners' performance in the targeted skill area?
3. Does experience using such educational software affect technological literacy skills?

Background and Scope

According to the 1990 National Adult Literacy Survey, approximately 40 million adults in the United States demonstrated literacy skills at the lowest level defined in the survey (Kirsh, Jungeblut, Jenkins, & Kolstad, 1993). During 1999-2000 alone, there were nearly three million adults enrolled in education programs nationwide to improve their skills and occupational opportunities (USDOE/OVAE, 2003). In an effort to provide innovative instruction to this population and to encourage and enable the participation of even more adults, adult education programs have been active in increasing teachers' and learners' access to technology. As an example, according to a survey conducted by NCAL in 1997, only 50% of adult education teachers had access to computers (Sabatini & Ginsburg, 1997). By 2002, nearly 92% of programs reported providing some type of computer access to program administrators, teachers, and adult learners (Ginsburg, 2004). This increase in the physical accessibility of technology, however, has not been matched by empirical work examining its usability, especially among low-literate, undereducated, low-income, and non-native English-speaking populations (Haas & Grams, 2000). Moreover, research on specific instructional products designed for the adult education market and on the effective use of technology for learning and instruction in general remains limited.

At present, most research concerning the effective design of technology (software, hardware, or web sites) has been conducted with literate, native English-speaking adults or child groups. Moreover, the literacy level and formats in which technology-mediated instruments are presented tend to be higher than the literacy level of the United States and world populations (Zarcadoolas, Blanco, Boyer, & Pleasant, 2002). While many design basics and principles are likely to generalize to both low-literate adults and non-native speakers of English, little research has been conducted to assess the degree of impact. As a result, there is a pressing need for substantive research and evaluation under controlled conditions to better understand the specific impact of technology-mediated products on adult learning, and to convey the results to adult education stakeholders.

All those concerned with adult education - from individual programs to state-level policymakers - can benefit from a better understanding of the variety of considerations that may impact a product's effectiveness with particular learners. Software developers, especially those with limited knowledge of the demands on adult education programs, need reliable, third party formative research information to support and guide them in how to develop or adapt products for the adult education market both profitably and cost-effectively. Adult education/ESL providers often struggle to make decisions about whether or not to use technology, how best to use it, and which specific software

programs might enhance their instructional offerings. These providers need understandable information to help them anticipate and manage implementation issues before and after making purchasing decisions, and to inform training and support for administrators, teachers, and technical staff to integrate technology initiatives. Policymakers need information on the overall costs, benefits, and effectiveness of using technology to inform their decisions on funding for professional development at all levels, expenditures for state and local licenses for software, and the design and management of alternative adult education delivery systems. All of this information should be based upon research derived from products tested and evaluated with adult learners. With the present study, NCAL has sought to begin addressing this need by collecting evidence related to the effective development and use of technology in adult education.

Method

This investigation follows what Campbell and Stanley (1963) termed a ‘quasi-experimental’ design. That is, by using random assignment, the study has an independent variable input (three types of software interventions, and one control group). Constraints on budget and time meant that the sample size employed (always difficult in voluntary adult education contexts in any case) was small, and put severe limits on the use of inferential statistics. At the same time, the small sample size allowed for increased depth of data gathering from each participant, an important goal of this study.

Subjects

Adult education providers in the Philadelphia area were informed of the study’s expectations, and the potential benefits to programs and to students who agreed to participate. Even so, the recruitment of study participants was not easy for a variety of reasons that are well known in the adult education environment, including open entry/open exit program structures and the competing demands of time, family, and jobs on the adults who come to study. As an incentive, adults who agreed to participate in the study received \$20 for the pre-testing session, \$50 after completing 15 hours of instruction, and an additional \$75 after completing the full 30 hours of instruction and the post-test. Students who participated in the entire life-cycle of the study received a total of \$145.

Seventy-five adults who were currently attending intermediate ESL classes were screened to identify those at a uniform intermediate level. Participants were administered the model listening comprehension section of the TOEIC to verify their intermediate level of English.

Twenty-four learners were identified for participation in the study. Participants ranged in age from 25 to 66 years, with an average age of 39 years, and have lived in the United States an average of 1.25 years. The learners come from the following countries: Algeria, Brazil, Burma, Chile, China, Ivory Coast, Korea, Liberia, Mali, Romania, and Russia. The native languages of the learners were Arabic, Portuguese, Burmese, Spanish,

Chinese (Mandarin and Cantonese), French, Korean, Mandingo, Mano, Romanian, and Russian.

The educational background of the participants ranged from the completion of eighth grade to the attainment of an M.D. degree. Sixteen of the participants obtained a college degree in their native country and five students did not obtain a high school diploma. No learners received a high school diploma or college degree within the United States. Nonetheless, it must be noted that, as compared with many ESL learners in the United States, this was a relatively well-educated sample.

The 24 subjects were randomly assigned to one of three intervention groups or to a control group. Four of the subjects dropped out at the beginning of the study due to their own personal problems or scheduling difficulties. An additional four subjects discontinued participation after having completed between 10 and 25 hours of the 30-hour intervention. The remaining 16 subjects (12 interventions and 4 controls) completed their enrollment cycle, exit interview, and post assessment.

However, an initial analysis of the data identified two control subjects, with score patterns that appeared to be ‘outliers’ (as discussed further below). Therefore, additional data collection was undertaken to increase the number of control subjects. Of the 20 additional ESL learners screened, 12 placed in the intermediate level on the initial assessment. However, at the time of post-testing, only four of these remained enrolled in their ESL class. Thus, the control group pre- and post-test data includes data from two original control group subjects plus data from an additional four subjects, for a total of six learners.

In total, 95 adult learners were screened with 36 identified as appropriate subjects for this study. Data from 18 of the subjects (12 in intervention groups plus 6 control subjects) were complete and are reported here.

Product Selection and Overview

Adult educators were polled at conferences and through TECH21 field sites to identify the technology products currently used with intermediate level ESL learners in their programs. From these suggestions, *Ellis* and *Rosetta Stone* were identified as the two most popular products that have a listening comprehension component.

Ellis, the server-based system studied, includes a range of ESL modules for both children and adults. ELLIS Academic 2.1 was the version implemented and it included a Business English module that is at an appropriate English level for the study participants. The Business English series consists of several units that primarily focus on communicating in professional settings. Users can access videos and play them as many times as necessary for comprehension. The program also offers users the opportunity to listen to dialogues and record their own voices in a role-play of the dialogue. Transcripts are used to introduce grammar, culture, usage, and definitions; internal quizzes both test and track progress in these areas. Numerous other options are included in *Ellis* and while the learners were free to explore these features, the orientation emphasized the video material

related to listening comprehension. Native language help modules are available and were also installed. Although support materials are accessible to the learner in other modules, the business module does not yet have them available. Remington (1998) provides a short review of the award-winning software.

Rosetta Stone was studied as a stand-alone CD-ROM-based product; each learner was assigned a specific machine that tracked the student's performance and progress. The learners used version 2.02 of English Levels 1 and 2 consisting of a series of units on everyday communication themes such as transportation, household, and shopping language. This product automatically moves learners ahead to the next lesson upon completion of a quiz at the end of a lesson. Using the Administrator tool that accompanies the product, a score of 90% was set as the standard for mastery before the learner was advanced to the next lesson. The product also allows users to record their own speech as part of the program, a feature that was only occasionally used by the learners. Native language help support for several languages was installed. The learners also had access to copies of the user's guide but they preferred to ask the proctor for help when needed.

To increase variety of products evaluated, a third product - the free, web-based product, *Listening Lab* - was added. *Listening Lab* is available at no cost on the Internet, and contains a series of listening activities that progress from Easy to Medium to Difficult. The activities focus on everyday communicative activities such as ordering in a restaurant, talking about a daily routine, or talking about a recently viewed movie. For each activity, students listen to a brief monologue or dialogue, and then complete a listening comprehension quiz. There is also a cloze exercise for each monologue or dialogue. Users are in complete control of their movements throughout the software; they can play a given audio recording as many times as they wish before moving forward, skip or repeat the cloze activity, or listen to audio segments from the three levels in the order of their choosing. The site has garnered positive attention of ESL teachers and is reviewed by Ortiz (2002), Meskill (2001), and Meloni (1998).

The three products, *Ellis*, *Rosetta Stone*, and *Listening Lab*, differ from each other on platform (server-based only system, server or CD-ROM stand-alone product, or web-based only product respectively), on cost (\$2,000, \$300, free), and on the degree of technical skill needed in order to install and/or operate (on site specialized technical support, call-in customer support, minimal respectively). Of course, pricing and installation vary and are reported only to provide a sense of the range. All three products contain multimedia including listening files, video exercises, and still images. Relevant descriptions of each of the products are provided below in the section on learner interactions with the products.

Assessment Instrument

A broad search was made for a listening comprehension screening measure that was standardized, sensitive to relatively small gains, and readily available. Several ESL tests were considered, including ALAS, BEST, CASAS, KET, OPI, Ordinate's PhonePass, TABE, TOEFL, TOEIC, and TSE. Most tests were eliminated from consideration

because they were not normed with the present target pool of learners or because they measure skills (i.e., reading comprehension, written expression, oral proficiency, preparedness for academic work in an English-speaking college or university) not targeted in this study and/or the listening comprehension section could not be separated out effectively. Other tests were not selected because a measurable gain on such instruments could not be achieved in only 30 hours of instruction. Ultimately, the TOEIC was determined to be the best choice for this study since it measures short-term learning gains, targets the appropriate skill, and is well-suited for testing our population - namely adult learners who were more likely to be entering (or currently a part of) the workforce rather than an institution of higher learning.

Additional Qualitative Data Collected

Three formal interviews were conducted with each learner: (1) the initial intake interview, (2) a mid-point interview after 15 hours of intervention, and (3) an exit interview upon completion of 30 hours and the post-test. Each of the interview protocols can be found in the appendices.

The protocol used to guide the intake interviews was divided into several parts. In Section 1 (General and Language Background), basic demographic information was collected, as well as a self-report of each learner's level of proficiency and literacy in the first language. In Section 2 (Educational Background and Experience), details were collected on the learners' formal education - both in their native country and within the United States. In Sections 3 and 4 (Computer Access, and Computer Familiarity and Frequency scales), learners' degree of computer access and their purpose(s) of use were obtained, as well as their level of self-reported technological proficiency.

In addition to interview data, subjects were systematically observed as they worked independently on their assigned software product in the LTL during at least the first two sessions to be certain that the learner was using the software properly, and periodically throughout the intervention cycle. To keep track of their observations, proctors completed a detailed protocol for each session they observed. In addition to proctor-learner interactions, learner-learner interactions were also recorded on the observation protocol. Informal observations on learners' navigation of the software, points of confusion, and so forth were also noted.

Mid-course interviews were conducted with each learner after a minimum of 15 hours of instruction. The interviews provided feedback about each product, verification that all of the targeted features of the products were being used (or consciously avoided), and a way to identify any other usage difficulties.

The exit interview revisited many of the questions from the initial intake and 15-hour interviews, and included questions designed to gauge changes in the subjects' use of (or comfort using) related technology as well as their perceptions of their own learning gains.

The *control* group members completed the same intake and exit interviews, as well as the pre- and post-assessments with a 6 to 8 week interval between them.

Thus, the data contains both qualitative findings (from interviews and observations) primarily on *product usability* and *technological literacy*, as well as quantitative results (from pre- and post- assessments of skill levels) on *learning skill gains* in listening comprehension.

Findings

Product Usability

Each of the three products varied in terms of its pedagogical approach to improving listening skills, and in terms of suitability for independent use or use with minimal instructor feedback. Several factors were found to be most salient amongst this variation, namely: (1) the technology skills required of the learner for system navigation, (2) the relevance and appropriateness of the materials, (3) the level of interactivity between product and learner, (4) the level of learner engagement with the product, (5) the consistency or predictability of each product, and (6) the quality of each product's audio and video recordings. A comprehensive and detailed description of product usability for each product is provided in Appendix A.

Learning Gains in English Listening Skills

General findings on listening skills gains

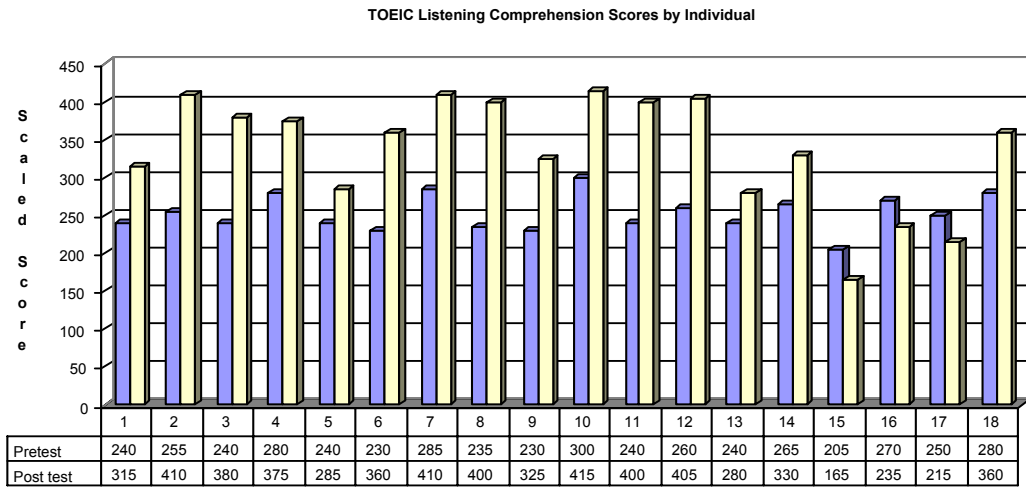
Subjects' skill learning was documented with versions of the TOEIC. A TOEIC score is a composite of Listening Comprehension and Reading, each with a scaled score from 5 to 495. For this study, only the Listening Comprehension subtest was used.

TOEIC scores are divided into four proficiency levels in the following ways by ETS (<http://www.toeic.com/4faq.htm>): “the Elementary learner has reached the 200 level; is able to satisfy basic survival requirements, maintain very simple face-to-face conversations on familiar topics; thinks in native language and translates into English. The Intermediate Proficiency learner has reached the 400 level, can initiate and maintain predictable fact-to-face conversations; satisfy limited social demands; range and control of language limited; emerging but not consistent, basic grammar.”

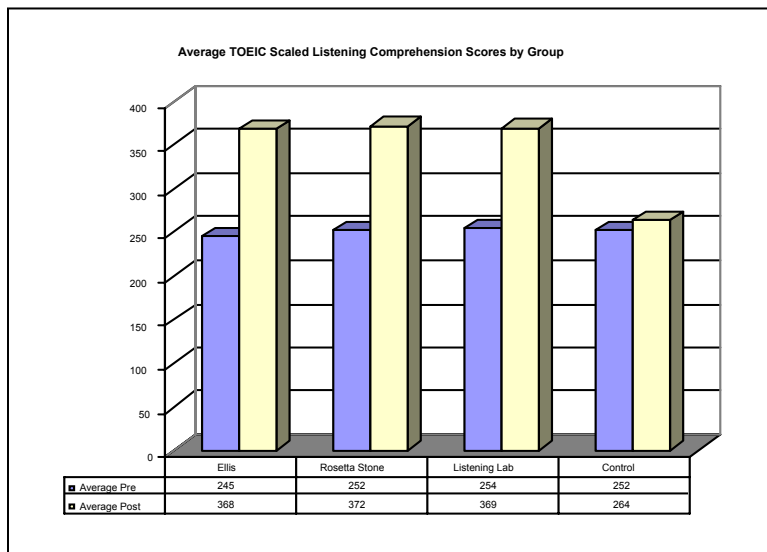
The scaled scores for qualification for the study ranged from 200 to 310, representing low-level intermediate learner status. It was hoped that all subjects would demonstrate a meaningful learning gain and, indeed, post-test scores ranged from 280 to 415, indicating that a few learners did advance to a higher proficiency level (400), while several others approached that designation. The pre- and post-test scores for each subject within the intervention groups are shown in the table below.

After having completed 30 hours of instructional software use in addition to their regular classroom attendance, all 12 intervention participants (numbered 1 through 12 in the table below) demonstrated progress in their listening skills, albeit at different rates.

Subjects numbered 1-3 used Ellis; those numbered 4-8 used Rosetta Stone; those numbered 9-12 used Listening Lab; and finally, those numbered 13-18 were the control subject group. Without having had the benefit of computer-assisted instruction over the six-week instructional period, three out of six control subjects showed moderate gain. The remaining three controls registered a moderate loss. As a result, without IT intervention, control subjects, on average, found little measurable benefit from their 30 hours of regular adult education.



Looking across the treatment groups, the mean TOEIC score gains were very similar — between 115 and 120 scale score points. The control group showed an average gain of 12 points, significantly lower than the gains achieved by the experimental groups.



Specific findings by ESL software program

Study participants were also asked a series of self-assessment questions in the post intervention interview to gather the subjects' perceptions about progress in their English listening, speaking, reading, and writing skills, as well as their confidence or comfort level when faced with everyday activities such as going to the grocery store or taking public transportation. As such, each subject's learning gains reported in this section capture both *qualitative* and *quantitative* findings, something that is relatively rare in CAI learning gains studies to date.

Ellis

Three of the six study participants originally assigned to *Ellis* completed 30 hours of work with the product, took the post-assessment, and discussed their observations in the final interview. All three showed improvement on the TOEIC. The mean scaled score of the pre-assessment was 245. The mean of the post-assessment was 368, reflecting an average gain of 120 points.

In general these learners felt that their time using this product was well spent. *Ellis* learners perceived their ESL Listening comprehension had "Somewhat Improved" (mean response of 2.0 on a scale from 0 to 3). The three subjects responded to the prompt, "After using this program, I feel more confident doing everyday activities such as going to the grocery store or taking public transportation," with three different responses; one agreeing "A Little," one agreeing "Somewhat" and one agreeing "A Lot." This variation, following quite similar intervention experiences, shows that individual learners' differences and preferences must be considered when evaluating products.

Rosetta Stone

Five out of six study participants completed 30 hours of work with *Rosetta Stone*, with all of them showing improvement on the post-assessment. The mean of the pre-assessment was 252 and the mean of the post-assessment was 372, reflecting an average gain of 120 points.

The participants who were assigned to use *Rosetta Stone* felt that the product was a valuable tool for improving their English proficiency, rating their ESL listening skills as "Somewhat" improved after using the product (2.2 on the 0 to 3 scale).

Similar to the learners who worked with *Ellis*, the *Rosetta Stone* learners' increase in confidence when doing everyday activities such as grocery shopping and taking public transportation varied from "A Little" to "A Lot." Most felt their English speaking and writing skills had improved "Somewhat" but thought their reading skills had either not improved at all or only "A Little," again indicating that instructional activities that target particular skills (such as listening comprehension in this case) are perceived to only have an impact on that skill.

Listening Lab

Four of the six learners who were assigned to the *Listening Lab* group completed their work with the software and showed improvement on the post-assessment. Their mean

post-assessment TOEIC scaled score of 369 was 115 points higher than the average pre-assessment score (254) logged weeks earlier.

In addition, participants consistently felt that they derived benefit from the work completed with this product. *Listening Lab* learners felt that they had improved their ESL Listening Comprehension by “A Lot” (average 2.75 out of 3), more than the other groups of learners. As a group, they claimed to have greater confidence in doing everyday activities. Self-perceived improvement gains in speaking (more than “Somewhat” improved, 2.5), reading (more than “Somewhat” improved, 2.5), and writing (“Somewhat,” 1.75) were high compared with perceptions of the other group members. Individual differences were considerable, with two learners stating that their speaking, reading, and writing skills had all improved “A Lot,” while another learner claiming that her English writing had not improved at all.

As a whole, this group demonstrated great enthusiasm and commitment to learning but it is difficult to know if that was primarily due to their experience with *Listening Lab* or due to the individual differences in the small sample. By the end of the intervention period of 30 hours, one learner had completed the whole curriculum and had started to do it a second time. After the exit interview, two other learners had begun to work on other technology products.

Control group

Subjects assigned to the *control* group completed the intake and exit interviews, as well as the pre- and post-assessments with a six to eight week interval between them. These participants had no input from any of the three CAI software products during the time of the study. All of these subjects had a lower estimation of their self-perceived listening skills, reading skills, and writing skills. Moreover, the retention rate for this group was much lower than that of the intervention groups; 10 control participants had dropped out of the regular ESL class before post-assessment could be administered. In the end, only six control subjects could be properly pre- and post-tested, out of nearly three dozen individuals sampled.

Technological Literacy Skills

This study also provided an opportunity to investigate the types of contributions that the utilization of CAI products might have on technological skills. It was predicted that subjects who used CAI to learn English would become more familiar with technology and would increase their own technological literacy for other purposes in their lives.

In order to measure development over time, learners were asked in the intake and exit interviews to assess their own familiarity with computers and technology usage in several key domains, including familiarity with and use of the Internet and previous use of computers as an aid for learning English, and so forth (see Appendix B for the interview protocol).

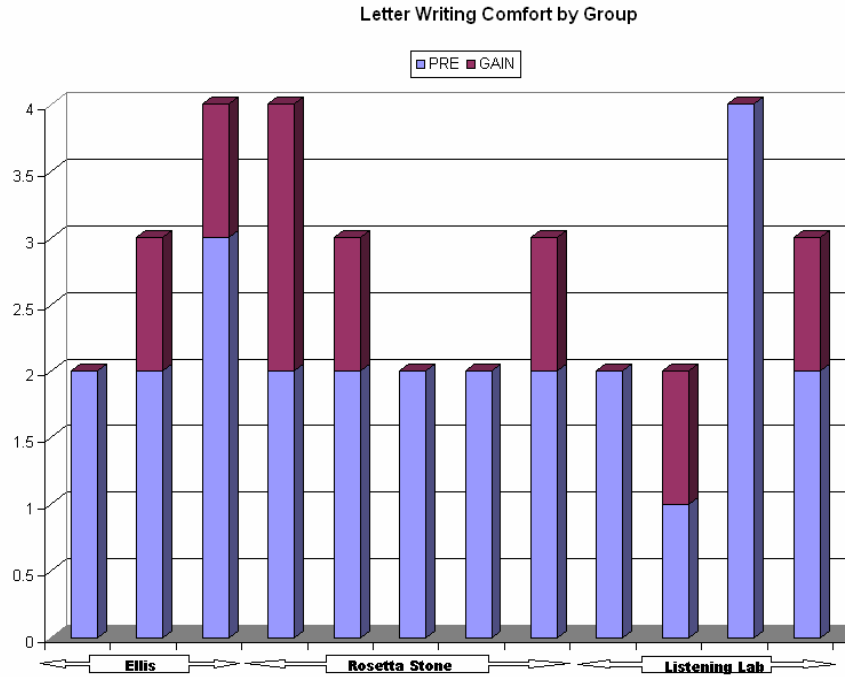
Nearly half of the learners who participated in the study reported this was the *first* time they had used the computer to learn English. By the end of the study, of course, all had used technology to learn English. Almost all said they would continue to use CAI educational programs in the future and most said they were more comfortable learning English on the computer than they were before the intervention. In the study sample there was very little of what used to be called ‘techno-phobia,’ a factor that may no longer be a major issue for many adult learners.

While each of the software products delivered instruction via computers, none of the products focused on teaching technological skills as such. This seemed clear to the learners; at the exit interview, 8 out of 12 reported that they did not believe their computer skills had improved at all. Thus, the enthusiasm that the learners expressed about using the CAI software had less to do with learning about the technology and more to do with learning how to *use* technology as a delivery and monitoring system. Of course, it must be noted again that the present sample of subjects was more highly schooled, and thus likely to be more technologically literate, than the larger population of adult learners in the United States today.

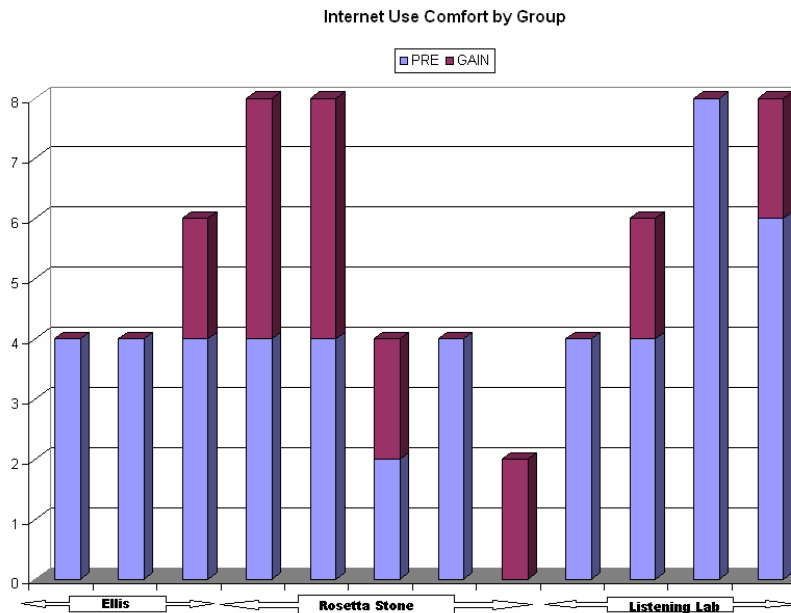
To further understand self-perceptions, subjects were asked about their “comfort” level with everyday computer practices. Self-reported levels of comfort with using a computer to write letters and with using the Internet to search for information are discussed below.

Naturally, each of these tasks may represent differing degrees of difficulty and may also assume other component skills. Writing a letter assumes that a learner can open an application, edit, and save the letter. Finding information on the Internet implies that the learner can enter a web address or can identify a button for a search engine and can then sort through multiple results. These skills may be independent of English language proficiency since each can be done in the learner’s native language. Learners rated their comfort on each dimension using a 5-point scale (“Not at All,” “Not Very,” “Somewhat,” “Very,” and “Extremely”).

One person was initially “Not Very” comfortable writing a letter, another was “Extremely” comfortable and everyone else was at least “Somewhat” comfortable. By the end of the implementation, *more than half* of the learners rated their level of familiarity at a higher level than they had earlier. The person who had been the least comfortable was now “Somewhat” comfortable, two people were now “Extremely” comfortable and others had become more comfortable as well. However, many did not change their description of their level of comfort with this task. The table below shows the subjects’ pre and post assessments of their comfort in using a computer to write a letter.



During the intervention, none of the products required learners to seek information independently on the Internet. However, *Learning Lab* is a web-based product, and learners using that product had to open the browser, enter the appropriate URL, and work within the browser environment perhaps gaining confidence in using the Internet. Did this experience make a difference in these learners' comfort in using the Internet to seek information? From these data, there does not seem to be evidence that it does. Of those who worked with *Learning Lab*, one learner initially felt "Extremely" comfortable and continued to feel that way. Two others increased their reported level of comfort by the



end of the intervention but the fourth subject reported the same level as he had at the initial interview. The greatest gains were found among two of the learners who used *Rosetta Stone*, the CD-based product, for reasons that are not clear at this point.

Thus, for this sample, there was no overwhelming evidence that practice using a web-based product helped learners increase skills and confidence for searching for information on the Internet. At the same time, due to the small sample sizes, it was impossible to study any interaction effects between skill use and Internet use, which is an area that merits further research.

Discussion

The findings of this study, as presented above, contribute to the growing body of knowledge of how technology might be used effectively to help adult learners achieve their goals. In addition, the study raises a number of interesting methodological issues that may inform future studies of this population, particularly those that use a random assignment model.

The nature of the sample. Ninety-five adult Intermediate Level ESL learners were screened to identify 36 subjects who were at similar levels in their English language listening skills. The average education level of the subjects chosen was higher than that of the average immigrant (Kirsch et al., 1993). The extensive school experience and academic achievements undoubtedly had an impact on the subjects' motivation, dedication, and ability to complete educational tasks and programs. A sample with such educational credentials was not part of the original design even though all learners were drawn from traditional, urban ESL classes that are free to learners and have open enrollment. Indeed, one of the subjects' adult education instructors had not known of the relatively high education level of her ESL students. What must be kept in mind with research on adult education learners is the variability their backgrounds relative to samples of other educational groups.

Usability factors. Each of the software products, as reported by learners and observed by researchers, had strengths, weaknesses, and functionality that may vary by situation and individual learner. Subjects within each group were quite consistent in evaluating their products along the various factors requested. Among the positive attributes of CAI software programs that led to a satisfactory experience by adult ESL learners included: self-pacing, consistency, immediate feedback, and a user-friendly design with high quality, meaningful use of audio and video.

Overall, users of each of the three products noted that the English communication in the products was appropriate in its cultural and everyday relevance. Many noted that the cultural information contained in the programs was very important to them, since they are now living in the United States and need to know information for everyday conversations. However, different learners found some of the content to be more or less relevant to their needs and interests. Thus, the particular context and learner interests need to be considered when selecting a particular module or product. It should be noted

that only a portion of the available content was used for this study. In addition, only listening skills were addressed in this study, although other skills are addressed to differing extents by each of the products.

Impact of the interventions on gains in listening skills. The average gains within each intervention group on listening skills as measured by TOEIC scores were quite similar (*Ellis*, 120 points; *Rosetta Stone*, 120 points; *Listening Lab*, 115 points) after 30 hours of interaction with the software. The control group had an average gain of only 12 points. Thus, for this study, although no one CAI software program stood out as having a greater effect than the others, the use of any CAI does seem to positively affect learning outcomes. The advantage of CAI products is not only in their apparently good instruction, but also in the *flexibility they provide to engage in learning at any time, and to some extent, in any place*. In this study, the products provided supplementary instruction in addition to classes, on an independent basis. The learners seemed to think the CAI complemented classroom instruction well. Nearly all of the learners said they were interested in continuing to work with their assigned products using CAI. They uniformly believed that using the products enhanced their English skills.

Technological literacy. While none of the products specifically claim to increase the technological literacy of adults, many subjects reported gaining useful technology skills over the time of the intervention. Although most did not attribute enhanced technology skills to their work with the products, it may be that frequent use of computers just increased general comfort with technology rather than with task specific skills. On this particular variable, the relatively high education of the sample may have produced fewer gains in technological literacy than would have been found in, for example, an ESL class for those who had not completed high school.

Quantitative and qualitative data in the study design. In this study, both quantitative and qualitative data were used to determine the impact of three different CAI software products. As programs need to report student outcomes in quantitative terms to various stakeholders, performance gains on standardized tests are meaningful and useful. Qualitative data helps represent the complexity of individual differences as well as answer questions about levels of engagement and motivation that also have an impact on learning.

Conclusions

One of the most important questions asked in adult education today is simply: What works? The question is asked in part because of a demand from policy makers, program instructors, and learners that learning opportunities and outcomes must be maximized. Further, there is an overall sense that new options for learning (as evidenced in *A blueprint for preparing America's future*; OVAE, 2003) are required and desired, especially as the American workforce and workplace is changing dramatically. And, of course, one of the biggest changes is being driven by new technologies.

As adult educators seek to find new technological options, they are faced with a major challenge: choosing the right hardware and software solutions to meet the specific needs of their target populations. This is easier said than done, of course. Known limitations include the paucity of objective data, the ongoing change in technology hardware, and the changes in the way different learners approach and utilize technology for learning. In sum, it is not easy to demonstrate, even using random assignment and a quasi-experimental design (as in the present study), what works. Cost is not a small issue. Additionally, obtaining a robust sample from a population of adult learners that do not choose to or are unable to consistently participate leads to bias in sampling and in results.

Even though the present study was of limited size and scope, there are a number of important conclusions that can be drawn at this stage.

- *First*, nearly all of the adult ESL learners in this study found the CAI software – irrespective of particular software program – to be of considerable interest and help, in part because *independent* student learning was of value to the learners. Moreover, the use of CAI appears to have a positive effect on attendance and retention rate among adult ESL learners.
- *Second*, the CAI products differed on many variables, but each contributed about the same amount to the impressive listening skill gains made with only 30 hours of additional independent instruction.
- *Third*, technological literacy skills are seen as important to these learners.

Studies such as this one also contribute to the *methodology* of how to conduct such “What Works” studies of adult learning through technology. Survey instruments, observational procedures, and data handling techniques (as found in the Appendices) were important outcomes of the present study.

While relatively slow in appearing in the adult education marketplace, usable, productive, flexible, and cost-effective technology-supported instruction will likely be in greater demand by policy makers, instructors, and adult learners in the coming years. Further, with the advent of increased demand for technological literacy – and of information literacy – as a new and core component of every adult’s required basic skills repertoire, the need for further applied research on technology-supported adult learning will become ever more important.

References

Campbell, D. T., & Stanley, J. C. (1963). Experimental and quasi-experimental designs for research on teaching. In N. L. Gage (Ed.), *Handbook of research on teaching*. Chicago: Rand McNally.

Ellis, R. (1994). *The study of second language acquisition*. Oxford: Oxford University Press.

Ginsburg, L. (1998). Integrating technology into adult learning. In C. E. Hopey (Ed.), *Technology and basic skills, and adult education: Getting ready and moving forward*. Information Series No. 372 (pp. 37-45). Columbus: ERIC Clearinghouse on Adult, Career, and Vocational Education, Center on Education and Training for Employment, College of Education, The Ohio State University. Available: http://www.cete.org/acve/docs/hopey/hopey_04.pdf

Ginsburg, L. (2004). *Adult literacy practitioners' readiness to use technology in the classroom: a five state survey in 2002-2003*. Philadelphia, PA: University of Pennsylvania, National Center on Adult Literacy. Available: <http://www.literacy.org/products/T21SurveyRpt-jcs14-feb13.pdf>

Hass, S., & Grams, E. (2000). Readers, authors and page structure: A discussion of four questions arising from content analysis of Web pages. *Journal of the American Society for Information Science*, 51(2), 181-192.

Kirsch, I. S., Junegeblut, A., Jenkins, L., & Kolstad, A. (1993). *Adult literacy in America: A first look at the results of the National Adult Literacy Survey (NALS)*. Washington, DC: Department of Education.

Meloni, C. (1998). *Randall's ESL Cyber Listening Lab*. Web Wanderings column of *TESOL Matters* (October 1998) Available: <http://www.tesol.org/pubs/magz/wanweb/1998/wanweb9810.html>.

Meskill, C. (2001). Review of Randall's ESL Cyber Listening Lab. MERLOT: Multimedia Educational Resource for Learning and Online Teaching. Available: <http://www.merlot.org/artifact/PeerReviewDetail.po?rOid=140000000000019402>

National Institute for Literacy (NIFL). (2000). *State policy update: How states are implementing distance education for adult learners*. Washington, DC: Author. Available: <http://www.nifl.gov/nifl/policy/distance.htm>

NCREL/NCAL. (2000). *Captured wisdom on adult literacy: Integrating technology into adult literacy instruction*. Author. Available: <http://www.literacy.org/capturedwisdom.html>

Ortiz, R. S. (2002). Review of Randall's ESL Cyber Listening Lab. EUROCALL Newsletter, 14(2). Available: <http://www.hull.ac.uk/cti/eurocall/newsletter/1.htm>

Petty, L. I., & Johnston, J. (2002). *Adult education in non-classroom settings: A pilot test in Pennsylvania, Phase II*. Ann Arbor: Institute for Social Research, University of Michigan. Available: http://projectideal.org/pdf/other_print_resources/WESDL-PA/PADL-Phase2Rept.pdf

Remington, J. (1998). ELLIS Software Supplements Instruction & Promotes Practice. *ESL Magazine* Sep. 1998. <http://www.ellis.com/news/reviews/details.php?id=19980900>

Sabatini, J., & Ginsburg, L. (1997). *Instructional technology utilization survey of mid-western adult literacy programs*. Available: <http://www.literacy.org/NCRTECSVY/ncrel1.html>

U.S. Department of Education/Office of Vocational and Adult Education (USDOE/OVAE). (June, 2003). *A blueprint for preparing America's future. The Adult Basic and Literacy Education Act of 2003: Summary of major provisions*. Available: <http://www.ed.gov/policy/adulted/leg/aebblueprint2.doc>

Zarcadoolas, C., Blanco, M., Boyer, J. F., & Pleasant, A. (2002). Unweaving the Web: An exploratory study of low-literate adults' navigation skills on the World Wide Web. *Journal of Health Communication*, (7), 309-324.

Appendix A: Product Usability

A number of observed factors inform how each of the three products differ in terms of its approach to improving listening skills, and in terms of its suitability for independent use or use with little instructor feedback. These factors include (1) the technology skills required of the learner for system navigation, (2) the relevance and appropriateness of the materials, (3) the level of interactivity between product and learner, (4) the level of learner engagement with the product, (5) the consistency or predictability of each product, and (6) the quality of each product's audio and video recordings.

Installation and System Maintenance

Ellis

The installation of *Ellis* required both a physical server and clients networked to it. Initial installation and troubleshooting took about 25 hours over a two-week period. After some direct help from technical support and some version corrections, the product ran smoothly. The product cost usually includes some onsite technical support.

Windows 2000 was the basic platform and was configured so that the program could be accessed by all assigned learners at any client computer. The *Ellis* system was sophisticated enough to detect multiple simultaneous logins. Each client machine kept a very small reference file and all materials, including extensive video, were installed once on the server and transmitted over the local area network. As long as both server and clients ran at the same time, there was little trouble with the software. If the network connection to the server fell, however, the local client provided no notice or warning. Instead, it eventually froze and only a sophisticated user could reinitiate the program (which was required) without rebooting.

One advantage of running software that is administered via servers is that any work done by the student can be easily recorded and retrieved. In fact, *Ellis* stored information on all students, and could generate reports on tasks completed and features used. This feature provides an especially efficient way of monitoring student activities. In fact, this information allowed the researchers to make certain that participants were using the full program. The reports are not yet very teacher friendly; a manual is required for generating and interpreting the reports.

Although the installation of *Ellis* called for significant computer skill, navigation required very little in terms of technical expertise. Even a novice computer user can access the program and navigate through the choices after a brief tutorial with an observer. Users only need to understand how to double-click, enter a user name and password, and use hyperlinks and buttons for navigation. The learners assigned to *Ellis* found the play, volume, and other controls easily, and navigated the software without significant problems.

Rosetta Stone

Rosetta Stone was installed as a virtual server program, which would be one way to use the classroom edition. That is, although the program may be used by only one student at a time, if the server version is installed, the login provides a way to track users across a local area network. The server need not be a separate machine and thus, the capability of handling different users at different times on one machine provides for concentrating the tracking of all learners in one place. Installation for both pieces required little effort although for each session the original CD had to be kept in the machine. A personal edition is also available for sale; that set-up may vary but would likely be even more straightforward.

To track students, the program includes a student management system that is rather versatile. Aside from the expected printed reports on attempts and progress, there is some curriculum customization allowed. *Rosetta Stone* provides an option to extract data on each learner (such as length of time spent on a level, scores and status on tests, and so forth) in comma-delimited format. Although it is not easily understandable in this format, the raw information can be imported into a spreadsheet. ESL providers can take advantage of this feature to document learners' progress and time spent on task for external reporting purposes.

Listening Lab

Of the three products, *Listening Lab* provides the easiest installation. All the user needs is a PC connected to the Internet with a reliable connection, a browser, and the basic multimedia plug-ins. (The audio is encoded for RealAudio and Sanako, formerly Divace; help on finding and installing either one is provided.) No technical problems of any kind were encountered in any of the lab computers and none had to be specially adapted.

Technology Skills and System Navigation

Since individuals' technology skills are a crucial variable in their interactions with computer-assisted instruction (CAI), researchers gauged each learner's technology familiarity through interviews and observations. In general, learners were able to successfully navigate the three products with relative independence after some minimal coaching or orientation. However, it is interesting to note that, in the self-guided setting, learners did not independently "discover" or fully utilize some of the special product features or were uncertain how to proceed without specific feedback from the system. These findings suggest that educators who plan to create self-guided learning environments will need to fully familiarize themselves with the programs and provide orientation and ongoing support for learners.

For two of the three products, there were instances of technically enhanced features that were not intuitive enough to be used independently at the outset, but that learners could use on their own after only a few sessions. For *Ellis*, this involved a microphone that allowed learners to participate in role-playing activities and record their voice as part of a

conversation. This task seemed to be a bit complicated for users at first, and is compounded by a varying level of self-consciousness among the learners, as they are somewhat anxious about speaking into the microphone. Eventually, the record button became one of the most used features of the system since most learners enjoyed the immediacy of listening to their own voices next to the system's voice. *Listening Lab* also requires a media player that was somewhat troublesome to use for novice computer users. With *Rosetta Stone*, learners made few comments on the activities for which the microphone was used because not all learners used that feature. Of those that did, no technical difficulty was reported or observed.

The individual software products varied in the degree to which learners were able to direct their own progress through the system. In the case of the *Ellis* software, learners reported little difficulty in navigating the features they found, but they did not actually find all of the features independently. In addition, since many of the activities in the product are open-ended in the sense that learners move ahead only when they choose to do so, learners sometimes did not realize that they could simply go on to a new activity.

While this flexibility is a positive feature of *Ellis*, it does cause a degree of confusion for the learner in terms of system navigation. In *Rosetta Stone*, by contrast, almost everything is automatic, including the progression from one unit to the next once a mastery score is achieved. Prompts for questions are easily identifiable graphic buttons. Icons were usually understood, but very few written or oral instructions were given. This lack of explicit guidance confused some users to the point of frustration. *Listening Lab* gives learners total control in terms of how quickly they proceed to next lessons, how many times they listen to an activity, and in what order they complete activities. Users with a basic knowledge of Web site navigation have no trouble navigating this site, which contains basic navigation features such as buttons and hyperlinks, and requires a fair amount of scrolling. Learners without basic computer literacy skills do encounter some difficulty in navigating this product. True computer novices did not have an understanding of the forward and backward maneuvers that are an inherent part of Web navigation. Some did not know that the Home button, for example, would return them to the main page. After a few sessions with the product, however, novice learners did acquire this and other basic skills. As one learner, who had forgotten for a moment how to return to the Home page, exclaimed when prompted by the observer, "Oh yes, must click on the yellow button."

Listening Lab also requires a media player that was somewhat troublesome to use for novice computer users. The user must understand how to have two applications open simultaneously, and how to switch between programs. For example, there were several instances in which the media player window was minimized, and the students did not understand how to maximize the application window. However, after several interventions by the observer, during which the observer demonstrated that the media player was in fact still open and could be found in the task bar at the bottom of the window, users were able to find and access the media player when needed. In cases when the Internet connection with the media player was interrupted, or the settings for the media player had changed, learners felt a great deal of confusion.

Similarly, the most technically difficult component of *Listening Lab* occurs in activities where there is a video to play, and students must use built-in media player controls. These controls caused some confusion for several of the learners in their first encounter with them. The RealAudio default media player has buttons without text on them (for *play* and *stop*, for example), and it is not clear to learners unfamiliar with these kinds of media players what they are supposed to do. Learners stated that this part of the program was a little confusing, but once they learned to use the tools for one unit they were able to manage subsequent units. Of particular note is that half of this product's learners reported that it was "Somewhat Difficult" to use this program without the assistance of the teacher.

A link labeled "Media Players" leads the learner to the installation of the software and the only way to learn to use the player is found in the documentation of the player's author. A Help button also aids in troubleshooting the use of the audio but provides no instruction on the use of the player. *Listening Lab* does not teach these skills to the most novice users. However, in all cases, learners persevered and found that the skills learned were transferable to other uses of the browser.

Relevance and Appropriateness

According to most learners, each of the three products succeeded well in addressing content relevance and satisfaction. Each learner considered the content at least "Somewhat Useful." Likewise, the products were considered at least "Somewhat Interesting" and "Fun." Individual product's strengths and inconsistencies are discussed next.

Ellis

The goal of the Business English module of *Ellis* is to teach learners to communicate well in a business setting. However, even students who are not currently in the workforce were quite happy with the real-world language in this module. One student remarked, "I liked airport, ground transportation, hotel, food, phone skills, greetings, introductions, and farewells...." Others noticed that they had heard many of the words before, but had not previously understood them. For example, the Airport unit was very well received by the learners - one student, upon learning the phrase, 'Have these bags been in your possession...?' exclaimed, "This word ["in your possession"] is very useful; always in America you hear this word." At that moment, he took out his notebook and wrote down the expression. He stated later that the English in the program was very relevant and helpful.

In terms of pace and language appropriateness, learners' responses varied quite a bit. In their own words, *Ellis* users stated:

- I think some topics are easy. It is better letting all step the same level.
- I prefer to get some more useful sentences.

- Would like to see some idioms and slang added because some Americans usually use them. Furthermore, some idioms are difficult to understand.
- The games go too fast.
- Grammar is too easy [easy], can be taken out.
- Vocabulary sometimes difficult, more challenging would be better; computer skills should be made easier.

Ellis does an excellent job of helping the student break down language into comprehensible chunks. Still, the reported frequent mention of the ease of the activities can signal that, given the level of support, the students could handle slightly more complex vocabulary, games, or exercises if they would not be forced to respond too quickly. Corroboration for this observation can be found in a survey question that asked the learners to rate how challenging the program was to them. One of the learners reported the Business module as “Challenging”; all other sections were rated as “A Little Challenging.”

Likewise, the learners’ wish list of changes and additions includes the following topics:

- I would like to increase more conversation. Every conversation continues a long time. Test needs more listening.
- History story, ask directions, marriage.
- I would like [*Ellis*] to have answers to test review.
- I would like to listen to more contents about life (like business unit) move in, take a bus, buy things, car trouble...

In light of these critiques, it should be noted that 30 hours of usage did not expose students to all sections of *Ellis*. At the Midpoint Interview one student reported, “Some contents are less interesting” while at the Exit interview another commented, “I don’t like talking about business.” The latter may not be a fault of the product but a constraint of the intervention that requested that students concentrate on only one of the modules.

Rosetta Stone

Unlike the *Ellis* module, *Rosetta Stone* does not focus units on one topic. Rather, each unit contains lessons related to different real-world everyday events (such as renting a car). During the Exit Interview, one learner spoke of her feelings about her own progress by saying, “When I go to the grocery store, I feel more secure.” She also credited *Rosetta Stone* with helping her in social situations and in gaining confidence in her listening skills. When asked what they like about the product, another learner responded, “I think it’s good; lot of things in the video that I can meet in life.”

Since the majority of the learners in the study live in the city and do not own cars, some noted that the unit on transportation, which focused largely on driving and traffic laws, was not as interesting and helpful to them as other units. Another learner mentioned that while the lesson that deals with culture is “really good,” she would also have liked to see a lesson on “what to say at a party.” She was looking for more information on how to conduct small talk in the context of her English-speaking community.

In addition to appreciation, *Rosetta Stone* users also expressed some dissatisfaction when asked for their opinions of the product:

- Little boring, repeats all the time; chapters are long; 20 lessons are too many for 1 unit; need too many points to go on to next level; not stimulating; not exciting.
- Articles in the 3rd part are too long.
- There are many grammar questions too easy.
- [she] doesn't understand [the passage] but the reading is easy so she can answer the questions w/out improving her listening.
- Sometimes, so many new words, it gets frustrating. (E.g. Ch. 3) Chapters w/o dictionary are not as useful.
- Every unit is too similar. Sometimes I click automatically (w/o thinking; losing focus). Different styles for different units is preferable.
- Sometimes can't understand and have to ask proctor. These parts should have an explanation.

It should also be noted that *Rosetta Stone* learners had the most varied experience with the pace of the lessons; two reported the lessons to be too slowly paced, two considered the change gradual, and one thought the level changed too quickly. Their opinions also varied on whether the lessons were challenging enough; two considered the lessons "Somewhat Challenging" and three considered them "A Little or Not at All Challenging."

These students' perspectives emphasize the importance of relevant topics for adult learners as well as the difficulty of establishing pace and relevance across diverse populations.

Listening Lab

As with *Rosetta Stone*, *Listening Lab* offers learners a variety of lessons covering a wide range of topics of everyday interest. In fact, all of the learners assigned to this product agreed that the English used in *Listening Lab* is very relevant to their everyday lives. One learner stated that now when he listens to the television, he understands more than he did before using the program. He indicated that the improvement was due to the fact that the units in the program use common language to present real-world situations. The cultural references in these units were also highly interesting to learners; one user even commented that she would like to add more "about history of U.S. [like] amendments, rules...."

Listening Lab learners were very homogenous in their opinion of the difficulty and need for change. After 15 hours, all three agreed that the pace and level were just right, perhaps due in part to the fact the *Listening Lab* learners dictate their own pace. With regard to content, none reported being frustrated and none reported wanting anything taken out. One learner commented, "Everything is ok. Sometimes it is difficult but with repeating, you can understand more." Another said, "I like it all."

Although none of the students wanted anything removed, some commented in the Midterm Interview that they would like to add grammar exercises, color photos, a more obvious dictionary, and more feedback. By the end of the intervention, the following comments had been added by individuals:

- I don't like that I don't have vocabulary and pronunciations of all words. I need it to learn.
- Would like vocabulary and pronunciation added, otherwise I would not change anything.
- Child voice; too hard to understand, confusing.
- I would like to add some background or pictures.

Level of Interactivity

To varying degrees, all three products required learners to be actively making language judgments, and provided immediate feedback on their choices. Many of the interactive features of the products, however, were not fully appreciated by the learners until the features were pointed out to them.

Ellis

Ellis is highly interactive in that it allows learners to engage in role-playing with characters in videos. Although learner reactions to the role-play feature varied, generally they became quite excited about creating a dialogue with the actors in the video after overcoming their initial hesitation to speak aloud into a microphone. Users were even observed recording their voice over and over until it sounded good to them.

An additional interactive feature of *Ellis* is that users can watch the beginning of a video and then choose from several different endings in a video series. Whichever ending the users select based on a brief description is the one that they see in the video. Users can also watch all of the endings if they choose. As reported earlier, the effect is that all learners rated the product as "Very Interesting" and "Fun."

Rosetta Stone

Rosetta Stone is interactive in that students answer questions or match spoken phrases with pictures and receive immediate feedback as to whether their selection is correct. In the listening exercises, learners controlled how many times they listened to a sentence. Learners seemed to enjoy having this control within the program.

Like *Ellis*, *Rosetta Stone* also offers an opportunity for learners to record their voices by repeating sentences that they hear in reference to a given picture. After overcoming their initial hesitation about speaking aloud into a microphone and recorder, *Rosetta Stone* users especially enjoyed this feature. For those sections of the *Rosetta Stone* lessons that presented grammar review or required learners to read a few paragraphs without any other interaction with the product, several learners complained that the paragraphs were either too long, a little complicated, or somewhat boring. Some indicated that for practicing reading skills, they would prefer to simply read a book. This highlights the importance of interactivity in a computer-based ESL product.

Listening Lab

Unlike *Rosetta Stone* and *Ellis*, *Listening Lab* does not allow the student to engage in any speaking or recording activity; however, the product is interactive in different ways. The audio passages can be accessed as a scrolling subtitle. Also, each lesson includes a listening comprehension quiz and a cloze exercise that provides immediate feedback to students on their performance. Learners especially appreciated this feedback.

Engagement

Learner engagement is an important factor in predicting a student's retention and motivation for using computer-assisted instruction. By "learner engagement" we mean the user's involvement with and commitment to the activity at hand. The learners in the study reported that each of the three products was highly engaging, particularly the listening and speaking features that enabled high levels of interaction.

Ellis

Students were highly engaged while using *Ellis*. They particularly enjoyed the voice-recording feature. The idea that they could listen to their own accent in comparison with the accents in the video lesson was interesting and fun for the learners. Students were observed repeating a video clip over and over, which, given the absence of frustration, is interpreted as being a good characteristic of the program.

Rosetta Stone

With *Rosetta Stone*, the overall self-reports by learners indicated a high level of enjoyment (4 of 5 "Enjoyed It A Lot"); however, there were some students who experienced boredom while completing the reading and grammar exercises. They mentioned that the reading sections were too long. Learners also noted that these activities needed to be made more interesting. Nonetheless, they did take copious notes from the reading sections and pronounced words and phrases aloud, indicating that they saw value in the language that was presented in the reading sections.

Listening Lab

Listening Lab learners were highly engaged while listening to the audio units, which proceed from Easy to Medium to Difficult at a pace at which students were quite comfortable. After listening to an audio file, learners excitedly completed its associated quiz. Upon clicking a button that showed their scores, learners openly showed emotion – whether disappointment or happiness – at their results. At this point, the learners could choose to move on or to repeat the listening activity after taking a quiz. Users almost always repeated an activity until achieving 100% on the quiz. The immediate feedback feature seemed to enhance motivation. On one learner's first day with the program, she completed her first quiz and received a score of 80%. Then on her second attempt at the quiz, she attained 100%, after which she exclaimed, "I like this game!" and laughed as she clapped her hands. Like her peers, she remained a highly engaged learner throughout the study.

Consistency in Content and Production

As could be anticipated, *Ellis* and *Rosetta Stone*, the two products requiring level-by-level mastery, were generally found to be consistent in the sequencing of activities, levels of difficulty, and navigation. The *Listening Lab*, which is more flexible by design, presented learners with some initial challenges but these were met relatively easily by learners, who reported an overall satisfaction with the flexibility of the program.

Ellis

Ellis is very consistent in its presentation across units. Each unit is composed of sections with role-play activities, grammar activities, and cultural activities, among others, and the buttons that students use to access each area are the same in each unit, which is important to the usability of the product. The content changes from unit to unit, but the structure is standard. Different modules have slight variations but none seem to distract the learner.

Learners reacted very positively to the excellent video quality with real language in *Ellis*; all learners reported to be “Satisfied” or “Very Satisfied” with the audio, video, and photos. The video conversations are often shot at close range, so the learner can readily focus on the speaker’s mouth during pronunciation. This aspect of the video was very appealing to the learner.

Rosetta Stone

As with *Ellis*, *Rosetta Stone* provides a high level of standardization in its behavior across units. All of the units are constructed with the same sequence of activities. The repetition and predictability of the program made it occasionally uninteresting for some. One learner said, “Every unit is too similar. Sometimes I click automatically without thinking.” The consistent use of icons (such as a microphone icon for the recording activity), however, lent itself to ease of understanding.

The rating of video and audio quality in *Rosetta Stone* varied slightly; all but one learner were “Satisfied” or “Very Satisfied” with the audio and photos, but three of the five learners were only “A Little Satisfied” with the video.

Listening Lab

Since *Listening Lab* was not locally installed on a workstation, each audio and video file needed to be downloaded from the Internet server. Therefore, bandwidth and Internet conditions could significantly impact the quality. All learners considered the audio quality satisfying; fewer were satisfied with the photos; one of each reported to be “A Little Satisfied,” “Satisfied” or “Very Satisfied” with the video. The files are small and download rapidly on a local area network connected directly to the Internet, so the download process did not keep the learners waiting, and thereby did not risk losing the learner’s attention. As with the other products, the audio quality on *Listening Lab* is very high, with the inclusion of a few files that contain a child’s voice. However, several learners noted that the child was very difficult to understand.

Unlike *Rosetta Stone* and *Ellis, Listening Lab*, did not always have a full visual consistency across activities. Most of the changes were in layout and were dependent on the browser and its local settings. However, the inconsistencies were slight enough that they did not cause anything greater than moderate confusion. To deal with the changes, some learners initially asked the teacher-observer what their next step should be; other students quickly figured out how to solve the problem and then reported their “success” to the teacher-observer. In general, any learner confusion was short-lived.

Appendix B: Instruments

Intake Forms



CLIENT INTAKE/DATA FORM

Place ID label here

GENERAL AND LANGUAGE BACKGROUND

1. (Interviewer please note) SEX: Male Female
2. Where were you born/raised? _____
3. What year were you born? _____
4. How long have you lived in the U.S. _____ year(s) month(s)
5. What is your first language (native or mother tongue)? _____
6. With regard to your first language (native or mother tongue), how well do you:

	Very Well	Well	Not well	Not at all
Speak it?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Understand it when spoken to?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Read it?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Write it?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. How old were you when you learned to speak English? _____

EDUCATIONAL BACKGROUND AND EXPERIENCE

8. What was your last grade completed?

<input type="checkbox"/> 0 (never attended)	<input type="checkbox"/> K	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9	<input type="checkbox"/> 10	<input type="checkbox"/> 11	<input type="checkbox"/> 12
<input type="checkbox"/> GED	<input type="checkbox"/> Post high school study	<small>(vocational or trade school)</small>				
<input type="checkbox"/> Non-US high school diploma	<input type="checkbox"/> US College Degree	<input type="checkbox"/> Non-US College Degree				
9. What was the language of instruction? _____

10. Have you ever studied English outside of the U.S.? No **(If No, go to Q12)** Yes

11. Which of the following statements describes your English study outside of the U.S.?

I was enrolled in formal EFL instruction. How long? _____ weeks months years.
(circle one)

I studied independently. How long? _____ weeks months years.
(circle one)

(If native English speaker, go to Q15)

12. Have you studied English within the U.S.? No **(If No, go to Q15)** Yes

13. Which of the following statements describes your English study within the U.S.?

I have enrolled in formal ESL instruction. How long? _____ weeks months years.
(circle one)

I have studied independently. How long? _____ weeks months years.
(circle one)

14. Which of the following statements about your ESL enrollment is true? (choose one)

- I am currently enrolled in an ESL class.
- I have taken a class within the last two years.
- My last class was 2-5 years ago.
- My last class was more than five years ago.

15. Have you ever enrolled in a GED or other adult education class? No **(If No, go to Q17)**
 Yes

16. Which of the following statements about your adult education class enrollment is true?

- I am currently enrolled in an adult education class.
- I have taken a class within the last two years.
- My last class was 2-5 years ago.
- My last class was more than five years ago.

17. Have you studied computers outside of the U.S.? No **(If No, go to Q19)** Yes

18. Which of the following statements describes your computer study outside of the U.S.?

I was enrolled in formal computer instruction. How long? _____ weeks months years.
(circle one)

I studied independently. How long? _____ weeks months years.
(circle one)

19. Have you studied computers within the U.S.? No **(If No, go to Q22)** Yes



Place ID label here

COMPUTER ACCESS AND USE

20. Which of the following statements describes your computer study within the U.S.?

- I have enrolled in formal computer instruction. How long? _____ weeks months years.
(circle one)
- I have studied independently. How long? _____ weeks months years.
(circle one)

21. Which of the following statements about your computer class enrollment is true?

- I am currently enrolled in a computer class.
- I have taken a class within the last two years.
- My last class was 2-5 years ago.
- My last class was more than five years ago.

22. Do you rent or own a computer? No **(If No, go to Q27)** Yes

23. Do you have access to the Internet at home? No Yes

24. Who uses the computer? Self **(If NOT Self, go to Q27)** Children
 Spouse/partner _____

25. How often do you use your home computer?

- Everyday Once a week
- A few times a week Less than once a week

26. How much time do you spend using your home computer each week?

- 0-3 hours 4-8 hours 9-12 hours _____

27. Do you use a computer outside of your home? No **(If No, go to Q31)** Yes

28. Where do you use a computer?

- At the library In class
- At work At another location _____

29. How often do you access a computer outside of your home?

- Everyday A few times a week Once a week Less than once a week

30. How much time do you spend using a computer outside of your home each week?

- 0-3 hours 4-8 hours 9-12 hours _____



Place ID label here

FAMILIARITY SCALE: COMPUTERS

31. How much do you know about using a computer to do the following:

I don't know anything	I know very little	I know some	I know a lot	I am an expert
Open a program or application	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Write a letter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use the Internet to do research	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Buy things on-line	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Open and edit an existing document	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use educational software	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

FREQUENCY SCALE: COMPUTERS

32. How often do you use a computer to do the following in English?

Never	Less than once a week	Once a week	A few times a week	Every day
Open a program or application	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Write a letter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use the Internet to do research	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Buy things on-line	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Open and edit an existing document

Use educational software

Technical Skills Assessment

**LTL Listening Comprehension
Technical Skills Assessment**

Place ID label here

Date:

Proctor:

Vocabulary

(Have participant sit at a computer that is turned on.)

No	Yes		
<input type="checkbox"/>	<input type="checkbox"/>	Mouse	
<input type="checkbox"/>	<input type="checkbox"/>	Mousepad	
<input type="checkbox"/>	<input type="checkbox"/>	Keyboard	
<input type="checkbox"/>	<input type="checkbox"/>	Monitor	
<input type="checkbox"/>	<input type="checkbox"/>	Hard Drive <i>(or they may know this just as 'the computer')</i>	
<input type="checkbox"/>	<input type="checkbox"/>	CD Drive	
<input type="checkbox"/>	<input type="checkbox"/>	Cursor	
<input type="checkbox"/>	<input type="checkbox"/>	Click	
<input type="checkbox"/>	<input type="checkbox"/>	Screen	
<input type="checkbox"/>	<input type="checkbox"/>	Browser	
<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	<input type="checkbox"/>		

Technical Skills

(Have participant sit at a computer that is turned off.)

No	Yes		
<input type="checkbox"/>	<input type="checkbox"/>	Turn on monitor	
<input type="checkbox"/>	<input type="checkbox"/>	Turn on hard drive <i>(the computer)</i>	
<input type="checkbox"/>	<input type="checkbox"/>	Open Word doc on desktop	
<input type="checkbox"/>	<input type="checkbox"/>	Edit doc – fix misspelled word	

<input type="checkbox"/>	<input type="checkbox"/>	Start a new paragraph – participant types a sentence about him/herself	
<input type="checkbox"/>	<input type="checkbox"/>	save file as 'participantname.doc'	
<input type="checkbox"/>	<input type="checkbox"/>	re-open the doc that he/she saved	

Internet Skills

(Ask student if they know how to search on the Internet)

No	Yes		
<input type="checkbox"/>	<input type="checkbox"/>	Open the Internet	
<input type="checkbox"/>	<input type="checkbox"/>	Enter a Web address	
<input type="checkbox"/>	<input type="checkbox"/>	Search for... (their choice)	
<input type="checkbox"/>	<input type="checkbox"/>	Close the Internet browser	
<input type="checkbox"/>	<input type="checkbox"/>		

Close this session with a review of the process that the participant has just gone through. Then sit with them and open the software program that they will be using in the Lab.

15 Hour Interview

Place ID label here

SECTION 1: INTERVIEW

Select Product: **Product A** **Product B** **Product C**

1. What do you like about using this product? _____

2. What don't you like about using this product? _____

3. If you could add something to this product, what would it be? _____

4. If you could take something out of this product, what would it be? _____

5. Would you recommend this product to other ESL learners? Yes No

6. Other comments _____

SECTION 2: SURVEY

1. How much do you feel your English *listening* skills have improved since you began using this product?

- Not at all
 A little
 Somewhat
 A lot

2. How would you describe the level of English used in this product?

- Too easy for me
 Appropriate for me
 Too difficult for me

3. How would you describe the pace of the lessons?

- level of difficulty did not change from lesson to lesson
 level of difficulty changed too slowly from lesson to lesson
 level of difficulty changed gradually from lesson to lesson
 level of difficulty changed quickly from lesson to lesson
 level of difficulty changed too quickly from lesson to lesson

4. How would you rate this product on the following scale?

	Very	Somewhat	A little	Not at all
Interesting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Challenging	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Useful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fun	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Boring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Confusing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Frustrating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. How satisfied are you with the *quality* of following? (Rate only items that apply to your product)

	Very satisfied	Satisfied	A little satisfied	Not satisfied
<u>Audio</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Photo</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Video</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. **Product B users only:** How satisfied are you with the *content* of the following?

Very satisfied	Satisfied	A little satisfied	Not satisfied
RS Unit 1: Travel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RS Unit 2: Housing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RS Unit 3: Shopping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RS Unit 4: Employment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments about a specific section	_____		

7. **Product C users only:** How satisfied are you with the *content* of the following?

Very satisfied	Satisfied	A little satisfied	Not satisfied
Easy Listening Quizzes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Easy Listening Video	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medium Listening Quizzes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medium Listening Videos	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments about a specific section	_____		

8. **Product A users only:** How satisfied are you with the *content* of the following?

	Very satisfied	Satisfied	A little satisfied	Not satisfied
Airport	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ground Transportation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hotel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Food	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Phone Skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Exit Interview

Place ID label here

SECTION 1: INTERVIEW ABOUT THE PRODUCT

Select Product **Product A** **Product B** **Product C**

1. What do you **like** about using this product? _____

What **don't** you like about using this product? _____

If you could **add** something to this product, what would it be? _____

2. If you could take something **out** of this product, what would it be? _____

3. Would you **recommend** this product to other ESL learners? Yes No

4. Other comments _____

SECTION 2: ENGLISH SKILLS ASSESSMENT

1. How much do you feel your **English listening skills** have improved since you began using this product?

- Not at all A little Somewhat A lot

2. Do you feel your English skills have improved since you began using this product?

- | Not at all | A little | Somewhat | A lot | |
|--------------------------|--------------------------|--------------------------|--------------------------|----------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Speaking |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Reading |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Writing |

1. Do you agree with the following statements?

- | Not at all | A little | Somewhat | A lot | |
|--------------------------|--------------------------|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | It was difficult to use this program without the assistance of a teacher. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | After using this program, I feel more confident doing everyday activities such as going to the grocery store or taking public transportation. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | I enjoyed using this program. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | I plan to continue to use this program to better my English skills. |

1. What is the best way to use this product?

- on your own* *in a class* *with a partner*

Please explain

SECTION 3: COMPUTER SKILLS ASSESSMENT

2. Was this the first time you used a computer to learn English?

- No Yes If no, what products or programs have

you used before?

3. Do you agree with the following statements?

Not at all	A little	Somewhat	A lot	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	My computer skills have improved by using this product.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Using a computer program is an effective way for me to study English.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	I will continue to use computer-based educational programs in the future.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	I am more comfortable learning English on the computer than I was before

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	coming to the lab for 30 hours.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	It is easier to learn English in a class than by using a computer program.

1. Were there technical problems or confusion with using the computer that interfered with your learning?

No

Yes

If yes, please explain.

SECTION 4: FAMILIARITY SCALE: COMPUTERS

1. Do you rent or own a computer? No **(If No, go to Q5)** Yes
2. Who uses the computer? Self Spouse/partner Children _____
3. Do you have access to the Internet at home? No Yes
4. For what purpose(s) do you use your home computer?

- | | | |
|---|--|---|
| <input type="checkbox"/> Listening to music | <input type="checkbox"/> Studying English, math or writing | <input type="checkbox"/> Send e-mails with attachments |
| <input type="checkbox"/> Writing letters | <input type="checkbox"/> Paying bills on-line | <input type="checkbox"/> Search for information on the Internet |
| <input type="checkbox"/> Playing games | <input type="checkbox"/> Send pictures | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Chatting on-line | <input type="checkbox"/> Build a homepage | |
| <input type="checkbox"/> Learning on-line | <input type="checkbox"/> Send letters via e-mail | |

5. Are you comfortable using a computer to do the following?

Not at all	Not Very	Somewhat	Very	Extremely	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Listen to music
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Write letters
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Chat on-line
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Send letters via e-mail
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Send e-mails with attachments
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Build homepages
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pay bills on-line
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Play games
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Use educational software
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Troubleshoot
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Learn on-line
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Send pictures
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Search for information on the Internet

SECTION 5: FREQUENCY SCALE: COMPUTERS

1. Aside from the time spent in the lab, how often do you use a computer to do the following in English?

Never	Less than once a week	Once a week	A few times a week	Every day	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Listen to music
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Write letters
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Chat on-line
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Send letters via e-mail
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Send e-mails with attachments
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Build homepages

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pay bills on-line
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Play games
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Use educational software
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Troubleshoot
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Learn on-line
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Send pictures
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Search for information on the Internet

Instructions for using the Exit Interview:

Goals:

This interview is our last chance to get the learner’s perspective on the usability and appeal of the product. The questions are sometimes not open ended but at the end of section 1 there is ample space to write down comments related to other questions.

Do always substitute the words “the product” for the name of the program used by the learner.

Section 1:

- Introduce the task to the learner by highlighting the key words on some questions
- Have student read and write the answers on their own;
- Interview the learner to clarify and expand the answers

Sections 2-5

- Ask the learner to fill out, emphasize that their opinions are valuable.
- Give the learner some time to finish
- Look for inconsistencies or indications of a strong opinion.
- Interview the student to clarify and expand the answers

- Make sure that all tasks have been done
- Thank the learner for all of his or her time
- Pay the student and make sure that they sign receipt of payment and the travelers’ checks.

Other areas to explore

How satisfied with content
 How satisfied with topics

Compare with previous comments