

LiteracyLink Pilot Test, Fall 1998

- ***Workplace Essential Skills*** Materials for Adult Learners
- ***LitTeacher*** Online Professional Development Courses for Teachers

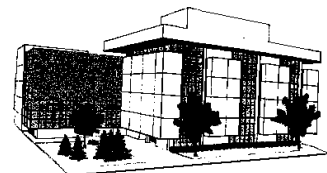
*Multimedia Resources for Adult Literacy
from the PBS LiteracyLink Project*

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Executive Summary

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Workplace Essential Skills Materials for Adult Learners and
LitTeacher Online Professional Development Courses for Teachers

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The original plan for developing LiteracyLink products included a pilot test of the emerging products midway through the project period to determine if any design adjustments were needed to better meet the needs of the target audience. Two sets of products were pilot tested in the fall of 1998. From the 24-unit *Workplace Essential Skills* series, two "mini-courses" were tested: *Finding a Job* (units 1-5) and *Workplace Writing* (units 13-15). From the *LitTeacher* professional development series, three courses were tested: *Creating a Technology Plan*, *Integrating the Internet*, and *Planning for Technology*. This is an executive summary of the findings. The full report is available from PBS.

Workplace Essential Skills

Finding a Job and *Workplace Writing* were tested in 10 of the 25 LiteracyLink innovation sites. Adult literacy teachers in these centers recruited students in their service area to study one of the two mini-courses for a 4-6 week period during October and November. Seven instructors taught *Finding a Job* to a total of 42 students. Eight instructors taught *Workplace Writing* to a total of 24 students.

In general, the materials were well received by both teachers and students. The videos were seen as refreshing, and the online components were viewed as *very* exciting additions to the centers' instructional offerings. Several features were identified as needing adjustment to maximize the utility of the *WES* products for the target audience.

- *Redundancy among the Components.* There appears to be more redundancy in the content of the print and online than is needed. Given how much time it takes for students to complete the materials for any one unit, it may be useful to eliminate some of the redundancy.
- *Reading Level of the Print & Online Components.* In places, the reading level of the material exceeds the target of 5th - 8th grade.
- *Video Style.* The videos are produced in what is referred to as a magazine format, with several story lines threaded within individual videos and across the series. Multiple, interwoven story lines proved challenging for students with lower

academic skills. These students experienced difficulty tracking the variety of stories and story elements, particularly when videos were shown in their entirety. Producers should consider whether anything can be added to the videos that would better assist viewers in keeping track of the different story lines.

- *Video Model.* The video model for the series calls for showing stories from the workplace. This model is more highly valued in the Finding a Job units than it is for Workplace Writing. Given that the writing units typify the bulk of the videos remaining to be produced, some thought needs to be given to the appropriateness of this model.
- *Online.* Teachers and students alike felt this medium contributed the most to student engagement and attainment of course goals. In addition, while learning content, students also learned computer skills that are valued by employers. However, some design elements hinder learning some of the content. Materials on the Web do not look the same as they do in a book. Despite the fact that the LitLearner Web site is clean and uncluttered, learners sometimes had problems knowing where they were and what they should do when they wanted to find their next task. For example, LitLearner screens have identical formatting that hindered students in their attempts to find out where they were in the Web site at any given time. Some of the Web tools (portfolio, log-on, video replay) need minor design adjustments so they work more easily for users.

For the typical literacy center, Internet connectivity and online instruction are still novelties. The test sites were no exception. Sites had difficulty assembling and maintaining the necessary equipment: high-end computers, a fast Internet connection, and properly configured software. In some cases, the difficulty could be traced to financial resources, in others it was having sufficient technical support to insure dependable connectivity. Before online technology can become as transparent to use as broadcast television, teachers and others in adult literacy environments will require assistance to understand their technological needs and learn how to acquire and manage the necessary tools.

LitTeacher

The *LitTeacher* model of Web-based professional development is a significant innovation in the field of adult literacy. The online model developed at NCAL is a strong one. The first three *LitTeacher* professional development courses were tested by 57 adult literacy educators and administrators in October and November of 1998. All three courses were well received. A number of adjustments will ensure that the courses become widely used when they are made available in the summer of 1999.

- *Content.* The content of each of the courses was highly rated for its quality and value to the learners.
- *The Learning Tools in LitTeacher.* In addition to the usual text and graphics that comprise a Web site, NCAL has developed a suite of reading, writing, and communication tools to support online instruction: log-in, video playback,

electronic portfolio, chat, and bulletin board. These tools are both attractive and functional; minor adjustments will improve their usefulness.

- *"Classroom Communication."* The online chat and bulletin board functions did not fully meet the needs of students for communicating with one another or with the instructor. Some other modalities may be worth considering.
- *Timing.* The courses were tested in the fall season. The majority of testers suggested courses be offered during other seasons to better fit the schedules of teachers and administrators in adult literacy.
- *Course Length.* Many testers wanted their course to be longer than 3-4 weeks. The current amount of time allocated by the designers for reading and related exercises worked well. But many students wanted a longer period of time than was allotted to complete class "projects" such as developing a technology plan for one's center or testing out an Internet lesson plan with a tester's own students.
- *Web Literacy among Adult Educators.* Many testers had difficulty with basic navigation tasks. They requested a mini-course be offered in computer and Web skills to prepare them for the demands of a regular online course.
- *The Internet as a Delivery System.* Currently, substantial problems exist with the reliability of the system that delivers the LitTeacher content from PBS in Alexandria (VA) to the end users' computer screens. The system includes three components: the national Internet system, the local connection between an ISP and a user's computer, and the typical adult educator's computer hardware and software. Current problems with each of these components will likely solve themselves in the coming years, but at present they make this type of online learning challenging in many localities.

The ultimate success of *LitTeacher* will depend on what incentives exist for teachers and administrators to sign up for and complete these courses. Careful thought needs to be given these issues by the LiteracyLink developers and their advisors.

Overall, *WES* and *LitTeacher* show great potential to become important resources in the adult literacy enterprise in the United States. Their potential can be realized by making minor adjustments to the products and by educating those responsible for the technological infrastructure in adult literacy centers regarding the design of the 21st century virtual classroom.

TABLE OF CONTENTS

EXECUTIVE SUMMARY

TABLE OF CONTENTS

INTRODUCTION THE LITERACYLINK PROJECT	1
CHAPTER 1 PILOT TEST DESIGN	3
WORKPLACE ESSENTIAL SKILLS	3
<i>LITTEACHER</i> PROFESSIONAL DEVELOPMENT COURSES	7
CHAPTER 2 TESTING THE <i>FINDING A JOB</i> UNITS	9
TEACHERS RATE THE COURSE	11
TEACHER ASSESSMENTS OF THE INDIVIDUAL PRODUCTS	16
STUDENTS RATE THE COURSE	19
SUMMARY	21
CHAPTER 3 TESTING THE <i>WORKPLACE WRITING</i> UNITS	23
TEACHERS RATE THE COURSE	25
TEACHER ASSESSMENTS OF THE INDIVIDUAL PRODUCTS	28
STUDENTS RATE THE COURSE	30
STUDENT ASSESSMENTS OF THE INDIVIDUAL PRODUCTS	32
SUMMARY	33
CHAPTER 4 <i>WORKPLACE ESSENTIAL SKILLS</i> IN PERSPECTIVE	35
ADJUSTING THE PRODUCTS TO INCREASE USEFULNESS	35
DISSEMINATION AND TRAINING	43
CHAPTER 5 <i>LITTEACHER</i> PROFESSIONAL DEVELOPMENT COURSES	49
CREATING A TECHNOLOGY PLAN	50
INTEGRATING THE INTERNET	59
PLANNING FOR TECHNOLOGY	67
VOLUNTEER ATTRITION—FURTHER LESSONS	74
<i>LITTEACHER</i> IN PERSPECTIVE	75
APPENDIX A SUPPLEMENTARY TABLES	79
APPENDIX B DESCRIPTIONS OF LITERACYLINK PRODUCTS	83

Introduction

The LiteracyLink Project

LiteracyLink® is a Research and Development project with the goal of developing two new courses for adults seeking to improve their employability skills. *Workplace Essential Skills* (WES) is a course for pre-GED adults who want to learn how to apply for a job as well as refine their reading, writing, and mathematical skills to meet the demands of common workplace settings. *GED 2000* is a course to prepare adults for the new GED test expected to be released in the year 2001. The two curricula are multimedia in that they consist of an integrated set of video, print, and Web-based components.

In addition to materials for adult learners, LiteracyLink offers two online products that provide resources for adult literacy teachers: *LitTeacher*® and *PeerLit*. *LitTeacher* is a collection of professional development courses. *PeerLit* is a collection of peer-reviewed Web resources that teachers can use to enhance instruction for adult learners. An additional LiteracyLink product is an annual videoconference on various topics in adult literacy instruction. This video conference will be distributed nationally by PBS.

LiteracyLink is a partnership among Public Broadcasting Service (PBS, project leadership, distribution of broadcast and online components, videoconferences, technical support), Kentucky Educational Television (KET) and Kentucky Department of Education (development of video and print) and the National Center on Adult Literacy (NCAL) at the University of Pennsylvania (development of all online components). Funding for the project comes from the U.S. Department of Education Star Schools Program. Supplementary funding for evaluation comes from the Department's Office of Vocational and Adult Education.

The project runs for five years, from July of 1996 through June of 2001. The products will be released for national distribution at various points during this period. *Workplace Essential Skills* (WES) is slated for release in the fall of 1999; *GED 2000* for Fall, 2001. *PeerLit* is currently available, and its collection is expected to grow throughout the project. The first *LitTeacher* professional development courses will be available beginning in July, 1999.

Chapter 1

Pilot Test Design

The plan for developing the LiteracyLink products includes a pilot test of the emerging products to determine if any adjustments are needed in their design. The timing for this pilot test was fall of 1998. Two sets of products were tested: WES courses *Finding a Job* and *Workplace Writing*, and *LitTeacher* courses *Creating a Technology Plan*, *Integrating the Internet*, and *Planning for Technology*. This report presents the findings of the pilot test.

Workplace Essential Skills

The full 26-unit *Workplace Essential Skills* (WES) program will be available Fall, 1999. In Fall, 1998, the various products (video, print, online, and teacher's guide) were in various stages of development. However, the producers of each were able to generate sample products for formative testing—a process designed to test the usability of the various components by learners and their teachers. The timing of the formative test is early enough in the development process to permit corrections—especially to the online component and Teacher's Guide—before the complete package of products is released next summer. For testing purposes, eight units were assembled into two mini-courses: *Finding a Job* (Units 1–5) and *Workplace Writing* (Units 13–15).

Pilot Test Sites

The LiteracyLink project includes 25 innovation sites—adult literacy centers that serving as test beds for the materials as they are developed—that were recruited when the project began. Ten of the 25 sites participated in the pilot test. First, PBS selected five PBS hubs or stations. Each of these in turn recruited five adult literacy centers in their broadcast area. The centers had to serve the target population and be interested in trying to increase the use of learning technology in their programs. The hubs were given some guidance for their recruitment to ensure that different types of organizations would be included among the sites—community colleges, adult education divisions of public school districts, and community based organizations. Recognizing that many libraries have an interest in this population and are beginning to provide Internet access to patrons, the pilot test included two libraries as well. The five hubs and their centers are listed below.

Table 1.1. Innovation Sites

State	Hub	Center (* = WES Pilot Test Site)
CA	KCET-TV, Los Angeles	Bresee Foundation, L.A. (CBO) Community Career Development Center, L.A. (Priv)* Community Learning Center, Bakersfield (Pub)* Los Angeles Urban League (CBO) Mission Viejo Public Library (Lib)
IA	IPTV-Iowa Public Television	Adult Learning Center, Iowa Western CC, Council Bluffs (CC)* Decorah Public Library, Decorah (Lib)* Des Moines Area CC, Des Moines (CC)* Dubuque Learning Center, N.E. Iowa CC, Dubuque (CC)* Iowa Literacy Resource Center, Hawkeye Community College, Waterloo (CC)*
KY	KET-Kentucky Educational Television	Adult Learning Center, Henderson CC, Henderson (CC)* Ahrens Learning Center, Louisville (Pub) ABE Tech Program, London (Coll) Adult Learning Center, Murray State U., Murray (Coll) S. E. Regional Tech Center, Middlesboro (Coll)
NV	KNPB-TV	Center for Employment Training, Reno (Pub) Lahontan Valley Literacy Volunteers, Fallon (Lib/Priv) Pershing County Adult Ed., Lovelock (Pub) Sun Valley Family Research Center, (CBO) Western NV CC, Carson City (CC)
NY	WNED-TV	Clarkson Center, Buffalo* Community Education Center, Niagara Falls* Equal Education Opportunity Center, Buffalo (Priv) Herman Badillo Bilingual Academy, Buffalo (Priv) Everywoman Opportunity Center, Buffalo (CBO)

NOTE: In parentheses after each center's name is the sponsorship: CBO = Community Based Organization; CC = Community College; Coll = College or University; Lib = Library; Priv = Private; Pub = Public School.

In the summer of 1998, innovation sites that matched several criteria were invited to try out one of the two mini courses during the September-December time frame. Nineteen teachers representing 14 classrooms agreed to the regimen described in the table below. In brief, participation in the evaluation entailed four obligations:

Table 1.2. Field Test Regimen for WES

Activity	Timing
Recruit 5–15 students to study one of the two mini-courses	September - Early October
Attend a one-day teacher training session conducted by a team of LiteracyLink developers	September - Early October
Teach the materials for 4–6 weeks, approximately one unit per week	October - December
Provide weekly feedback to the evaluators regarding the experience. Assist local evaluation coordinators in distributing and collecting survey data from learners	October - December

Research Questions

A number of research questions guided the evaluation.

Focus on Learners

- *Video.* Is the video interesting and comprehensible? Does it stimulate discussion? Do reactions remain constant for the duration of the course?
- *Workbook.* Is the workbook interesting and comprehensible? Are the tasks/exercises easily understood? Are the tasks valued? Do reactions remain constant for the duration of the course?
- *Online.* Can learners access and navigate the online materials easily? Are the tasks easily understood and completed? Do learners value the online activities? Do reactions remain constant for the duration of the course?

Focus on Teachers

- How do teachers handle a curriculum with three different media? Can they orchestrate the multiple learning activities? Do they use all three media?
- How do they rate the materials compared with competing curricula for their ease of use and fit with learners' needs?

Focus on Centers

- Does the curriculum meet the needs of the center and the students it serves? Will the center adopt the WES curriculum when it becomes available in Fall, 1999? Will it complement or supplant existing offerings?

Multiple and varied data collection strategies were used to gather answers to these questions. These strategies are summarized in the assessment plan shown below.

Table 1.3. Assessment Plan

Time	Data from Students	Data from Teachers
Pretest (1–2 week window)	Baseline Questionnaire (demographics)	
Instruction (4–6 weeks)	Weekly diary of time spent, readability of the material & clarity of the tasks. Perceived learning	Weekly E-mail Questionnaires on learning/teaching issues; Written reflections on the Teacher's Guide at the end of every unit
Posttest (1–2 week window)	End of Program Survey: perceived learning & course ratings	End of Program Survey on learning/teaching issues & recommendations for adoption

Paper-and-pencil questionnaires were used to collect much of the information. For students, these included a baseline survey to collect demographic information, brief

weekly reflection surveys in which students were asked to indicate how easy or difficult the week's tasks had been, and follow-up surveys assessing their reactions to the experience. For teachers, one of the major surveys included a weekly e-mail with topics ranging from start-up issues to the integration of the different products. An end-of-program written survey assessed teachers' overall reactions to the course and to the individual products.

Another important source of information came from site visits that included structured observations, face-to-face interviews with teachers, and focus groups with students. Every site was visited by one of the two evaluators at the time the teachers were trained. Return site visits were made to seven of the sites while instruction was in progress.

The Workplace Essential Skills Products

Workplace Essential Skills (WES) is being designed to enhance the job skills of adults at the margins of employability. The target audience is the ABE learner whose reading skills are in the range of grades 5–8. The WES curriculum is outlined in Appendix B. Three media—video, print, and online—provide complementary learning opportunities. The materials are designed primarily for mediated¹ use in ABE programs offered by adult learning centers in a variety of settings—community colleges, community-based organizations, K–12 adult literacy programs, and public libraries. A teacher's guide provides instructors with suggestions for ways to utilize the different materials with adult audiences.

The videos are each 30 minutes in length. Their role is to stimulate discussion by showing adults grappling with employment challenges that range from applying for jobs to completing common forms of writing on the job. They also show employment from the employer's side of the desk. For example, there are interviews with human resources staff describing what they look for on an application form and in an interview. In addition, there are interviews with job supervisors describing the forms employees are expected to complete and the types of writing needed to make an enterprise function. A workbook accompanies the videos for each course. It provides activities to prepare learners for what they will see in the videos and helps them derive lessons from the videos after they view them. The workbook also provides direct instruction and practice in the skills being promoted (e.g., filling out a job application, completing a job ticket describing what the employee did on a job assignment, etc.).

The online component (called *LitLearner*SM) is designed to help learners manage all of their learning activities—video and print as well as a complementary set of online exercises. As a student completes each activity, the Web page displays the date when it was done. Many of the online exercises require a learner to type answers to questions or activities directly into a form on the Web. *LitLearner* maintains these responses in the learner's online portfolio.

¹ In this report, "mediated" refers to learning that is assisted by a teacher or human guide. The mediator helps the learner engage and understand the content and tasks contained in the various media.

The online exercises are of several different types. One is a video activity intended to be completed after viewing the video. The learner views a digitized clip of a brief segment of the full video and then answers questions about the clip. A second type of activity involves practicing a skill; for example, writing a memo for entry into the portfolio. A third type is an Internet activity in which the learner selects a link to a Web site developed by another organization that provides additional resources. One example is the Web site “YouthWorks Career Quest Top 10 Jobs Checklist” that learners can use to take a job interest inventory.

The broader vision for *LitLearner* includes a section of the Web site that is still under development. Called *LitHelper*SM, this needs assessment tool will be the starting point for all learners. It is designed to guide learners through various activities that help them identify and clarify their goals and then to prescribe the LiteracyLink learning activities that will help learners attain those goals. In August 1998, *LitHelper* had not yet been sufficiently developed to be included in the pilot test.

The results of the pilot test of *Finding a Job* are reported in Chapter 2 and the results for *Workplace Writing* are in Chapter 3. An overview of the lessons learned from testing the two mini-courses appears in Chapter 4.

***LitTeacher* Professional Development Courses**

An integral part of the LiteracyLink project is the development of a series of online professional development courses for adult literacy teachers. Three courses were available for pilot testing in the fall of 1998.

- *Creating a Technology Plan: Developing Your Mission and Vision for Technology* (Start date: 10/1/98)
- *Integrating the Internet into the ABE/GED Curriculum: Using Online Resources with Your Learners* (Start date: 10/21/98)
- *Planning for Technology: Understanding the Role of Technology* (Start date: 11/4/98)

Each course was designed to last 3–5 weeks. The developers estimated that participants would spend a total of 12 hours (six hours online and six hours offline) per course completing the work.

Testers were recruited in August of 1998. An invitation was sent to all innovation site teachers who were not involved in the WES pilot test. Additional invitations were tendered to the adult literacy directors of six states. They in turn invited administrators and educators in their state to try out one or more of the courses.

A total of 102 adult literacy teachers and administrators volunteered to test the three *LitTeacher* courses. One-third are between the ages of 25 and 45; two-thirds are over 45.

Of the initial 102 volunteers, 57 enrolled in the courses and returned both the pre- and post-course surveys. Characteristics of the testing group are discussed in Chapter Five.

Research Questions

A number of research questions guided the evaluation of the *LitTeacher* courses.

- *Content.* Are the content and learning activities valued by the target audience?
- *Pacing.* Do participants complete all the assignments? If not, is lack of completion attributable to the course content, the technology, or to factors in participants' personal lives?
- *Online Tools.* Many new tools were created that define this electronic classroom—chat software, digital video clips, and electronic portfolios. Does each function in a manner that students feel supports their learning in comfortable ways?
- *Information Delay.* In a Web-based course, information must travel back and forth between a server and the participant's computer across the intricate Web of connections called the Internet. There can be a noticeable lag for various functionality. Are the lags tolerable for participants?
- *Timing.* When during the year should courses be offered? How long should each course last to adequately cover the content? When during the week should chats be scheduled to fit the schedules of a majority of participants?

Chapter 2

Testing the *Finding a Job* Units

The *Finding a Job* mini-course covers five topics: planning for work, matching skills to jobs, applying for jobs, making the search for your job, and interviewing. An outline of the course appears in Appendix B.

The Test Situation

The mini-course was taught in classrooms in seven of the innovation sites (see Table 1.1). The average class size was six learners. Five of the classes had a single teacher; two were team taught. The teachers ranged in teaching experience; three had taught for 2–6 years; five for 9–16 years. All had experience teaching GED prep and/or workplace readiness students—the target audience for the WES series. Their prior experience teaching in a class with computers varied; five had no experience while four had some experience. When asked to rate their own ability to accomplish basic computer tasks such as word processing, most said *strong*². But only two indicated they were proficient navigating the World Wide Web or helping students operate a computer.

Table 2.1 *Finding a Job* Test Groups

Demographic		n
No. of Classrooms		7
Total No. of Learners		42
Ave. Class Size		6
Ave. Contact Hrs. / Week		7.5
Age	16-18	22
	19-45	20
Gender	Males	23
	Females	19
Reading Level	8 th	22
	>8 th	20

Additional detail in the Appendix, Table A1

Forty-two students completed the mini-course. Most (73%) had completed some high school, but had not graduated. One-third were working part- or full-time; the remainder

² Italic type is used to indicate all survey question and response items discussed in this report.

were either out of the work force entirely or looking for work. The group had slightly more males (55%) than females.

The WES materials are being written to be comprehensible to learners reading between the 5th and 8th grade levels. About one third of the sample (36%) was rated at this level by their teachers; half were rated higher (48%) and 17 percent lower than fifth grade.

Most of the students had little prior exposure to computers or to the Internet. A small group, however, had recently taken a course on the computer as part of the curriculum at their literacy center. (See Appendix A, Table A1 for additional demographic breakdowns of student participants.)

The sample includes a number of students who are at the edges of the original target audience for the WES program. Half of the pilot sample (52%) were between 16 and 18 years of age. These students were all high school “push outs” who were expelled from the regular school system, but who were still the system's responsibility. While these students were not envisioned in the original blueprint for LiteracyLink as a target audience, the developers recognized early on that this group might indeed benefit from the WES materials. Thus, some of these high school students were recruited for the pilot test; however, the sample contains a larger portion than expected. Three of the innovation sites served this population. In the end, high school students proved easier to keep in the test than other adults who were more likely to drop out of the course because of personal difficulties or because they got a job.

Teachers were given 5–6 weeks to cover the material. They were instructed to take the time required to cover each unit, but they also knew the pilot test was not to extend beyond six weeks. All of the teachers completed at least four of the five units in the time allotted. Typically, the first unit took more than one week as teachers helped students become oriented and familiar with the computer and online components. The remaining units were completed at a rate of approximately one unit per week.

Teachers Gauge the Audience for Finding a Job

Teachers were asked to assess what types of students should take the course. In general, they thought it was appropriate for a wide range of students: GED Prep and ABE (though one of the teachers who checked ABE added “if you lower the reading level”). All saw it as appropriate for GED graduates as well. One teacher noted that having a GED does not guarantee an individual will have skills for which employers are looking. She concluded that *Finding a Job* provides training in those skills.

Time Needed to Cover the Material

How long does it take to teach the *Finding a Job* units? The testers tracked the actual time they spent teaching each unit. The average time spent is shown in the table below. On average, the teachers spent a little less than four hours per week teaching the course. Since most teachers taught one unit per week, these numbers also are an estimate of how much time they spent to cover a unit.

Table 2.2 Weekly Class Time Spent Teaching *Finding a Job* Units (Hours)

Unit	1	2	3	4	5	Ave.
Actual Time,	3.79	4.31	3.47	3.90	3.72	3.84
Pilot Test						

NOTE: Cells are the average number of hours across all teachers.

In the end-of-program survey, teachers were asked: *How much class time per week would you recommend to cover the material?* Excluding one teacher who thought it required 30 hours, the average was a little under 10 hours (9.4) with a range of 6–15 hours. All but one teacher agreed that one unit could be covered in a week.

The recommended number of sessions per week varied greatly from 2–3 per week to 5 per week, with each session lasting 1.5–3 hours. Estimates reflected local center norms. Some teachers were accustomed to meeting with students five days a week; others met with students just twice a week. Many teachers felt the curriculum was appropriate for both class-centered instruction and individualized instruction. Whatever the format, all the teachers concurred that covering the material required more contact time than they had spent during the pilot test.

Some of the teachers recommended assigning workbook and online activities as homework; others felt this was not appropriate. Those who supported assigning homework estimated that students should spend an additional 3.6 hours outside of class on the workbook and 5.1 hours doing the online.

Teachers Rate the Course

Overall Ratings

Overall, pilot-test teachers were quite positive about WES. They were asked: *Overall, what recommendation would you make to others in adult education serving students like yours regarding WES?* They were given 3 choices.

1. There are enough flaws in the goals and design of WES that you should not use the series.
2. WES is a quality series but not significantly better than other resources that are available for the same purpose
3. WES is a quality series and an outstanding learning experience for students

None recommended other adult educators *not use the series*. One teacher selected the second option and seven selected the highest rating. Below is a sampling of comments:

LiteracyLink Pilot Test — Fall, 1998

The WES materials are excellent but would work best with those students who are at least at beginning GED level. They have more of the skills needed to go out and find a job. The examples given in the videos were definitely superior—lots of applicable information!

We may not use [next fall] every bit of WES, and it certainly isn't for the students at the lower end of Pre-GED, but we would use many components of WES.

It can be used to supplement job-seeking materials I already use, and my materials can be incorporated into the WES series.

Even the one teacher who thought that WES was equivalent to other programs had this to say:

Of the students who participated in the project, one student got a job (which she credits to the information she learned). Another is using the LitLink Info towards launching a second career; and a third student had never been on the Internet before and has purchased a computer for himself and his wife because of his interest in the Internet, e-mail, etc. Thank you! For the privilege of participating in this project!

What Teachers Like Most

Teachers were asked four questions about the series: (1) List three things your students learned from studying this course that you value highly; (2) What did you or they like most about this course?; (3) like least?; and (4) Identify aspects most in need of improvement.

The things that teachers value highly include the presentation of standard knowledge and information about jobs. They agreed that students learned about:

pre-application work, the application, the interview, post interview ideas, and networking.

Basics of job-seeking, including the smallest details; effective interview preparation and presentation.

Finding a Job takes persistence, hard work, and practice at some skills.

There are different kinds of work; don't limit yourself.

Teachers also identified the self-insight that comes from engaging these particular materials.

I liked the fact that it mandated students to take a look at themselves, their talents, and skills. Most hesitate to do that.

In the beginning units about assessing their skills, they reached the realization that, "yes, I am good at something."

Everyone has skills which are valuable, but not necessarily learned in school.

They developed critical thinking skills in real-life situations.

They increased their self-esteem.

They also valued the exposure to computers and to the Internet:

The students really enjoyed getting "on-line" the first time & trying different URLs.

The students and I really liked getting on the Internet.

Introducing the students to the Internet as a research tool.

Several teachers identified an outcome that may not be so obvious. Working with unfamiliar technology can have beneficial side effects.

There was a lot of group cohesiveness, helping each other on the computer.

Group cohesiveness—sharing, supportive helpful to each other.

Not surprisingly, the materials themselves were noted.

There was good basic and interesting information [in] the video.

The multi-cultural aspect using all different kinds of people [a teacher in an all Caucasian community].

The very logical step-by-step approach which was sensible and easy to teach/use.

The practical applications; i.e., filling out applications/resumes, etc.

Flexibility—what materials to use each lesson.

What Teachers Dislike—Reading Level

The pilot teachers found many things to be pleased with in *Finding a Job*. But they also found things they did not like and felt need to be improved. The biggest problem attributable to the materials themselves is the reading level.

One teacher whose students were reading entirely in the target range said: "the reading level is too high for our students to do parts independently." Another teacher used the materials with advanced students (GED attained or almost attained and reading at the upper high school level) and found that the reading level was beneath her students. This suggests that the perceived reading level may be 9th – 10th grade.

A separate question asked *What was the minimum level necessary for students to do well in the workbook?* Two teachers said 7th or 8th grade; two others said 9th grade or higher. There was a similar response to the online. Clearly, the reading level of the text is an issue that needs to be given careful consideration.

The number of teachers recommending various minimum reading levels are shown in the table below. Half (4) estimated ninth grade reading skills were the minimal to do well

with the workbook and almost as many felt this was also the minimum requirement for the online component as well.

Table 2.3 Teachers' Estimates of Reading Level
Minimums for WES Materials

Reading Level	Workbook	Online
Less than 5 th Grade	–	1
5 th to 6 th Grade	2	2
7 th to 8 th Grade	2	2
9 th Grade or Higher	4	3

What is the minimum reading level necessary for students to do well with the [workbook/online]?

Because this issue is so important for the developers, it is worth further exploring the issue to see if the teachers had a good basis for making their estimates. Regarding the workbook, the two teachers who recommended 5th–6th grade both taught the unit to students whose reading skills were gauged to be at the 5th–6th grade level. These teachers had appropriate experience to make their judgment and they felt that the level was appropriate. We can only surmise that their students did not show evidence of having difficulty reading the materials. Possible explanations for instructor estimates are considered in Chapter 4.

Of the four teachers who recommended 9th grade or higher, two taught students who read at the 9th grade level or higher, so these teachers may not know whether a lower level reader can easily understand the materials. Of the other two teachers recommending 9th–10th grade: one taught students who all read at the 5th–6th grade level. The other taught a range of reading abilities: two read at the 5th–6th grade level, two at the 7th–8th grade level, and three at 8th grade or above. A similar pattern characterizes the teachers and their ratings of the reading level requirements for the online component. These findings suggest there is some validity to the opinion that the reading requirements of the textual material may be higher than the levels aspired to by the developers.

Other Dislikes

Of the other dislikes indicated by teachers, many were factors unrelated to the *Finding a Job* materials. They included too much time required to cover the materials and too few computers for students.

Table 2.4. What did you/they like least about this course?

Comment
There was too much repetition for better (GED) students
The workbook questions kept referring to the character by name like he was a friend of mine. Occasionally, this is fine. But some people (students) could care and don't want to refer to them as real people and not fictitious characters
Reading level too high for our students to do parts independently
Some seemed to feel the level was lower than their capabilities
Not enough computers so each student had one
Not being able to access/use various Internet sites suggested
Not enough time to cover all material adequately
Not being able to use the wealth of material because of time constraints
The time involved; to them it was excessive and intense

When asked what aspects most needed improvement, teachers pointed to specific features in the products.

Table 2.5. Identify aspects most in need of improvement

Comment
Occasionally the introduction was a major stretch—e.g., [having students contemplate the Basquiat painting] for the...Choices [unit], or [the activity was] disliked such as "Amazing Grace." We have a lot of people who don't go to church
Make the videos be less "jumpy" (don't have the camera move around in a dizzying manner)
I thought the workbook was repetitious and I liked it the least
Best if used by students at GED level or already received GED
Watch the reading grade level. The words were more appropriate for GED level
Down grade the vocabulary to a simpler, easier understood language, and perhaps shorten the units—it's too much material to cover for the time allotted
Work out the "glitches" in on-line activities
Make sure all Internet sites can be used
Improve the on-line parts of the program

Do the Three Media Work Together?

Teaching LiteracyLink involves the use of at least one more medium than any other existing adult literacy course. The pilot teachers were asked: *To what extent does each of the three media contribute to students attaining the course goals?* All three media

averaged about the same rating—*pretty much*. Another question asked: *To what extent does each of the three media contribute to keeping students engaged in the course?* The video and workbook averaged *pretty much*, while the online averaged *very much*. See Table 2.6 below. It appears all three media are essential parts of the package, but the online plays a particularly strong role in getting the attention of students.

Table 2.6 Contribution of the Three Media

Media	Not at All	A Little Bit	Pretty Much	Very Much
Contribution to students attaining the course goals				
Videos	–	2	4	2
Workbook	–	2	3	3
Online	–	1	4	3
Contribution to keeping students engaged in the course				
Videos	1	1	4	2
Workbook	1	2	3	2
Online	–	–	1	7

Teacher Assessments of the Individual Products

Videos

In general, teachers said they and their students enjoyed the videos. One teacher commented that her students related strongly to real life individuals in the videos. Her students sang along with the Amazing Grace singer, spoke directly to characters and people in the videos, and commented that real life people in the videos reminded them of friends and relatives.

The videos were interesting to the students in that they could identify with the characters in the video. It involved real life situations that followed through from Unit 1 through Unit 5 (Good!). I felt the videos served as excellent introductions to the workbook and on-line activities. I did not notice any weaknesses. The summaries and graphics emphasized the points and served as reinforcement of the concepts presented—this was excellent.

The videos were excellent and a very good way to introduce our students to each topic (e.g., resumes). One of the outstanding components I felt was continuing to follow certain characters' progress toward getting a job. Students identified with various people and liked the continuity.

The lower functioning students thought the videos were more interesting than the higher functioning. They thought the videos were boring. Several students commented that the videos presented good points. I feel students who learn primarily visually gain a lot from the videos as they are colorful, interesting, musical as well as educational. Yes, I feel they do serve a purpose that is not covered by the workbook or online information. I found them a great component to help introduce the unit. I did not notice an apparent weakness when used with the workbook or Litlink on the Internet.

Other teachers suggested that students tended to get bored toward the end of the series and that younger audiences (high school push outs) were less able to relate to some of the characters and scenes. One teacher of these younger students noted,

The videos were a “weak link” in terms of our students; they did not engage them and there was little I could do to promote attentiveness.

One aspect of the video was irritating to many—the jump between stories and especially the fast pan that was frequently used to separate segments. The current production strategy uses multiple story lines, moving back and forth among the stories as the video progresses. For a variety of reasons, the particular audience for WES struggles to decode even a continuous story line. Forcing them to follow several different stories is intellectually challenging in a way that it may not be to viewers with more experience and skill with this style. Related to this is the convention frequently used to make the transition between stories. The camera makes a rapid pan up, down, or sideways to blur the edges between stories. Many learners and teachers find this “jarring.”

The students were interested in learning the outcome of the job seekers' efforts throughout the series. The videos, workbooks and online activities complement each other. The main weakness I saw was in the design of the videos—how they “jumped around” at times.

Workbooks

Responses to the content of the workbooks were favorable. When polled midway through the course teachers generally agreed that their students seemed to understand the types of assignments they were asked to complete. Eight teachers said their students could complete a workbook assignment in a reasonable amount of time.

I find the workbook time to be kind of grounding for the students. Well, I think it is a relatively calm and methodical time for them, sort of resembling more of what they are comfortable with, in that it is predictable and steady (as compared to the intensity of the online activities). Even though they balk & complain of boredom, they are quite capable of sustained activity in this manner, and it seems to me that it so resembles a “regular” activity that they can be secure and almost “rest” in it.

Aspects of the workbook that teachers liked best include: (1) making up dialogues and role-play assignments, (2) short answer questions, (3) real-life examples and “life-like application forms.” Aspects they did not like include: (1) layout, (2) redundant content, (3) uninteresting content, (4) vocabulary that is too difficult, (5) “busywork”—assignments that “appear to be assignments made for the sake of assignments,” (6) too many examples, (7) unclear instructions, (8) insufficient room to write answers, and (9) “discuss” questions.

My students dislike it when they sense they are doing busywork. Some of the assignments appear to be assignments made for the sake of assignments

It's probably a lot better than most things we have used in our classes, recognizing that this is sort of a draft version, clearly the appearance could be nicer, which we would expect in the future. But overall, this is an above average product.

The vocabulary sections, the human examples and their problems, and life-like application forms are liked. There are too many pages of examples to do.

Online

For teachers, the online component was at once the most popular aspect of the program and its biggest challenge. Students were excited by the notion that they would be able to be online, and teachers responded to some of that excitement. On the other hand, the technology presented two types of problems. Pilot sites had difficulty getting the proper equipment and Internet connections, even though they had received funds to assist with this aspect of their participation. The site visits, conducted four weeks into the course, revealed many sites still struggling with issues such as having enough computers and, for those that did, properly installing QuickTime, configuring the browser, and maintaining a reliable connection to the Internet.

A second type of problem is one of student literacy in online information processing. Adding an online component is much more than adding additional content. One teacher cataloged the challenges faced by her students.

Some navigation problems are: 1) have difficulty understanding that there is more information than what they see on the initial part of the page. When they start to scroll, they often lose their place. 2) If they are reading and link to another page, they are unaware that they should return to the original page because there is more to do on the initial page. 3) They can get confused between the learning lessons and the portfolio. 4) Some had a difficult time with identifying 'not yet started', 'working on it' and 'completed'. 5) In Unit 2 on the Internet activity, some pages come to an end with no direction for the student to continue on.

Site visits revealed that even these “early adopters” were often ill-equipped to solve the technical and navigation problems faced by their students. Time and patience can cure a lot of problems; teachers agreed that student comfort and ease with computers and online activities increased over the course of the pilot test.

Students seem to become much more comfortable with the computers and the internet as they practice it. One of the side benefits of classes is how students help each other. It makes everybody feel good!

My kids are getting more comfortable with the system - in fact, several have said that increasing their computer skills has been the best part.

The on-line activities were easily done by students who are comfortable with the computer; I even had several students who were accessing LitLink from their home computers. However, if a student was not comfortable with technology I felt I needed to be close at hand. I witnessed much frustration from my two users who were not computer literate.

One instructor noted that for her students, ability and comfort were related to reading level, with those students who are “true GED” level appearing more comfortable and confident than those who are pre-GED and/or ESL.

One can assemble a catalog of online difficulties faced by learners. First are basic computer/motor skill problems: (1) hand-eye coordination, (2) facility using the mouse, (3) hunt-and-peck typing method, (4) scrolling, and, (5) remembering user names and passwords. One teacher noted a problem with the identification/user information because it is case sensitive. In addition students frequently forgot exactly how they entered the information.

A second category includes initial navigation difficulties: (1) remembering where to go first (e.g., home space, lesson plans, portfolio), (2) understanding that information exists beyond the first page of the screen, (3) losing place when scrolling, and, (4) not knowing which button to click at the top of the page.

A third category includes difficulties that persist for a longer time. These include: (1) paging back to a previously visited page, (2) moving between Web sites and going back pages between Web sites, (3) awareness that linking to another page does not necessarily mean they have completed all the activities on the original page, and, (4) not knowing what to do when link connections aren't successful. Many teachers said students struggled to know where they were in *LitLearner* since all pages have the same header.

In general, teachers felt confident they had the skill to help students with computer work. Most said they required help when it came to problems with Internet connections or with other computer “glitches.” Site visits revealed that many teachers were not knowledgeable about Web site tool bars or browser options. Thus, when problems arose in navigating the Web, several teachers and students exited the Web rather than exploring Help or other functions provided by Navigator.

Students Rate the Course

Overall Student Response

On the end-of-program survey students were asked to advise a good friend about taking the course they had just completed. To the question, *Would you recommend that I [a friend] take this course?*, 93% said yes. They were then asked about each of the course components. Regarding the videos, 17 (of 42) thought the videos were interesting to watch; nine said they were not. High-school aged students wanted to see people more their own age. Two-thirds thought watching the videos was essential to doing well in the course. Similar to the videos, 17 thought the workbooks were interesting, not difficult to figure out, and taught important things. “The workbook is helpful, lots of suggestions, ideas, and outlines for help.” The most frequent complaint concerned repetitiveness. “At times it [the workbook] could get very repetitive.” “It’s like book work—the same old book work.”

The online was the most popular aspect of the course: “one of the best things about this program are the computer activities.” When asked what they would know after finishing the course, students placed computer skills as high on the list as knowing how to complete a resume, fill out applications, write a cover letter, and apply for and find a job.

Students were asked to use a scale to assess how much they had learned and how useful it was. The data are shown below.

Table 2.7 Students' Rating of the Value of Course Content

Overall, how useful are the things you learned in this course?	N/%
Most of what I learned in the course will not be useful to me	1 / 2%
Some of what I learned will be useful	15 / 36%
Most of what I learned will be very useful to me	26 / 62%
Total	42 / 100%

Table 2.8 Students' Perceived Learning of Computer Skills and Course Content

Question	Nothing	Not Very Much	Some	A Great Deal	Total
How much did you learn about using a computer?	2 5%	5 12%	12 28%	23 55%	42 100%
How much did you learn about using the Internet and other Web sites besides LitLearner?	–	8 19%	16 38%	18 43%	42 100%
How much did you learn about ways to search for and apply for a job?	1 2%	5 12%	13 31%	23 55%	42 100%

The Challenges

Each week during the course students completed a reflection sheet in which they could report whether they had any difficulty reading the text or online materials and figuring out what the assignment was. The responses are summarized in Table 2.9 below.

For the workbook almost everyone understood what the assignments were (96%), and three quarters said they had no trouble reading the text. But this also means that for every unit, a little over 20% of the students admitted having difficulty reading the printed text.

More students had difficulty figuring out what they were supposed to do for the online (12%) than for print. Reading difficulty was higher too for the NCAL-designed Website (21%) and for the Web sites that students visited as part of their *LitLearner* assignment (28%). Thus, the students confirmed the concern of the teachers; the reading level of the print and online may be a bit more difficult than targeted.

LiteracyLink Pilot Test — Fall, 1998

Table 2.9 Course Perceptions Based on Weekly Feedback from Students

		Unit #								
		1	2	3	4	5	13	14	15	Avg
Time Required										
Total Hrs per Unit		5.3	4.0	4.5	3.2	3.5	5.2	5.0	5.2	4.49 hrs
Total Hrs on Computer		2.7	3.3	3.2	2.9	1.9	2.8	2.1	2.8	2.71 hrs
Difficulty with Workbook										
Reading Difficulty	Just Right	74	85	79	77	77	66	72	90	77.5 %
	Difficult	26	15	21	23	23	34	28	10	22.5 %
Task Clarity	Clear	95	96	96	97	97	95	85	96	94.63 %
	Unclear	5	4	4	3	3	5	15	5	5.5 %
Difficulty with Online										
Online Video Difficulty	Just Right	65	92	88	71	79	61	77	81	76.75 %
	Difficult	35	8	12	29	21	39	23	19	23.25 %
Internet Activities Difficulty	Just Right	67	68	76	72	77	66	59	77	70.25 %
	Difficult	33	32	24	28	23	34	41	23	29.75 %
Task Clarity	Clear	83	86	88	84	97	78	91	96	87.88 %
	Unclear	17	14	12	16	3	22	9	4	12.13 %
Perceived Learning										
Learning Interesting Things	A Lot	67	54	54	43	55	57	73	70	59.13 %
	A Little	33	39	39	47	42	41	24	26	36.38 %
	No	0	7	7	10	3	3	3	4	4.63 %
Learning Helpful Things	A Lot	64	50	71	53	70	65	79	65	64.63 %
	A Little	36	43	25	40	27	35	21	30	32.13 %
	No	0	7	4	7	3	0	0	4	3.13 %
<i>Total Respondents for Each Unit's Feedback</i>										
		39	28	28	32	33	19	18	12	

NOTE: Except for rows labeled "Total Hours," cell entries are %. Students studying units 1–5 provided one feedback sheet per unit; students studying units 13–15 provided two per unit.

Summary

Overall, *Finding a Job* was well received. Teachers judged it to be an outstanding learning experience for students, and 93% of the students said they would recommend the course to others. There were some challenges "orchestrating" three different media.

In this pilot test students spent about four hours per week engaging the materials. Typically, this corresponded to covering a unit of material. Teachers felt good about what students accomplished in this amount of time. But, if the goal was to fully cover the material in the unit they would estimated that close to ten hours should be allotted.

Each of the components had minor weaknesses. Students and teachers alike responded positively to the compelling stories in the video. But some found that there were too many intertwined stories to keep the story lines straight. The workbook was seen as repetitive by many, but then again the typical learner in the target audience for these materials has had a history of struggling with text. The online component was very attractive to this audience. They deeply desire to master the computer. But the medium is new to them and they frequently had difficulty with fundamental literacy issues such as realizing that a web page may be longer than what appears in the browser at any one time. In addition, the computers and Internet connection in the learning centers was not always reliable.

One issue that needs careful attention is the reading level of the print and online. There is evidence that many parts of the print exceed the 6th - 8th grade level that was targeted by the developers. Developers may want to consider submitting their materials to readability tests. Conversely, the definition of the target audience requirements could be revised to better reflect the realities of the reading level.

There is also evidence that there is redundancy between the online and print materials. The implication is not clear. If parts of the audience will not be using the online, than the redundancy may not matter. But for those who use both the print and online, learners may be better served if there is better articulation of instruction and exercises between the two media.

Chapter 3

Testing the *Workplace Writing Units*

The *Workplace Writing* mini-course covers three topics: a business-writing process; supplying information: directions, forms, and charts; and, writing memos and letters. Its intended audience includes adults who: (1) already have jobs, but who want help learning to write in a work setting; (2) plan to seek employment that requires regular writing; and/or, (3) are interested in developing writing skills in general. In addition, the course is intended to facilitate learners who will be studying for their GED. An outline of the course appears in Appendix B.

The Test Situation

The course was taught in classrooms in seven of the innovation sites (see Table 1.1). Typical class size was five learners with a range of one to eight students per class. Six of the classes were taught by a single teacher; one was team taught. All teachers had experience teaching learners in a variety of adult literacy and workforce training settings including ABE, GED prep, workplace readiness, and ESL courses. Two had five or fewer years of experience teaching adult education, while six have between 10 and 25 years of teaching experience in adult education environments. Most had worked extensively with ABE learners.

Table 3.1 Workplace Writing Test Classes

Demographic		N
No. of Classrooms		7
No. of Learners		24
Ave. Class Size		5
Ave. Contact Hrs. / Week		4.9
Age	16-18	8
	19-45	13
Gender	Males	7
	Females	15
Reading Level	8 th	12
	>8 th	11

Additional detail in the Appendix, Table A1

The majority of *Workplace Writing* teachers indicated they have *strong* basic computer skills as well as *moderate* to *very strong* skills navigating the Internet and helping students work online. Site observations of some instructors working with students online suggest that in some instances, instructors' self-assessments may be somewhat elevated. Six instructors have previously taught a course in which they assisted novice computer users.

Workplace Writing is designed for learners reading between the 5th and 8th grade levels. Twenty-four students completed the *Workplace Writing* mini-course. This study population was racially diverse and had significantly more female (71%) than male participants. Teacher estimates of student reading levels indicate 43% of participants have reading levels in the target range. More than half were estimated to be reading above the 8th grade level. Only one student reads below the 5th grade level. Three students report having completed between the 6th and 8th grades in school. Fifteen have completed between the 9th and 12th grades in school, and the remaining students report having completed some college or technical school as well. Almost three-fourths of students are currently unemployed. Seventeen percent work part-time and 9% work full-time. A little over one-third of participants are between the ages of 16 and 18. (See Appendix A, Table A1 for additional student demographic information.) Most of the *Workplace Writing* students report having previously worked on computers and many indicated they felt comfortable working on computers.

Teachers were given 5–6 weeks to cover the material. They were instructed to take the time required to cover each unit; at the same time, they were also aware the pilot test would not extend beyond six weeks. Initially, it was anticipated that *Workplace Writing* instructors would be able to complete one unit per week. However, teachers discovered that, ideally, units should be covered over a 1.5–2 week period. All of the teachers reported they were able to complete the three units in the 5–6 week timeframe.

Teachers Gauge the Audience for *Workplace Writing*

Teachers were asked to assess what types of students should enroll in *Workplace Writing*. More than half recommended offering the course to a broad range of students including ESL, GED Prep, and GED graduates. In addition, teachers also suggest that anyone who is job-oriented including computer operator trainees, warehouse workers, and even college students might benefit from this course. More than one teacher commented on the possibility of *Workplace Writing* being offered as a supplement to office skills and/or computer courses. (e.g., “With the emphasis on going to work, this would be a perfect addition to any work ready program.”) Integrating *Workplace Writing* into a business curriculum might establish a strong position for the course within centers' existing programs. While one of the stated goals for *Workplace Writing* is to contribute to GED preparation, teachers note that since it is currently not part of the standard GED curriculum, students might see it as competing with their GED studies and therefore, be unwilling to enroll in the course.

Teachers disagreed as to the reading level requirements needed for students to successfully engage in *Workplace Writing* materials. See the table below.

Table 3.2 Teachers' Estimates of Reading Level Minimums for *Workplace Writing* Materials

Reading Level	Workbook	Online
Less than 5 th Grade	–	–
5 th to 6 th Grade	2	–
7 th to 8 th Grade	3	3
9 th Grade or Higher	2	4

What is the minimum reading level necessary for students to do well with the [workbook/online]?

These assigned reading level requirements suggest that materials may be written at too high a reading level. One question to further pursue involves the extent to which students would be able to engage in materials independently and the degree to which teachers scaffolded student work with course materials. As one teacher concluded:

Although I firmly believe in the LitLink concept and admire the extensive development executed by its founders, I no longer believe that the WES Writing Units should include a population as represented in our ABE Section if the units are left in their current package. Those units are more suited to a more able population.

The discrepancies in perceived grade level reading requirements indicate a need for a more in-depth examination of all written text produced for this course.

Time Needed to Cover the Material

According to teachers, an average of 7 hours of in-class instructional time per week is necessary to successfully cover the *Workplace Writing* materials. Time estimates ranged from 5 to 10 hours per week. On average, teachers suggested each unit requires between 1.5 and 2 weeks to complete in its entirety. Teachers recommend two-hour instructional blocks, 3–4 times per week, with an additional 2.5 hours of online work and 1.5 hours of workbook activities completed outside class. Responses to the amount of time students should spend working outside class ranged from 0 to 4 hours per activity (online and workbook) per week. Teachers estimated that their students spent the most time working on the workbooks (average: 3.75 hrs. per week), followed by online activities (average: 2.6 hrs. per week), and then watching videos (average: 1 hr. per week).

Teachers Rate the Course

Overall Ratings

In general, teachers responded favorably to the *Workplace Writing* course materials. One teacher noted: “WES is a good series and a great series for those students who like to work on computers.” Teachers were divided in the degree to which they felt the series was unique with three selecting the rating assessment choice: *WES is a quality series but*

not significantly better than other resources that are available for the same purpose. Two teachers agreed with the statement: *WES is a quality series and an outstanding learning experience for students* with two other teachers offering their own rating (2.5) between *not significantly better* and an *outstanding learning experience*. Only one respondent felt the program was flawed enough not to recommend it at all. This teacher qualified her response by noting she would upgrade her assessment were materials revised. She did not, however, provide specific information on areas for revision. Others concurred with the need for revisions to course materials—particularly the workbook.

What Teachers Like

Teachers listed a variety of things they liked about *Workplace Writing*. Online activities were mentioned most frequently and included journaling, Internet activities, and online questions relating to the videos. Two teachers wrote they believe course materials are relevant to students' needs and that the multimedia approach addresses different learning styles. Exploring in-depth the potential ways in which multimedia approaches such as WES have the potential to tap into various learning styles would likely suggest areas for improvement and further development of course materials.

Four elements of the course teachers most valued in terms of student learning include:

1. Emphasis on the importance of writing clear communication;
2. Steps for completing forms and documents;
3. Information regarding the process of writing and revising of drafts; and,
4. How to use a computer and access information on the Web.

Other elements that contributed to course value in teachers' opinions include students learning "how to write effectively," the names of business forms, the importance of attending to detail, and awareness of audience and the appropriate communication methods to use in professional settings. In addition, one teacher liked the interrelation between workbook and computer activities.

What Teachers Dislike

Teachers identified several areas for improvement in *Workplace Writing*. Teachers noted the workbook contains numerous typographical errors, has grammatical problems, needs additional explanations, illustrations or photos, and examples, and should offer a larger variety of business forms. Areas for improvement in the online component include lowering the reading level, modifying the appearance of screens so students have a visual indicator that they've advanced to a new screen, and improved video clip download time. While some instructors liked the videos, others did not, calling them "boring and too long" and "not enough value for the time spent on them." Other least-liked program elements include Web sites geared toward college-level readers (e.g., Purdue University's Writing Lab), general technology problems, repetitiveness of materials, and the layout and lack of writing space in the workbook.

Despite teachers' perception that elements of the *Workplace Writing* course require improvement, four said their centers would likely offer the course in its entirety in the fall of 1999. In addition, four teachers said their centers plan to incorporate other WES series materials into existing center curricula. Interestingly, while teachers believe WES materials will be integrated into their centers' curricula, none rated WES materials as superior to other competing instructional materials or series with which they work.

Do the Three Media Work Together?

Teachers were asked: *To what extent does each of the three media contribute to students attaining the course goals?* Responses regarding the videos ranged from *not at all* to *very much* with the majority of ratings falling in between. This response pattern is consistent with the often-conflicting opinions teachers expressed regarding the value of the videos in general. Ratings for the workbook and online components were somewhat more consistent, with the majority falling in the more positive categories of *pretty much* and *very much* (see Table 3.3 below).

Table 3.3. Contribution of the Three Media

Media	1. Not at All	2. A Little Bit	3. Pretty Much	4. Very Much
Contribution to students attaining the course goals				
Videos	–	4	2	1
Workbook	–	1	3	3
Online	–	1	4	2
Contribution to keeping students engaged in the course				
Videos	1	4	1	2
Workbook	–	3	2	2
Online	–	–	1	6

Another question asked the extent to which the three media contributed to student engagement. Responses to the video segment were again mixed, covering the range of possible answers. While teachers believe the workbook contributes in an important way to students attaining course goals, more than half rated the contribution of workbooks to student engagement as only *a little bit*. Thus, teachers felt that while students might not be particularly engaged in the workbook activities, the workbook nonetheless played an important role in student learning. Teachers gave the highest ratings to the online component, which received a *very much* rating from six of seven instructors and a *pretty much* rating from one teacher regarding its contribution to student engagement. The high ratings for the online component are consistent with the novelty of this media in adult learning centers. Few students or teachers have encountered adult literacy materials that include an online component. Most participants and teachers recognize the importance of developing computer skills and advantages to being able to access the vast amount of information available on the Internet. See Table 3.3 for a breakdown of teacher ratings:

Teacher Assessments of the Individual Products

Videos

Teachers expressed a range of opinions regarding the value of *Workplace Writing* videos. With one noted exception, responses to the videos were lukewarm. The one teacher who felt strongly about the videos commented: “The videos are great! My students want to know ‘the rest of the story’.” Other teachers, however, felt the videos were not of much interest to students. More than half said the videos contributed only *a little bit* to students’ engagement with the course and attainment of course goals. Several commented that the sound quality was uneven (e.g., “It was a little hard to understand what some of the conversation was”) and/or that the videos were visually disconcerting and “cluttered” (e.g., “These videos were a bit too frenetic—there were some very odd jump cuts”). For a sample of responses to questions regarding student interest in the videos, and video content and design, see teacher comments listed below.

At first I thought the videos were going to be worthless because we couldn’t understand the words with the mumbling and background noise. But eventually we liked the visual break from routine class work, and the narrator spoke clearly. We would like for each scene to be a bit more coherent.

The videos were O.K. It was good for our students to see and learn about what they are learning can be used in a job that they might have some day.

The students were not interested in the videos and they especially disliked the two story lines (I liked the story lines). The only purpose the videos served was showing real people and how they use writing on the job, but the videos were too long.

Not very much so that it could hold students’ interest.

The videos were interesting but hard to follow at times. They did a nice job of showing Workplace Writing in a variety of contexts, most of which were not the typical white-collar, executive situations or large office situations usually associated with “workplace writing.” The visual element is so important for many students. It stimulates and hopefully focuses their attention.

I have only viewed the videos for the writing component, but I was not impressed with the content and usefulness.

The 5.5 reading is not realistic.... An actress in a video uses the word "permeates" in her dialog. Our ABE people were not permeated by such vocabulary. This reference is not the only teachable moment produced within the films.

The overall concept and information was great—important information. However, it went over information too much. It became repetitive.

Workbook

Teachers routinely incorporated workbook activities into weekly assignments, using a combination of their own judgment and recommendations from the Teacher’s Guide and LitLearner online to determine assignments. The majority of teachers said the workbook

is written at a level students can comprehend for the most part. The teacher with the largest group of students from the target population, however, rated the reading requirements for the workbook as 9th grade or above. This again indicates the need for close examination of workbook content and language. Most teachers also believe students understand and can complete assignments in a reasonable amount of time. Most found the workbook “practical” and “relevant and useful” as “something tangible to reinforce the lesson.” However, they also found the workbook redundant, aesthetically unappealing, somewhat boring, and according to one teacher: “just busy work.” One instructor wrote: “the workbooks are adequate but not very attractive in layout (useful but perhaps not more than a good office communications text).”

When asked what students liked and disliked about the workbooks, teachers offered the following suggestions. Student likes included: (1) filling in the blanks, (2) math, (3) making up dialogues, and, (4) being able to take workbooks home so they can spend more time in class online. Student dislikes included: (1) having to list forms they’ve completed, (2) unappealing and/or uninteresting layout, and, (3) insufficient room to write answers in the workbook.

Online

In general, teachers reported favorably on the online component pointing in particular to the high level of student engagement around online activities. Teachers also indicated that online activities contributed to students attaining course goals, though not to the same degree this component contributed to student engagement. Teachers felt comfortable facilitating online activities and handling minor technical problems. All said student comfort levels increased with usage. As one teacher noted: “Computer comfort has definitely improved. In fact I would say it is one of the greatest benefits to the students in class.” Teachers and students enjoyed having the opportunity to work on computers and to learn about navigating LitLearner and other Web sites. Another instructor, however, pointed to the difficulty faced by many ABE learners with regard to handling multiple tasks simultaneously:

The internet based activities call for a high level of computer skills as well as ability to multi-task...in one’s mind while multi-tasking with the computer. A common symptom of ABE learners is that they have severe limitations in the area of simultaneous multiple function. Substantial introduction to the keyboard, computer, and internet lessons and activities need to precede these three writing units.

This teacher’s perspective was supported by observations at various sites during which several students struggled when attempting to use the computer in general at the same time they were attempting to read and then complete writing activities. While some students moved easily between navigating sites and completing online activities, others required considerable scaffolding in basic computer operations as well as in how to engage in writing activities.

One consistently identified problem involved students and instructors not knowing which screens they were working on at any given time. Students often couldn’t tell whether they had advanced to a new screen because of the visual similarity of screens. “Students

found the layout of the Internet activities difficult to follow. They could not readily tell when they were at a new page, new activity, or new assignment” noted one instructor. To solve this problem, some teachers chose to print out portions of the online component so their students would have a visual reference to determine where they were in the program. This also helped some novice users understand that screens are something like a book, containing one page after another. Providing novice users with hard copies of at least the first online unit would likely provide important scaffolding for their developing understanding of computers and Web sites.

Another online problem involved students and teachers having difficulty reentering the LitLink Web site after linking to recommended Internet sites. One teacher circumnavigated the problem by printing out the Internet site activities and giving copies to her students rather than having them go to those sites.

Teachers offered several suggestions regarding improving the online component. Some wanted to provide students with email accounts. Others suggested incorporating spell-checking and more sophisticated editing and word processing capabilities. In particular, instructors complained that students spent considerable amounts of time formatting business texts in word processing programs. Once they saved to their portfolios, all formatting was lost. This proved frustrating to students, the majority of whom do not have strong typing skills or knowledge of word processor capabilities.

Students Rate the Course

Overall Student Response

Student feedback regarding *Workplace Writing* was generally favorable. When asked whether they would recommend the course to a friend, 91% of students said yes. Students indicated they learned about writing memos and letters and about how to fill out forms. Only one student selected *not very much* in response to the question *How much did you improve your workplace writing skills?* The rest said they improved their writing skills as a result of the course. Roughly two-thirds of students reported on their weekly feedback sheets that they were learning things that are of interest to them. Another 30% said they learned *a little* that was of interest to them. Approximately 70% of students agreed they were learning things that helped them either secure a job or become a better worker. These responses indicate that in general, two-thirds of students found *Workplace Writing* both interesting and of value to their career plans. A sample of student responses to the question *When I finish this course, what will I know, or know how to do, that I might not already know?* is listed below:

You will know how to work a computer and to fill out forms for the workplace, and how to work with people.

To communicate clearly in the proper form and tone to achieve your goal.

How to operate a computer and to use the keys. Also to do drafts and get on the Internet.

Have a better knowledge in communication skills, business letters, invoice, income tax, charts, forms, reports, and how to write clearly.

The most frequent commentary from students involved computers and the online component. When asked what they would know after finishing the course, students most often mentioned skills involved in using a computer and the Internet. Online and computer-based activities also tended to be students' favorite course component.

While the primary focus of this pilot test was on usability and readability—not on learning, students were asked on the end-of-course survey to assess their learning as well as the usefulness of the course. It is not surprising, given their high level of interest in computers, students assigned the highest rating for computer learning. The ratings for learning about types of writing and improving writing skills were less favorable. Less than half of respondents said they learned a *great* deal with the highest selecting the category *some* to describe the amount of their learning. See the table below for a summary of student responses.

Table 3.4 Students' Rating of the Value of Things Learned in the Course

Overall, how useful are the things you learned in this course?	N/%
Most of what I learned in the course will not be useful to me	–
Some of what I learned will be useful	8 / 33%
Most of what I learned will be very useful to me	16 / 67%
Total	24 / 100%

Students were asked what they learned from doing activities in each media and about the amount of time coursework required. On average, students estimated coursework required 6.25 hours per week (range: 2–10 hrs.) to complete and that they spent approximately 3.5 hours online each week (range: 2–8 hrs.). Student estimates for course time requirements were similar to those of instructors.

Table 3.5 Students' Perceived Learning of Computer Skills and Course Content

Question	Nothing	Not Very Much	Some	A Great Deal	Total
How much did you learn about using a computer?	–	3 13%	6 25%	15 63%	24 100%
How much did you learn about using the Internet and other Web sites besides LitLearner?	–	1 4%	9 38%	14 58%	24 100%
How much did you learn about the types of writing commonly used in the workplace?	–	–	12 55%	10 45%	22 100%
How much did you improve your <i>Workplace Writing</i> skills?	–	1 4%	13 57%	9 39%	23 100%

Student Assessments of the Individual Products

Videos

Participant response to the *Workplace Writing* videos varied greatly from those students who enjoyed the videos to those who said they could not find anything they liked about the videos. Seven students were interviewed regarding the *Workplace Writing* videos. Three said they enjoyed the videos. However, four were adamant in their dislike of the videos. When asked what they liked, one pair replied in unison: “Nothing.” Another student from this group commented: “The actors have got to go!” and, “They should get a different narrator.... She looks like Madonna.” These students recommend the videos present one story line from start to finish. While overall response was mixed, participants concurred on four areas:

The videos are informative and present real-life people using writing in their workplaces. Videos are visually difficult to watch. There is too much shifting between scenes. Students noted their eyes got tired, particularly during the filler moments when the camera seemed to jump around in-between scenes.

The sound quality was uneven, making some dialogue difficult to understand.

Videos have too many story lines. Students became both confused and frustrated with the constant, rapid switching between scenes. Students agreed they wanted to see a particular story line from beginning to end, or at least not have the topics change so rapidly and so frequently.

Print

In focus group interviews, students said they didn't find much that was particularly appealing about the workbooks. Students were somewhat neutral with some noting they neither liked nor disliked the workbook. One student who fit the target population felt the workbook was too challenging and said the questions were often hard for her. She also noted that vocabulary and content were sometimes too difficult for her to comprehend without help from her instructor. This student concluded that the workbook would probably be good for someone who was a better reader.

Approximately 25% of students in *Workplace Writing* found the reading in the workbook to be difficult. Student assessments of reading difficulty were highest for Unit 13 (34% found it difficult) and lowest for Unit 15 where only 10% of students said they found it difficult to read (see Table 2.9). These figures again point to the need for careful examination of the content and language used in the *Workplace Writing* workbook.

While a quarter of student respondents found the workbook difficult to read, on average, the majority of students (92%) said they understood the kinds of exercises they were being asked to complete in the workbook. See Table 2.9 for a breakdown of responses by unit.

Online

Online activities tended to be the most popular of the course activities. Students also placed computer and online navigation skills as at the top of their learning list. Only a few students found online activities “boring.” More than one quarter of students found the online video tasks difficult. Even more found Internet activities difficult (33%). However, most students said they were clear about the tasks they were being asked to complete. In each of the online activities, students report better understandings over time. For a composite of student responses, see Table 2.9.

Students' assessments of their computer skills and knowledge were not consistent with information gathered during site observations. A considerable number of the students observed while working on computers continued to struggle with basic operational skills even after having worked on computers for four or more weeks. New computer users in particular, experienced difficulties primarily in five main areas:

1. Using a mouse
2. Basic keyboarding skills
3. Understanding the different ways to scroll
4. Knowing where to place the cursor
5. Grasping the concept of screens

These students relied heavily on either their instructors or on other more proficient users to be reminded to point and click, double click, etc. In focus groups, students spoke less of the content of online activities and more about developing computer skills that could be applied elsewhere.

Site visit observations of students working on computers suggest that students' perceptions of their competence levels are inflated. For example, two women in one focus group claimed to be competent computer users saying they felt confident in their computer skills to the extent that they could show others how to operate a computer and conduct an online search. However, observations of these women revealed they required constant assistance with even the simplest of activities (i.e., not knowing how to use the mouse to point and click, not knowing how to move between screens, etc.) Thus, while increased confidence and comfort is important to students' overall development, their ability to assess their computer skills may not be particularly accurate.

Summary

Overall, *Workplace Writing* was well received. Teachers judged it to be an outstanding learning experience for students, and 91% of the students said they would recommend the course to others.

Teachers recommended that the material be spread over a 1.5 - 2 week period. The total time to teach each unit is about seven hours of in-class time and an additional 2.5 hours outside of class for online work and 1.5 hours for workbook activities.

The videos for *Workplace Writing* were valued much lower than those for *Finding a Job*. Details are discussed elsewhere, but it could be that the video design model has different value for this content area. The model for the whole series calls for using the video component to show examples from the workplace—to set the context for the instruction provided in the print and online. For *Finding a Job* the context is an essential part of the instruction. For example, students who do not know how to apply for and win a job need to see and hear employers talking about what they expect to see in a job application and what they look for in an interview. Students who need to improve their writing skills for workplace writing may not have as much of a need to hear employers talk about the importance of different types of writing in their business.

The workbook was viewed as functional—“practical”, “relevant and useful” and “something tangible to reinforce the lesson.” But many viewed it as unimaginative as well. The reading level of the material was judged to be higher than the 6th to 8th grade currently set as the target.

The online component was seen as a very exciting component for this audience; it is motivational and also contributes to students attaining course goals. But there are a few problems with the online component. For learners with limited knowledge of the computer, it is challenging to both master the computer skills (use the keyboard, move to a new “page” on the web site) and learn the content of workplace writing. Second, web literacy is quite low for this target population. Students were sometimes lost on the site, not appreciating where they should go next. Some of this problem can be solved by adjusting the Web site design. But some require learners to become more literate in processing online information. A more fundamental problem is the limitation of web-based writing tools. At present, the online writing activities utilize text entry of a most rudimentary sort: unformatted text entered into a text box. When the assignment is first completed, it has a formatted appearance that looks like the document they would create in the workplace. But when they go to retrieve the document from the portfolio, the formatting is lost, and so is their ability to learn by reviewing their assignment.

Observations at the test sites indicate that teachers have some difficulty "orchestrating" three different media for the course. Most of the problem stems from a lack of experience with the computer and online medium. But teachers and students value the online component enough that they are willing to persist through their difficulties.

As with *Finding a Job*, careful attention should be given to assessing the reading level of the print and online components. There is evidence that many parts of the print exceed the 6th - 8th grade level that was targeted by the developers. Developers may want to consider submitting their materials to readability tests. Conversely, the definition of the target audience requirements could be revised to better reflect the realities of the existing materials.

Chapter 4

Workplace Essential Skills in Perspective

This chapter examines the WES series at two levels. The first section distills observations and recommendations regarding the design of the WES products from data reported in Chapters Two and Three. Additional data are introduced as well to answer the question of whether the design of any of the products should be adjusted to enhance their acceptance by and utility for the target audience. The second section addresses issues of promoting and disseminating the series and training new adopters to be effective users of the products.

Adjusting the Products to Increase Usefulness

Three Media: Redundancy vs. Reinforcement

Learning is a challenge for everyone—especially the target audience for LiteracyLink. One of the attractions of multimedia is being able to assign tasks to different media in a way that is complementary, calling on each of the media to do what it does best or counting on learners to draw lessons from the medium that works best for them. It is tricky, though, to keep a balance between repeating the lessons in each medium and spreading them across the media in a reinforcing fashion.

While teachers said they would use all three media in teaching WES courses in the future, many repeatedly recommended that the materials be pared down. In particular, teachers felt the materials were repetitive past the point of simply reinforcing learning. Below is a sample of teacher responses to whether the activities worked well together.

Yes, they “work together” VERY WELL. However, they work together so well that there is considerable duplication of material—for some students this has led to lack of enthusiasm for the project.

In all units, there is an abundance of materials. I would condense—make it more concise, avoid repetition, use simpler vocabulary.

Yes, the pieces work together, but it is VERY repetitive—particularly Unit 1 in the workbook. EVERY one of my students commented on the fact that they had to write three places to research jobs repeatedly.

Too much of same thing. I’m for reinforcement, but too many activities for one theme.

Yes, there was a lot of repetition. Maybe too much.

You have some redundancies here.

One teacher further suggested there might be a link between the high dropout rates at her center and the large amount of materials.

There was too much material to cover in a week. Maybe this is a contributing factor as to why our students dropped out.

These comments may explain one anomaly. Teachers using *Finding a Job* spent about 4.5 hours per week teaching the course, and they felt that one could teach one unit per week. But, they also felt it should take 10 hours per week to thoroughly cover the material in each unit.

The LiteracyLink designers should review each unit to determine the specific ways in which each of the three media contributes to student learning and skill development. Distinctions should be made regarding what indeed serves as reinforcement versus what is actually redundant. While it may be difficult to find the appropriate balance, given the often-limited attention spans and time availability of these students, finding this balance is crucial to maintaining student engagement with course materials.

Readability of the Products

At various points throughout the pilot test teachers raised the issue of the reading level required for students to do well in the workbook and online. While the 15 teachers were not experts in diagnosing reading issues, the perception of many—not all—was that the workbook and online materials required reading skills above the targeted 5th–8th grade level. Reading “level” is a complicated concept. It involves not only appropriate levels of vocabulary comprehension but also skills in decoding text in the specialized formats of a workbook or a Web page. The words on a page or screen may appear straightforward and simple to individuals accustomed to interacting with various media. However, when these words are set in particular frames, the context and new medium (e.g., online Web pages) may add to students’ challenges with discerning meaning. In addition, the introduction of multiple new concepts combined with the highly specific terminology associated with business contexts and job searches further complicates students’ reading of course texts. Thus, while this pilot test was not sufficient to determine whether the average reading level of the text is too high, teacher and student reports of challenges with reading and comprehending texts combined with the specific nature of course content and use of multimedia make reading level an issue that cannot be ignored.

Students from both courses were asked to fill out weekly “Learner Reflection Sheets,” which included a question regarding whether they had had difficulty reading the text in each of three areas: the workbook, the online video, and Internet activities. There were two response choices: *Just right for me* and *Some parts were difficult to understand*. Table 4.1 below shows the average number of students experiencing difficulty in any of these three media across the entire test period. Student reading levels were estimated by the WES teachers.

For the workbook and online almost one quarter of the students had difficulty reading the text *on average* across the 4–6 weeks. The pattern is not tied directly to the reading level of the students. The percentage who had difficulty with the Internet activities was higher, but this is not surprising. An Internet activity is where a student is linked to a Web site not developed by LiteracyLink. Reading level is not an issue for the developers of these sites.

Table 4.1 Percent Experiencing Difficulty Reading the Text by Reading Level of the Student

	Student Reading Level				Total
	< 5 th Grade	5 th -6 th Grade	7 th -8 th Grade	> 8 th Grade	
Workbook	40%	25%	36%	15%	23%
Online Video section	32%	26%	27%	20%	24%
Internet Activities	38%	27%	35%	30%	31%

Cells show the percent of each reading level group that reported “some parts were difficult to understand.” Example: an average of 23% of students doing workbook exercises found some parts difficult to understand. Forty percent of those reading at the “<5th grade” level had difficulties.

The partners need to consider an extra step in their design process whereby the materials are critiqued by reading experts whose sole task is to ensure that language and tasks are consistently written at an appropriate level.

Video

Responses to the videos were mixed. Teachers and students from *Finding a Job* enjoyed many elements of the videos including real-life scenarios, characters and story lines, and information presented by actual employers. Many students wanted to know how stories turned out. Teachers’ primary recommendation was to shorten the videos to maintain student interest over the length of the course. Teachers and students from *Workplace Writing*, on the other hand, had mixed and even negative reactions to the videos. Respondents agreed that the videos switched topics too frequently, which made attending to and remembering story lines a challenge. *Workplace Writing* participants also pointed to the poor sound quality, noting it was often difficult to understand dialogue. It is possible that differences in appeal of the videos between the two courses were a result of the content of the videos. For example, students in *Finding a Job* were able to see behavior modeled on the videos that could be directly applied in their search for a job. *Workplace Writing* students, however, heard more about how forms are used in various work settings in which they might or might not find themselves.

Participants from both courses agreed that the “jump cuts” in the videos were distracting. Participants also concurred they would like fewer scenes and/or story lines per video.

The frequent switching back and forth among story lines confused many viewers. By definition, the target audience for WES often has more difficulty keeping track of multiple topics than their more academically successful counterparts (i.e., traditional students who have completed high school). Developing fewer ideas in each video may contribute to adult learners feeling a greater sense of accomplishment in viewing and comprehending these videos.

Workbook

Workbooks are familiar tools in adult education. Thus, it was not surprising that teachers felt the workbook activities were easy to teach. Teachers reported favorably on many elements of the workbooks, complimenting the types of forms and information that are included. Many agreed the workbook activities were among the sections of the course that worked best for students.

In general, both teachers and students thought the assignments were clear and that students could complete various activities in a reasonable amount of time. But they also felt that many activities were not attractive to their students. Some teachers noted they had to be creative in presenting workbook materials to make them sufficiently interesting to maintain student interest. Several also noted that the layout and design of the workbooks were not compelling. Finally, as discussed above, the designers need to explore in-depth issues of readability and repetitiveness looking across all the media.

The concept of the mini-course I taught was fine; the videos basically work and are interesting; the workbooks are adequate but not very attractive in layout (useful but perhaps not more than a good office communications text); and the Internet component is attractive to students, but limited and repetitious. Plus we have not been able to use the video clips on the Internet.

Observations of students engaging with the workbooks indicate that more students had difficulty reading and comprehending workbook activities than are represented by students' self reports or by teacher estimates. Classroom interactions with text and student reading behaviors reveal that students were using multiple sensory input in working with texts. For example, the majority of teachers observed spent considerable time pre-teaching workbook vocabulary and concepts. In addition, in each of six classroom observed, teachers either read workbook chapters aloud to groups of students or had more fluent student readers read sections of the workbook aloud to classmates. Responses to questions were also read out loud and discussed. At other times, teachers sat with students helping them track print and sound out words. Tracking print involves using a finger or writing implement to point to individual words as a means of maintaining place in text and as a means of helping novice readers parse words into syllables to be sounded out. WES Teachers recognized (whether consciously or unconsciously) that their students needed additional sensory input to comprehend the workbook materials. Thus, it is highly probable that many students required the extra oral and kinesthetic sensory input to successfully engage in reading and comprehending workbook materials.

Online

The online component was considered the most appealing element of the WES courses being tested. The majority of students said they were excited to be learning to use computers and the Internet. Teachers and students alike felt this medium contributed the most to student engagement and attainment of course goals. In working online, students were able to learn valued computer skills in addition to how to find a job or fill in a business form.

In Chapter Two there is a catalog of online difficulties faced by learners. These should be reviewed to see if the design of the Web site could help learners acquire fundamental skills. For example, many learners had difficulty recognizing that a Web page extended beyond the visible screen. Hints to the learner about this issue could help them learn the differences between a book page and a Web page. The next section raises the possibility of improving Web site design in ways that could better support the content focus of the WES units.

Writing and Media Design: A Question of Pedagogy

The workbook and online components of *Workplace Writing* are intended to complement one another. In examining the content of the workbook and online media in relation to goals for student learning presented in the Teacher's Guide, pedagogical distinctions in writing instruction become apparent.

One of the three units of the workbook is titled "A Process for Writing." This chapter recommends learners complete a specific set of activities when writing and lays out "The Writing Process," a seven-step approach to generating business-related documents. Written business communication is conceptualized for these learners in terms of a series of specific, pre-established document formats. This approach defines the purpose of business writing as primarily to "create a record of what was requested, said, and done" (p. 12). From this perspective, writing is presented as a tool to be used solely for purposes of documenting factual information. Indeed, in much of business communication, the documenting of facts and events is essential. The workbook suggests that if students learn the seven steps for creating business texts, they will have acquired the general skills needed to communicate in writing in a business context. The goal of the workbook is to teach students how to complete these types of documents.

In contrast, the WES Teacher's Guide presents a vision of writing that is broader than the view presented in the *Workplace Writing* workbook. This perspective appears to have been modeled upon the process writing approach, a model that is distinct from "the writing process" presented in the workbook. The concept and practice of process writing instruction has achieved considerable status in the educational community. It is among the most frequently advocated methods for teaching writing and is highly touted for enabling students to develop an in-depth understanding of the process of writing as well as a sense of ownership of their work. Process writing pedagogy encourages students to discover their own purposes for writing and to take responsibility for identifying relevant audiences and then conveying their ideas in an appropriate format. More important, it

argues that writing serves a crucial developmental function in addition to simple recording functions such as those presented in the workbook.

According to the Teacher's Guide, the WES series "emphasizes performance-based skills" as the envisioned goal of instruction where students learn to apply their knowledge in relevant contexts. In addition to being able to actively demonstrate their learning, the Teacher's Guide encourages teachers to help students learn how to think reflectively about their work. The designers of the guide consider this process of engaging in reflective thinking one of the primary means through which students "can gain an understanding of their developing and evolving selves both as learners and whole individuals" (Further Guidance: The Portfolio System: FAQ's—Teacher's Guide). Conceptually, this interpretation fits within the process writing model. To help learners "become transformed through their reflective activities," the online designers have incorporated a portfolio component into the curriculum.

Portfolios play an integral part in the process writing approach. When well designed, portfolio-based writing instruction serves more than the functional purpose of storing a writer's works in a single, readily accessible location. When more broadly conceptualized, portfolios can serve as an intellectual space where teachers help students: (1) explore multiple purposes and/or functions writing can serve, (2) practice creating a variety of texts, (3) reflect upon the content and structure of texts, and (4) assess individual development over time through revisiting, reconsidering, and revising their texts.

In keeping with this perspective, the Teacher's Guide suggests current techniques for portfolio development and usage. These techniques include:

1. *Classroom discussions* based on students sharing printed portfolio entries;
2. *Peer Reviews* in which students discuss their writing with one another in small groups;
3. *Individual instructor-learner counseling conferences*; and,
4. *Individual reflections* in which students are asked to reflect upon their learning.

These goals for portfolio usage offer a glimpse into an understanding of writing as more than a tool for reporting factual information and the process of writing as more than following a simple list of steps. In particular, it presents a view of writing as contributing to an ongoing reflective process where composing is used as a means of self-development. While business writing certainly serves a less developmental function than many other types of writing, the concepts behind the process writing approach could be integrated into the online component to help students begin to develop the more advanced writing and conceptual skills they will need to advance within business environments.

The online component of *Workplace Writing* currently reflects something of a cross between the *Workplace Writing* workbook and Teacher's Guide. On the one hand, it

summarizes and reiterates information presented in the workbook and offers primarily definitional information. Similarly, in Unit 13, the portfolio portion of the online component asks students to answer questions about factual information provided in the workbook. On the other hand, the online component offers links to outside Web sites, some of which present writing in a fuller, more complex manner. The online component also incorporates both journal and portfolio features.

The idea of incorporating portfolio-based writing instruction into the course is a strong one. Asking reflective questions designed to help students think in more depth about their writing would help strengthen their understanding of workbook ideas and of the writing process in general. More than one teacher requested the portfolio provide reflective questions for students to address. One teacher suggested that ideas presented in the Teacher Guide be introduced into the portfolios to provide students with additional direction and focus for their writing.

The online portfolio component currently serves as the primary text producing and storage place for students' texts. It has the potential to serve a more vital role in students' development as writers. While students may have access to word processors in their centers, since the program advocates its portability, the portfolio may in many instances be the primary place students generate their texts. This feature could provide important opportunities for students to develop meaningful texts. However, in its current form, the online portfolio feature limits rather than expands students' ability to develop as writers in several ways:

1. The *physical writing space* (a box) is limited, allowing students to see only small portions of their work at a time. Students can see only a few sentences or parts of sentences at a time. This narrows the kinds of writing students might want to do; for novice writers, it also sets up a conceptualization or understanding of their writing as needing to fit in a very limited space. Students are also unable to see blocks of a particular text or to compare different versions of a text on the screen. In addition, the *wrap* feature continues beyond the size of the box, which means students can only see parts of a sentence at a time. This limited and visually disjunct writing space hinders the possibilities for student writers' understanding of the multiple roles and functions writing can serve in business and other contexts.
2. *Lack of peer review and teacher feedback mechanisms combined with limited print capabilities.* The Teacher's Guide suggests there are "four techniques for using and evaluating Portfolio entries": class discussions, peer review, individual instructor-learner counseling conferences, and individual reflections. Portfolio writing instruction is premised on the idea of students and teachers exploring and revisiting multiple drafts of student work together in an ongoing manner to identify progress and areas for further development in various genres. Teachers have expressed concern the program does not incorporate successful feedback loops or mechanisms through which instructors

and students can dialogue both orally and in writing about student writing. Feedback and revision activities need to be more directly structured and integrated into the program. Further, the ability to print drafts plays an important role in comparing versions of texts, sharing writing with teachers and peers, and editing and reorganizing texts. If instructors don't have access online to student portfolios and students are not printing their portfolio entries, then the possibilities for meaningful dialogues and consideration of text development over time are severely limited. Peer review is then reduced to students reading over one another's shoulders, an approach that may prove challenging. Finally, instructors may be primarily limited to commenting on student writing through brief explorations of online elements and more focus on workbook entries.

3. *Lost Formatting.* Once an entry is saved to the portfolio, all formatting established in a word processing program is lost. Given that business communications rely heavily on formats for specific types of information, it is crucial that texts be maintained in appropriate formats. These students are struggling with basic writing skills, knowledge of how to create forms and what those forms should look like, as well as how to use word processing features to create texts. The challenge of learning to cut and paste from the portfolio into a word processing document only to have to reformat yet again might serve as a barrier to student learning and use of templates.
4. *No spell checker or grammar checker.* Writers in the business world rely heavily on word processing features such as spell and grammar checkers as well as sophisticated editing capabilities when writing. These tools should be made available to adult learners as well to facilitate the physical production of texts.

In the professional world, writers have ready access to the kinds of online and word processing help that facilitates and simplifies written production to the point where writers can usually focus on the content of the document rather than being largely concerned with formatting, spelling, and basic editorial issues. Adult learners should be afforded as many of the same opportunities as possible. In conclusion, the pedagogical distinctions presented in the workbook, Teacher's Guide, and online activities, indicate designers of the various media need to work together to decide how to blend the distinct philosophies in a manner that best suits and supports developing writers.

Teacher's Guide

In the opening section of the Teacher's Guide, the designers note the guide is intended "to provide a complete picture of WES instruction." Currently, more attention is devoted in the front matter of the guide to *Finding a Job* than to *Workplace Writing*. In addition, the guide does not present sufficient information regarding the overall objectives of the series or the specific ways in which each of the media contributes to the attainment of unit goals and objectives. More than one teacher indicated a need for better

understanding of how units function together: “I’m having trouble getting a ‘global’ picture of the units.” This suggests the need for expanding the section on the pedagogical framework for the WES series.

Another consideration for the Teacher’s Guide is an expansion of the section: “How to Use This Guide.” This section could include more detailed explanations of the pedagogical framework for the series, the intended structure and anticipated uses for the materials, and how the media should work together. If the Teacher’s Guide is to serve as the primary training tool for new WES teachers, then these areas must be more fully considered.

In addition, designers should determine whether the guide should contain course-specific lesson plans for each of the 28 units. Finally, teachers requested abbreviated versions or “crib sheets” of course content and objectives as well as specific lessons to which they could refer during class. Providing these kinds of additional supports for teachers will make materials more “user friendly.” This will likely lead to greater teacher buy-in as well as stronger student engagement. Increased satisfaction with existing WES products will lead teachers to recommend future products to their centers.

Dissemination and Training

Once the LiteracyLink partners have made appropriate adjustments to the various WES products, the task of designing promotion and training activities begins. The pilot test provides a number of lessons on these topics for consideration by the partners. The lessons come from three sources: (1) efforts to recruit students for the pilot test, (2) plans of the pilot sites to use the series in the fall of 1998, and (3) reactions of the pilot test teachers to the training they received.

Early Lessons on Adoption: Recruiting the Pilot Test Sites

Three lessons can be learned from the effort to recruit learners for the pilot test. Each points to the challenge of gaining acceptance for this new product. Between October, 1997 and March, 1998, each of the hubs organized a one-day introductory event for the five innovation sites in their area. Teachers and administrators from the innovation sites attended the event. The LiteracyLink design team flew in and gave a presentation describing the overall project. The evaluator attended each event and described what would be required of the innovation sites to test out the materials the following fall. There was general enthusiasm, even excitement, for the LiteracyLink endeavor. But the realities of delivering this new curriculum were not easy for the participants to grasp.

In the training, the designers estimated that delivering the curriculum requires about ten hours per week, including direct instruction and supporting students as they engage in the workbook and online components. The video and workbook represent materials with which most teachers were already comfortable, but the online materials were new and require technology that is more sophisticated than what is typically available in most adult literacy centers.

Formal invitations to participate in the fall pilot test were sent in June, 1998. The initial indication of interest was quite strong. But none of the volunteer teachers had ever taught a class that used three different media. Only a few possessed strong computer skills. Roughly half of teachers had taught a class in which students had to use a computer. In this sense, they are fairly typical of adult educators. Initially, most teachers offered to recruit and teach 10–15 students. However, as they examined the realities of what was required, they adjusted these numbers by more than half—down to 4–7 students.

By the time the pilot test began, teachers had recruited 114 learners: 76 to study *Finding a Job* and 38 to study *Workplace Writing*. By the end of the test, the pilot sample had shrunk by more than one third. Losses resulted mostly from the types of challenges faced by many adult learners: lack of reliable transportation, medical problems, and child care. Two women had a baby, another found a job, and two others were suspended from school. In one site, a teacher was temporarily laid off because program funding was cut. In another, a teacher quit the experiment because the materials were too difficult for his students and the experience was too frustrating. In a third, two teachers slated to teach *Finding a Job* chose not to participate in the project. It was later learned that these teachers had experienced problems with technology and coordinating schedules with other courses they were teaching. None of the partners learned of these losses until it was too late to fix problems. The experience of having three teachers drop without communicating their decisions to any of the partners suggests the need to spend more time communicating directly with teachers on a regular basis to anticipate and hopefully prevent further drop out rates. The data on sample sizes and attrition appears in Table A2 in Appendix A.

A third challenge is not inherent in the LiteracyLink curriculum, but rather relates to recruiting adults to test small parts of a new curriculum. Given the realities of center reimbursement rules and the pragmatic focus of ABE students, it is difficult for centers to find students willing to take an “extra” course (even at no cost to them) and free up a teacher at center expense to teach it. WES must be carefully positioned to meet the needs that centers have, but which may not be obvious to them as they respond to shifting mandates for adult literacy instruction.

Later Lessons: Plans by the Pilot Sites to Adopt WES Fall, 1999

At the end of the pilot test teachers were asked to meet with the center administrator and share their reactions to the mini-course they had just taught. For the meeting they were provided a flier that lists the 24 units that comprise the entire WES series and told:

Share the flier with a center administrator and discuss whether your center is likely to offer the series (or parts of it) in Fall, 1999. Assume that the cost of materials is not an issue.

Fifteen of the teacher respondents completed this section of the survey. The results are shown in Table 4.2 below

Finding a Job

All of the teachers of *Finding a Job* indicated that their center *most likely* would incorporate some of the units or materials into existing courses. None indicated that the center would offer the series in its entirety. Teachers and administrators were then asked to indicate which units in particular their center might use.

Table 4.2 Which units would you most likely incorporate into existing courses?

Units	Likely
I Employment Strategies: Finding a Job (1-5)	10
I Employment Strategies: New to the Job (6-8)	8
II Communicating at Work: Interpersonal Skills (9-12)	12
II Communicating at Work: Writing Skills (13-15)	9
III Reading at Work (16-19)	8
IV Math at Work (20-24)	8

The highest number of responses were for Communicating at Work: Interpersonal Skills and Employment Strategies: Finding a Job, followed by Communicating at Work: Writing Skills.

The most significant recommendation I would make to the Community College would be to have [Employment Strategies—*Finding a Job*] as a mini-course to "stand alone." It might also be incorporated into a part of our Women's Works program. At the outset, the commitment to the class would need to be established for it to be of value to the student. A computer lab where [students] could work independently on their own activities would be another recommendation as part of this course. I do not think having two students share a computer is a good idea—too many individual activities and ideas to be expressed.

But the selection of only one mini-course by this Iowa literacy center may change as welfare reform progresses.

The two sections—*Finding a Job* and *New to the Job*—are areas where we don't have a lot of current materials, so we will use these sections as needed. The other areas, I believe, we will [eventually] use [because] Iowa's Promise Jobs will be heading into a major emphasis first on getting a job and then keeping it. Promise Jobs will be saying that if students can't get and keep a job after several attempts, then they will work on academics. This will be a major change in philosophy, so the WES emphasis on "Jobs" will be helpful in the coming years.

Teachers were asked what aspects of the series make it attractive to their center. Here are some of their replies.

The topics are practical and important and relevant to our clientele. The variety of media resources is also nice.

The [*Finding a Job*] videos are bright "attention getters", up to date, timely in relation to Promise Jobs future mandates, and a good introduction to what is on the LitLink and other Internet URLs. The workbook offers a lot of practice as does the portfolio part of the [LitLearner].

We have a large number of students studying for their GEDs. Some people already have jobs but could get much better jobs with help that this series provides. Also, single, divorced, displaced homemakers have a specific program which might be one area to use this information. The community college also has a minority center and we have quite a few immigrants moving in who might also use the job search components.

Are all three media—video, print, and online—equally valued? With one exception, all of the teachers indicated that, whatever units they chose to use, they would use all three media. Only one teacher thought she would skip the workbook and use just the video and online.

When asked if there are other materials or series that compete with WES, none of the *Finding a Job* respondents identified other series as being better than WES. One—*Job Club through Promise Jobs*—was judged to be about the same as WES. Another series (*You're Hired* from Contemporary) was judged to be not as good. *Workplace Writing* instructors, however, listed multiple series they saw as being in competition with WES. Competing materials include: *Life Skills for the Workplace* by Steck Vaughn, *Contemporary Books: Essential Skills for the Workplace*, and Globe Fearon's *Skills for Success*, among others. These materials were all judged to be either *about the same as WES* or *a little better than WES*. One respondent commented that she though existing Basic Skills and job workshop materials were perhaps more comprehensive than WES materials. Another teacher noted, however, that no other series incorporates the three media.

Workplace Writing

Overall, *Workplace Writing* teachers said they would recommend this unit to other adult educators. Most offered an important caveat, however. Centers must have adequate technology including Internet connections, equal ratio of computers to students, sufficient technical support, and computer literate instructors. The technology-heavy requirements of *Workplace Writing* informed the majority of teacher commentary and impacted instructors' recommendations. For example, one teacher noted:

I would give a good recommendation, especially if the center has all the technology.
A center must have the technology in the classroom to do this successfully.

The majority of teachers did not believe their centers offer sufficient technological resources or support, particularly in the area of Internet access. Given that these were “innovation” sites selected in part based on their current access to technology, these findings suggest other sites may find the technology requirements prohibitive. Here is a sampling of other comments on adoption recommendations.

I would make a guarded recommendation at this point... [Our center] has limited Internet access for learners at this point ... and the teachers are already loaded with courses to teach and oversee.... I would love to be able to offer this, but we need more computers online in the classroom to enable the teacher to oversee and help the students with the Internet. This would a very good supplemental class for those students in the computer operator trainee class.

It would be nice to have but unfortunately we could not have ongoing classes. We also do not have enough computers to accommodate our students. I think that you have a good program started but it needs to be revised for individual study.

We can offer the writing course but I doubt it would attract many students due to our students' inability to comprehend the benefits of the course. Time is a limited and precious commodity for our students and they would need to realize the benefits for them. Maybe our students would be more interested in the *Finding a Job* course.

Yes, I would recommend this become a permanent addition. With the emphasis on going to work, this would be a perfect addition to any work ready program. Of course the center would have to have adequate internet connections, computers, and instructors who felt comfortable teaching with the computer.

After consulting their center's administrator, the majority of teachers said their centers would likely adopt and integrate parts of the WES series into existing center courses. Some respondents noted that their center's final decision would be based on a review of the completed materials prior to adoption. These teachers did not identify the exact nature of what their review would entail.

Teacher Training

For the WES pilot test, a team representing the designers of the online and Teacher's Guide and the designers of the video and print materials conducted the training. In brief, teachers came to a central location for one day of training. In the morning the essential components of the project were introduced. In the afternoon teachers were walked through the pedagogical strategies recommended in the Teacher Guide. On the following day the trainers visited each site for one-half day to insure that the computers and Internet connection met the technical requirements and were configured correctly to access the online materials. It was also a time when teachers could get further clarification suitable for their own needs. Teachers were informed they could call a toll-free number at any time to get assistance on any matter, ranging from technical support to assistance with teaching practices.

While the training that was provided was highly regarded by the teachers, the general feeling of the participants was that it was too brief. Too many of the pedagogical ideas require additional instruction. More importantly, teachers needed a chance to try out some of the strategies in their own classroom and then have additional opportunities to ask questions and receive further guidance.

Providing training for a series that is to be distributed nationally is a challenge. Finding the balance between live instruction and printed teacher guides is difficult. But WES is sufficiently ground-breaking in its use of new media that great care must be given to designing training that will ensure that adopters have a successful experience with the series. Part of the challenge is pedagogical—how should the materials be used with students to maximize their learning experience? The other part is technical. What technical skills are needed by centers to ensure that the online portion of the series reaches the students in the way it was intended? A PBS help line—as good as it was—was insufficient to solve all the technical problems for the centers. The problem

was not the lack of expertise on the part of PBS; rather, it rested with the centers. Too often teachers did not realize that the browser being used by their students was not properly adjusted or that QuickTime 3.0 was not correctly installed.

It is intriguing to consider the possibility that another part of the LiteracyLink project—*LitTeacher*—might provide a solution to further training for both teachers and technical support staff in the centers.

Chapter 5

***LitTeacher* Professional Development Courses**

An integral part of the LiteracyLink project includes the development of a series of online professional development courses for adult literacy teachers. Three courses were available for pilot testing in the fall of 1998.

- Creating a Technology Plan: Developing Your Mission and Vision for Technology (Start date: 10/1/98)
- Integrating the Internet into the ABE/GED Curriculum: Using Online Resources with Your Learners (Start date: 10/21/98)
- Planning for Technology: Understanding the Role of Technology (Start date: 11/4/98)

Each course was designed to last 3–5 weeks. The developers estimated that participants would spend a total of 12 hours (six hours online and six hours offline) per course completing the work.

Testers were recruited in August, 1998. An invitation was sent to all Innovation Site teachers who were not involved in the WES pilot test. Additional invitations were tendered to the adult literacy directors of six states, and they in turn invited administrators and educators in their state to try out one or more of the courses.

The Testers

A total of 102 adult literacy teachers and administrators volunteered to test the three *LitTeacher* courses. They represent nine states: Delaware, Iowa, Illinois, Kentucky, Mississippi, New York, Pennsylvania, Texas, and Virginia. Eighty-three percent of participants are female. One-third are between the ages of 25 and 45; two-thirds are over 45 years old.

Of the initial 102 volunteers, 55 both enrolled in courses and returned the pre- and post-course surveys. Demographically, they comprise a diverse group (see Table 5.1 below). Additional data appear in Table A3, Appendix A. Most share a commitment to professional development in general and a high level of interest in the content of the course(s) they selected.

The 13 testers in *Creating a Technology Plan* were mostly administrators and had been in adult education an average of 14 years. They displayed a wide range of computer skills. Most participants were not heavy users of the Internet and Web. To access the Internet,

five used a modem with speeds of 28.8–56.6 kbps—the minimum recommended by NCAL. Five had fast T1 access, and three did not know the speed of their connection.

Table 5.1 Characteristics of the *LitTeacher* Pilot Testers

Demographics		<i>Creating a Technology Plan</i>	<i>Integrating the Internet</i>	<i>Planning for Technology</i>
Total		13 / 100%	29 / 100%	13 / 100%
Role in Adult Ed	Admin	10 / 24	2 / 7	2 / 15
	Teacher	3 / 76	27 / 93	11 / 85
Years in Adult Ed	Mean / range	14.0 7 – 28	5.6 1 – 25	7.3 2 – 20
	Years of Education	Mean	17.8	16.7
Gender	Male	2 / 15	4 / 14	–
	Female	11 / 85	25 / 86	13 / 100
Age	22–45	2 / 15	11 / 38	3 / 23
	>45	11 / 85	18 / 62	10 / 77

Participants in the other two courses were mostly teachers and had been in adult education a shorter period of time—about six years on average. They had lower levels of experience with computers and with the Internet. The distribution of access speeds for testers in the *Planning for Technology* course was similar to *Creating a Technology Plan*: half of those who knew what their speed was used modems (4), and half had T1 access (4). Five respondents did not know their connection speed. Testers in the *Integrating the Internet* course were much more likely to use a modem with a speed of 28.8–56.6 kbps (14), though two used modems slower than this minimum. Five had T1 access, and eight did not know their connection speed.

As with the launch of any new product, minor problems identified in one version can be corrected for the next one. For this reason, the courses are discussed in the order they were launched.

Creating a Technology Plan

The first course ready for testing was *Creating a Technology Plan: Developing Your Mission and Vision for Technology*. It was launched on October 1. This course was scheduled to run for three weeks, but was extended to four weeks to accommodate the schedules of a number of students. The initial chat had to be delayed by a few days as technical problems were worked out for both the provider and the students. As was the case with all the courses, technology problems had to be solved for many of the students—especially establishing and maintaining a reliable Internet connection. The technical requirements for participating in this course were not high by some standards, but they were high for the target audience of adult literacy centers. Compared with the television set that is used in video-based distance education, computer resources currently

available in the workplace and in homes—including both the Internet connection and the computer attached to it—are neither fast nor dependable.

While 33 people started the course, few completed all the work. Using the portfolio assignments as a measure of work completed, 26 completed half or less of the portfolio assignments. Three completed 50–79% of the portfolio assignments, and only 4 completed 80% or better. Thirteen students completed surveys about their experience. Eight had completed less than half the work; five had completed almost all of the work. (See Table 5.22 for attrition and survey return information.)

Rating the Content

Any course can be thought of in terms of two dimensions: content (course readings, instructor lectures, and student input or exchange) and tasks (reading, interpreting, writing and other forms of exchanging ideas with the instructor and other students). In addition there is a set of tools that students must use to perform the tasks. This first section reviews the ratings of the content of the course.

The content of this course received high marks. Testers were provided with a list of every activity in the course and asked to indicate whether each was *helpful for you in terms of learning more about the course topic*. There were 19 activities ranging from reading online to developing a technology plan (see Table 5.2). The number of participants completing assignments fell continually throughout the course. By Unit 4, only one quarter of students were doing the assignments. With the exception of the chat, participants rated all of the activities as helpful. Three found the chats *not helpful* and the number participating in the chats fell consistently across the four weeks until only two students participated in the last chat. Problems with the chat feature are discussed in greater detail later.

Table 5.2 Ratings of Helpfulness of the Units Comprising *Creating a Technology Plan*

Course Outline and Activity List for Creating a Technology Plan	Not Helpful	Helpful	Did not Do
Unit 1: Introduction to Technology Planning			
1.1 Getting Started: Read 2 articles on technology planning; use the Bulletin Board to discuss the advantages and problems of using technology in an adult education organization.	–	13 100%	–
1.2 Success Stories: View 2 success stories, read a list of issues to consider, complete an extra-reading wrap-up.	–	13 100%	–
1.3 Examining Stakeholder Interest: Identify your organization's stakeholders and enter the information into your portfolio; complete an extra-reading wrap-up.	–	10 100%	3
1.4 Examining Your Program: Complete portfolio exercise--a "program snapshot"; complete an extra reading wrap-up.	–	8 100%	5
1.5 Weekly Chat	2	5 71%	5*

Unit 2: Developing a Vision			
2.1 Identifying Internal Resources: Take 4 inventories of your center: technology, partner, organizational support, and organizational strengths and weaknesses; enter the information into your portfolio; complete an extra-reading wrap-up.	–	9 100%	4
2.2 Identifying External Resources: Interview someone at another center who is using technology in adult learning; identify a Web resource on the same topic; enter the results in your portfolio; on the Bulletin Board share a finding with your classmates.	–	3 100%	10
2.3 How We Might Want to Use Technology: Consider 4 ways to use technology and enter them into your portfolio; complete an extra-reading wrap-up.	–	6 100%	7
2.4 Setting Your Preliminary Technology Vision & Goals: Read "Technology Planning for Adult Literacy"; write your "Technology Vision and Goals" for your portfolio; complete an extra-reading wrap-up.	–	7 100%	6
2.5 Weekly Chat	–	4 100%	9
Unit 3: Technology Solutions			
3.1 Integrating Technology: Read "Integrating Technology into Adult Learning"; complete an extra-reading wrap-up.	–	7 100%	6
3.2 Technology Solutions: Read 6 online articles and visit 6 resource Web sites--PeerLit and sites for several computer companies; discuss your favorite sites on the Bulletin Board.	–	7 100%	5
3.3 Revise Your Technology Vision and Goals: Edit your portfolio on "Technology Vision and Goals"; complete an extra reading wrap-up.	–	7 100%	9
3.4 Weekly Chat	1	2 67%	10
Unit 4: Budgeting, Training, Implementation and Evaluation			
4.1 Creating a Budget: Read about budgets; complete portfolio exercise: "Technology Budget" for your organization; complete an extra reading wrap-up.	–	5 100%	8
4.2 Training and Staff Development: Read about staff development; complete an extra reading wrap-up.	–	4 100%	9
4.3 Writing and Revising the Plan: Read advice about "Writing the Plan"; edit the outline of your own plan; discuss questions you might have about your plan on the Bulletin Board.	–	4 100%	9
4.4 Implementation and Next Steps: Read "Developing a Technology Implementation Timeline"; discuss concerns you might have about your plan on the Bulletin Board.	–	4 100%	9
4.5 Weekly Chat	1	2 67%	10

*Row numbers may not total 13 due to missing data

Another way to look at course content is to cluster together the many activities into collections of similar activities: readings, class “discussions,” drafting a technology plan, etc. Testers were asked to rate these components: *How important was each of these components to your personal professional growth?* The results are shown in Table 5.3

below. The most valued activity involved collecting information about the technology needs of the individual's own organization. A sample of teacher comments on this topic are listed below:

The course content and activities were of the highest quality! This course is definitely relevant to my job as our state is beginning to develop our state technology plan. It will be useful in the future because I am on the technology planning committee and I intend to present workshops on this topic in the future.

The course content and activities were very relevant to my situation and job. This course could not have come at a better time.

The course was well planned and our resulting plan has already proved useful in planning for funding our technology plans.

I am very glad I was able to take the course. It did actually play a large role in the development of a technology plan for my adult education department—and as I am also involved in technology as it relates to other departments and school districts, I fully expect to use the knowledge gained repeatedly.

Collecting information about their organization's technology was *very important* for 8 of the 11 who actually did this activity. Next highest were the readings and the activity of developing a draft of the organization's technology plan. Least important were the chat and bulletin board activities, but these ratings were provided only by the 5–7 students who engaged in chats; the quality of a chat should vary with the number of people who participate in the activity.

Table 5.3 Importance of Course Components to Personal Professional Growth

Course Component	Not at All Important	A Little Important	Pretty Important	Very Important	Does Not Apply
Collecting information about your center's technology needs	1	2	-	8	2
Developing a draft of the center's technology plan in your portfolio	2	-	2	5	4
Course readings	1	1	2	6	2
Discussions with classmates in the weekly "Chat" and "Bulletin Board"	2	3	1	1	6
Ideas provided by instructor in the weekly "Chat" or "Bulletin Board"	1	4	2	1	5
Instructor comments/feedback on your portfolio	1	2	3	-	6

One student who completed almost all of the assignments spoke for many with this statement.

I was VERY impressed with the quality of the readings. There was a great deal of good thinking on the subject that I didn't know existed.... The activities were very

worthwhile. I am currently using the work I did with the class to get ready for my organization's new strategic planning effort.

Rating the Online Tools

Performing the many course tasks requires tools. For a standard face-to-face course, tools are primitive, but work very reliably. A person goes to the bookstore or library to secure the texts, sits down and reads print materials, attends class and listens to lectures and discussions, performs written tasks using a pen and paper—or some other technology that puts print onto paper—and then hands in the results to those assigned to read it.

A Web-based course has most of the same tasks, but differs in the tools that are used to accomplish these same tasks. NCAL has created a collection of tools for the course. There is a tool for the student to log in to the Web site, create a profile, read text online, view video clips, enter and revise assignments in a portfolio, and communicate with others in the class using a synchronous chat feature or asynchronous bulletin board. An electronic notebook is also available for students to use for personal writing related to the course—e.g., recording comments regarding an off-site Web resource or notes on the in-progress technology plan. Contents of a student's notebook are available only to that student.

The pilot testers were asked to judge how well each tool worked for them. Their ratings are shown below.

Table 5.4 Rating the *Creating a Technology Plan* Tools

With this function I had...	No Problems	Minor Problems	Major Problems	Never Used
Login	9	3	1	-
Portfolio—making the initial entry	7	4	1	1
Portfolio—reviewing & revising an entry	6	4	1	2
Setting or changing your chat time	6	3	2	1
Using the Chat feature	4	2	3	3
Using the Bulletin Board feature	4	3	3	3
Entering/revising your profile	8	3	-	1
Viewing a video clip	2	2	3	3
Using the online Notebook	0	3	-	8
"Researching" an assigned topic on the Web	6	3	-	3

By and large the testers report the tools worked well—they either had no problems or only minor problems using them. The exceptions were the chat and bulletin board features and the video clips. Both of the technologies that underlie these features were new to the project and very new to users. The chat and bulletin board by Web Board has been used successfully by many projects, and users tend to like its functionality after they have had sufficient training and experience with this form of communication. A problem frequently arose during the interface between the main *LitTeacher* Web site and Web

Board. From inside the *LitTeacher* Web site, it is easy to select Web Board, but the reverse is not true. After logging off of Web Board, a student is not taken back to the point on the Web site from which she or he departed.

Also less favored was the portfolio feature. While teachers liked having a place in which to store relevant course information that was easily accessible, they also felt the “space” and features provided in the portfolio were limiting and awkward. Regarding the portfolio design and utility, one teacher commented:

I found the online portfolio very uncomfortable to use. The window would not expand and the words scrolled out of the window rather than wrapping. (If there was a solution to the problem, I failed to find it.)

The video clips are of necessity quite large files. To get them from the PBS server to a student's computer requires a high capacity connection over great distances. There are many places along the line where the information can be slowed down. To view the video clips requires that the student's computer have QuickTime 3.0 installed. Installation was not a simple task for many students.

Some of my problems stemmed from technical difficulties on my end ranging from modem fritzes to ISP dropped line to regional broken pipes. The first chat session I spent most of the time getting knocked off line and trying to get back on. This creature of computer-assisted distance education is a very complex structure and still not as reliable as it should be.

Students were asked about the acceptability of the *delay between requesting a resource on the Web and having it available on your computer screen*. The delay for text retrieval was acceptable to almost all students. Submitting and retrieving portfolio entries was a little less acceptable. The delays associated with chat and retrieving a video clip were the most irritating to students. See Table 5.5 for the actual data.

Table 5.5 Acceptability of the Delay
Experienced Exchanging Information Electronically

Action	Acceptable	Minor Irritation	Major Frustration
Retrieving a typical page of text containing an assignment or a reading	9	3	–
Retrieving and viewing a video clip	3	4	4
Exchanging ideas in a chat	6	2	4
Submitting or retrieving portfolio entries	7	5	–

The analysis was re-run to see if the speed of the tester's connection was a factor in level of irritation. Surprisingly, the ratings were no better on average for those using a T1 line compared with those using a modem. There were differences for viewing a video clip and exchanging ideas in a chat that are associated with various measures of a person's computer skill. In general, the higher the computer skill, the less likely the person was to report feeling irritated about delays. While the technology that delivers the tools to

students will continue to improve, it is the skills of the users that may be the most important factor.

Course Demands and Appropriate Timing

The demands of this course were too much for many testers. The course was divided into four units. Of the 13 survey respondents enrolled in the course, eight completed all or almost all of the activities of the first unit; six completed the second and third units; and only four completed the final unit. When asked what stood in the way of completing more of the work, almost all indicated they didn't have enough time in their schedule.

Prospective testers were told the course would require them to spend about six hours online and six hours offline (reading and gathering data) spread over a 3–5 week period. When they first logged on to the course, students were given time estimates for each of the four units. In the end-of-course survey, they were asked if these estimates matched their experience. In terms of course length, students felt a longer period was needed. One student echoed the opinion expressed by many teachers—that the course content was of high quality and required sufficient time to complete successfully:

Be sure that they [participants] are ready to commit the time it will take to focus and learn from this outstanding course.

Three quarters of the respondents (10 of 13) felt that four weeks was too short a time for the amount of work required. Only two felt it was just the right length. In terms of hours required to complete the assignments, the numbers appear to be only slightly low.

Table 5.6 Estimates of the Time Required to Complete the Course Activities

Unit	Instructor's Estimate (including 1 hour chat)	Student Estimates (including 1 hour chat)
Unit 1: Intro. to Technology Planning	3.0	3.7
Unit 2: Developing a Vision	4.0	4.8
Unit 3: Technology Solutions	3.0	3.8
Unit 4: Budgeting, Training, Implementation, and Evaluation	3.0	3.2
Total	13.0	15.5

While student estimates were not appreciably higher than instructor estimates, many students had done very few of the assignments. This meant they had little on which to base their estimates—especially for the later units, which required extensive work developing an organizational technology plan. These comments from a student who did almost all of the requirements may be closer to the mark.

The time line and the time estimates given were WAY OFF. I started off late and seemed to fall further and further behind. I think this is indicated in the precipitous fall-off of chat participants. The first lesson, which I think was supposed to take me three or four hours, took at least twelve and I'm NOT a slow worker. The data collection alone was quite a task. We came down to the last chat with only two participants—both of us administrators of small community-based organizations... I can't imagine the time and logistics this class would have demanded from an administrator of a large community college program with many sites.

Another teacher's comments reflect similar concerns:

Being brand new to the ideas provided in writing a technology plan, and because I fully intended to produce an actual plan, the tasks each took (and are still taking) much longer than the proposed time. I was quite sorry the class ended before my project was anywhere near complete.

These respondents' comments relate in part to the fact that this course requires a participant to collect detailed information about the technology needs of the person's organization in order to develop a technology plan. The time required to do this will vary by the size of the organization and whether any of this kind of information had been collected before. Time requirements are also based on a participant's level of experience collecting this type of information.

To this end, it is interesting to see students' preference for a time of year to take this course. The majority of students—almost all center administrators—would prefer to take *Creating a Technology Plan* in the summer (8 of 13); another three chose winter. Two indicated that any time of year would work. No one selected fall or spring.

Timing for the Chat

One of the attractions of an online course is the flexibility it offers students to do the work when their schedules permit. But course designers often require a synchronous chat on a regular (weekly) basis to simulate a live classroom session and give students an opportunity to exchange ideas with classmates and the instructor. The challenge of a chat is selecting a time of day and day of the week that works well for all students. It is doubly difficult for a course that aspires to enroll students from across the country because there are four time zones in the U.S.

Creating a Technology Plan scheduled most of its chats for 10:00 a.m. and 1:00 p.m. on Wednesdays. Based on participant responses from the pilot test, there are more optimal times. In terms of time of day, evening is the most popular followed by early morning. Late morning is the worst time. In terms of days of the week, Tuesdays and Thursdays are best, followed by Wednesdays and Fridays. The weekends are least preferred. See Table 5.7.

Table 5.7 Time Periods Most Preferred for Class Chat*

Day	1	2	3	4	5	Total
	Early Morning	Late Morning	Early Afternoon	Late Afternoon	Evening	
a. Monday	2	–	1	–	2	5
b. Tuesday	2	–	3	1	2	8
c. Wednesday	1	–	–	1	4	6
d. Thursday	2	–	2	2	2	8
e. Friday	3	–	1	2	–	6
f. Saturday	–	–	–	1	1	2
g. Sunday	–	–	1	–	2	3
Total	10	–	8	7	13	38

*Respondents were asked to mark up to 3 time periods that would typically work best

Two students' responses reflect a common problem experienced by many of the participants:

The chats were difficult to attend as both optional times were scheduled on the same morning—both conflicting with my scheduled classes. An optional evening chat would have been nice.

There was absolutely no way that I could stop in the middle of a workday morning to participate in a chatline. Phone calls did not stop. I got the most work done on the weekends.

Online chats must be more than one day per week. I could NEVER make a chat with the provided schedule.

Overall Ratings

Participants were asked what recommendation they would make to others in the adult education field regarding this course. Of the 13, three thought it was an outstanding experience and eight rated it as *a useful experience*; two were very negative about the course. One instructor for whom technology was a problem wrote:

I am very interested in Web courses and also very interested in developing a valid technology plan. I was terribly frustrated with the lack of working technology. I would like to take this course again when it's working correctly.

Another who had a more successful experience wrote:

The course curriculum and activities were outstanding, comprehensive and interesting. All possible aspects of technology planning were included. The Web-site references were extremely valuable, current, and applicable.

Most valued course activities included: (1) networking, (2) online references to articles and Web sites, and (3) learning to use new technology. One teacher noted she particularly enjoyed the opportunity to make connections with others in the field of adult education:

I have developed professional interactions with several other students that I have enjoyed and found helpful in other areas if not directly in relation to the technology plan—so the effort to encourage networking was well done and appreciated.

Other teachers expressed the desire to know more about their co-learners—a challenge in distance education:

The component that needs improvement is learning and sharing with others in the class. I often wondered how far along the other participants were, but other than the chats and bulletin board (which were under utilized) you had no idea where the others were in the course.

The lack of face-to-face interactions with the course instructor and other students was considered one of the problems of the course. Least valued course activities included: (1) the chats, (2) the portfolio structure, (3) time limitations, and (4) lack of participation by certain students.

Participants were also asked *who in the adult literacy arena should take this course?* As expected, respondents saw it as a course largely for administrators, resource center personnel, and state directors (10 of 13). However, five also thought it was appropriate for teachers.

Conclusion

Creating a Technology Plan has a lot of potential. The content is highly valued, but several aspects need adjusting. These include the course schedule and the design of the portfolio mechanism. The Chat feature is problematic. The issues of chat and its role in online learning are discussed later. Clearly, students have a strong desire to have regular communication with each other and with the instructor. But some adjustment in the medium—chat—and the message—what is said to whom when—is called for.

Integrating the Internet

The second course tested was *Integrating the Internet into the ABE/GED Curriculum: Using Online Resources with Your Learners*. This course was launched on October 21. It was scheduled to run for three weeks, but was extended to five weeks to accommodate the schedules of a number of students. As was the case with all the courses, technology problems had to be solved for some of the students.

Thirty-nine people started the course, but few completed all the work. Using the portfolio assignments as a measure of work completed, 22 completed half or less of the portfolio assignments while six completed 50–79% of the portfolio assignments (see Table 5.22). Only 11 (approximately one-quarter) completed 80% or more of the assignments. Twenty-nine of the 39 students completed surveys about their experience. Each of the completion groups is well represented. Twelve of the 22 who completed less than half of the assignments returned their surveys. All of the students who completed 50% or more of course assignments returned their surveys.

Rating the Content

The content of this course received high marks. Testers were provided with a list of every activity in the course and asked to indicate whether each was *helpful for you in terms of learning more about the course topic*. The ratings are shown in the table below.

Table 5.8 Ratings of Helpfulness of the Units Comprising *Integrating the Internet*

Course Outline and Activity List for Integrating the Internet	Not Helpful	Helpful	Did not Do
Unit 1: An Introduction to Internet Integration			
1.1 The New Reader Development Project—Developing an Internet Resource Guide: Read about the NCAL/RDP Internet project; Review “Surf the Net” Guide; post on Bulletin Board suggestions on how you would conduct a similar Internet project; complete an extra-reading wrap-up.	2	26 93%*	1
1.2 Online Articles: Read 2 articles—“Information Management” and “Technology and Adult Learning”; respond to Bulletin Board question; complete an extra-reading wrap-up.	4	25 86%	-
1.3 Weekly Online Chat	5	10 67%	14
Unit 2: Case Studies and Guided Internet Exploration			
2.1 An Investigation of Learning Context—Two Case Studies: Read 2 adult educator case studies; complete Description and List Form in portfolio; complete an extra-reading wrap-up on electronic field trips.	3	23 89%	3
2.2 Exploring Online Resources—An Introduction to PeerLit: Investigate PeerLit tool; conduct search on a learning theme or GED content area; view a PeerLit-reviewed external site; post comments on a PeerLit-reviewed external site; complete PeerLit Activity Development Form in portfolio; share thoughts on activity development process on Bulletin Board; complete an extra-reading wrap-up on educational Websites.	1	27 96%	1
2.3 Weekly Online Chat	5	11 69%	13
Unit 3: Designing Internet-Based Lesson Plans			
3.1 Exploring Online Resources—Searching for Useful Websites & Developing Activities: Surf the Internet for promising Websites using a variety of search engines; design an activity around a Website; complete Internet Activity Development Form in portfolio; submit activity to Activities Pool #2 with comments to the Bulletin Board; complete an extra-reading wrap-up by looking for additional information about online searching and cross-referencing Website topics.	1	17 94%	11
3.2 Testing Activities in Your Classroom—Reflection & Revision: Try out Internet activity you developed for your learners; collect learners’ feedback; reflect on process; plan for future development of Internet-related activities; complete an extra-reading wrap-up.	1	12 92%	16
3.3 Weekly Online Chat	2	9 82%	18

* Category 8 — Did not Do/Missing Data — is not included in the percentage base

Two things can be noted about the ratings. Almost all (86%–96%) of those who did the activities regarded them as *helpful*. An exception occurs for the chat. Between 13 and 18 people did not engage in any given chat. For the first two chats, the percent of respondents rating them as *helpful* was between 67% and 69%. The last chat was apparently a very different experience. Eighty-two percent of those participating found it *helpful*. The chat issue is discussed in greater detail later. A final observation is that the third unit saw a large decline in participation in all activities. This does not appear to be a design issue. Those who did the activities found them quite helpful. Several explanations seem reasonable. It could be simply the fall off in interest associated with being a tester instead of a committed student or the additional, unplanned hours required to complete course activities. It could also be the frustration of having so much more work than anticipated based on the course description.

Another way to look at the course content is to cluster together the many activities into collections of similar activities: readings, class "discussions," and developing an activity around the Web sites. Testers were asked to rate these components: *How important was each of these components to your personal professional growth?* The results are shown in Table 5.9 below.

Table 5.9 Rating of Course Components

Course Component	1. Not at All	2. A Little	3. Pretty Much	4. Very Much	N.A.	Mean
Searching for useful Web sites for your teaching	–	–	7 24%	22 76%	1	3.8
Testing out an Internet activity with a group of your learners	–	2 11%	6 32%	11 58%	10	3.5
Developing an activity around a PeerLit site	–	6 21%	12 43%	10 36%	1	3.1
Instructor comments/feedback on your portfolio	1 5%	5 24%	5 24%	10 48%	8	3.1
Course readings	–	7 25%	15 54%	6 21%	1	3.0
Ideas provided by instructor in the weekly "Chat" or "Bulletin Board"	3 13%	6 26%	10 44%	4 17%	6	2.7
Discussions with classmates in the weekly "Chat" and "Bulletin Board"	7 29%	7 29%	8 33%	2 8%	5	2.2
Working with an online partner	9 38%	8 33%	4 17%	3 13%	5	2.0

NOTE: Percents and means are based on totals in categories 1-4 only. Rows are sorted by mean rating.

Participants most valued having opportunities to search for and then test out useful Web sites with a group of students. One participant commented that the course: "made me aware of all the possibilities available to my students and me on the Internet." Another noted:

This course was well done and very relevant to my job. My students need to know more about the Internet and how to use it. I also need to know about these things, and this course helped me a great deal.

Three other activities tied in importance in the ratings: (1) developing an activity around one of the PeerLit Web sites, (2) feedback on one's portfolio by the instructor, and (3) course readings. A notch below these were comments of the instructor as seen in the chat. Well below these components were discussions with other students on the chat or bulletin board and working with an online partner.

Rating the Online Tools

Integrating the Internet pilot testers were asked to judge how well each of the online tools worked for them. Their ratings are shown in Table 5.10. By and large, testers report the tools worked well—they either had no problems or only minor problems using them. A major exception occurs for viewing a video clip. Two-thirds of the testers had major problems doing this. They either could not view the clip because Quicktime was not properly installed or the speed of their Internet connection was so slow that the digitized video could not flow into the computer fast enough to make viewing a pleasing experience.

The chat and bulletin board caused minor problems for close to half of the participants. In addition, about a quarter of respondents had minor problems with entering or revising their portfolio entries and even with logging on to the site.

Table 5.10 Rating the *Integrating the Internet* Tools

With this function I had...	No Problems	Minor Problems	Major Problems	Never Used
Login	20	8	1	—
Portfolio—making the initial entry	22	7	—	—
Portfolio—reviewing & revising an entry	15	9	4	1
Setting or changing your chat time	21	2	—	6
Using the chat feature	8	11	4	6
Using the Bulletin Board feature	10	12	7	—
Entering/revising your profile	19	6	2	27
Viewing a video clip	6	4	17	2
Using the online Notebook	6	1	—	22
“Researching” a topic on the Web	15	10	3	1
Average	14.20	7.00	3.8	—

Only three respondents tried the notebook. Apparently this tool does not meet a need for participants, though it could still acquire value for people who become regular participants in the *LitTeacher* offerings.

Participants were asked about the acceptability of the *delay between requesting a resource on the Web and having it available on your computer screen*. The delay for text retrieval was acceptable to almost all students. Somewhat surprisingly, submitting and retrieving portfolio entries proved to be an irritation for 62% of the respondents. This was almost as high as the irritation experienced for exchanging ideas in a chat. The delays associated with retrieving a video clip were the most irritating: for 59% it was a major irritation and for another 24% it was a minor irritation. See Table 5.11 below.

The analysis was re-run to see if the speed of the tester's connection was a factor in level of irritation. This is the major factor for irritation with retrieving and viewing a video clip. Sixty-four percent of those with a modem connection of 28.8-56.6 kbps reported a major frustration, while only six percent of those with a T1 line had a major frustration. Irritation with chat was associated with high computer skill (perhaps the medium of communication is too slow for these people) and with being low in comfort with all of the elements of a virtual classroom. Greater irritation with the chat feature was also shown by those for whom the course was currently not particularly important. Irritation with the portfolio feature is also associated with high computer skill (they are accustomed to the many features of today's sophisticated word processor) and with those who generally find themselves a little uncomfortable with many of the features of the electronic virtual classroom.

This course was a lot of work and required a lot of personal time. I worked on the lessons at home during non-work hours so at times resented the amount of off duty time involved. I gained a lot from the course so it was worth it. I especially appreciated the instructors' patience and support. They practically held my hand in the chat room.

Table 5.11 Acceptability of the Delay
Experienced Exchanging Information Electronically

Action	Acceptable	Minor Irritation	Major Frustration
Retrieving a typical page of text containing an assignment or a reading	23 79%	5 17%	1 4%
Retrieving and viewing a video clip	5 17%	7 24%	17 59%
Exchanging ideas in a chat	9 35%	10 39%	7 27%
Submitting or retrieving portfolio entries	11 38%	13 45%	5 17%

Course Demands and Appropriate Timing

The demands of this course were too much for many testers. The course was divided into three units. Of the 29 survey respondents enrolled in the course, 28 completed all or almost all of the activities of the first unit; 22 completed the second unit, and 13 the third unit. This is a very high completion rate (compared with the previous course). But testers were still asked what stood in the way of completing more of the work. Almost all

indicated that they didn't have enough time in their schedule. Much less importance was assigned to relevance of the course or difficulties with the Internet and Web.

Prospective testers were told the course would require them to spend about six hours online and six hours offline (reading and gathering data) spread over a 3–5 week period. When they first logged on to the course, participants were given time estimates for each of the three units. In the end-of-course survey they were asked if these estimates matched their experiences. In terms of course length, students felt a longer period was needed; 72% indicated that four weeks was too short a time for the amount of work required. Six felt four weeks was just the right length. In terms of hours required to complete assignments, the instructor's estimate was a third lower than what the testers felt was necessary.

Table 5.12 Estimates of the Time Required to Complete Course Activities

Unit	Instructor's Estimate (including 1 hour chat)	Student Estimates (including 1 hour chat)
Unit 1: Intro. to Internet Integration	3.0	4.1
Unit 2: Case Studies and Guided Internet Exploration	3.0	6.0
Unit 3: Designing Internet-Based Lesson Plans	6.0	10.4
Total	12.0	16.8

The testers' preference for a time of year to take this course differs from *Creating a Technology Plan*. Recall that the administrators in that course had a strong preference for summer time. The teachers in this course were about equally distributed across the seasons.

Table 5.13 Seasons When the Internet Course Would Work Well

Fall	Winter	Spring	Summer	All are Equal
3 11%	6 21%	5 18%	7 25%	7 25%

Do some season of the year work better than others in terms of available time to take a course such as this? Check one or more seasons that work particularly well for you.

Timing for the Chat

One of the attractions of an online course is the flexibility it offers students to complete the work when their schedules permit. Yet course designers often require a synchronous chat on a regular (weekly) basis to simulate a live classroom session and give students an opportunity to exchange ideas with classmates and the instructor. The challenge of a chat is selecting a time of day and day of the week that works well for all students. It is

doubly difficult for a course that aspires to enroll students from across the country because of the multiple time zones in the U.S.

Table 5.14 Time Periods Most Preferred for Class Chat

Day	4				Evening	Total
	Early Morning	Late Morning	Early Afternoon	Late Afternoon		
Monday	3	2	5	6	9	25
Tuesday	4	2	7	5	8	26
Wednesday	3	2	6	4	9	24
Thursday	1	–	2	4	5	12
Friday	1	2	4	1	4	12
Saturday	1	2	1	1	1	6
Sunday	–	–	–	–	5	5
Total	13	10	25	21	41	110

Respondents were asked to mark up to 3 time periods that would typically work best

Most of the *Integrating the Internet* chats were scheduled for 10:00 a.m. and 1:00 p.m. on Tuesdays. Participant responses indicate there are more optimal times. In terms of time of day, evening is the most popular followed by early afternoon. Late morning is the worst time. In terms of days of the week, Mondays and Tuesdays are best, followed by Wednesdays. The weekends are preferred the least.

Overall Ratings

Participants were asked what recommendation they would make to others in adult education regarding this course. Of the 27 who responded, three (11%) thought it was an *outstanding experience* and 23 (85%) rated it as a *useful experience*; one felt the course was not worthwhile. This individual concluded:

The content [of the sites that were recommended to participants] was too advanced for my students. Also, only thirteen lessons were available for mathematics (again—too advanced). Many of the activities were simply busy work!

This participant's overall negative response was unusual, however. More frequently, participants valued course activities and their learning. A sample of responses to the questions about whether respondents found course content useful, is provided below.

I believe the content of this course is very relevant to my job and will be useful in the future. Technology is becoming more and more important in our field. We need to stay in front of that technology in order to best serve our students.

The content was valuable and the activities were well planned. The course was high quality. The material was relevant to my job. Internet research is here. Teachers need to be aware of how to implement the tool.

Participants were also asked *who in the adult literacy arena should take this course?* Not surprisingly, 93% thought it was appropriate for teachers. But many thought it was appropriate for others as well: program coordinators and administrators (79%) and resource center personnel (66%). Only 21% thought it was appropriate for state directors or other state level staff.

When asked what they liked and most valued about the course, teachers identified several areas and activities including: (1) meeting other adult educators and exchanging ideas, (2) learning about technology—increased confidence and comfort, (3) course organization, (4) finding out about new Web sites for students and teachers, (5) chats with teacher suggestions, (6) Internet activities, and (7) course readings.

Areas least liked by teachers include: (1) insufficient time provided to complete course activities, (2) inflexible chat times, (3) chats in general, (4) their own inexperience with technology, and (5) planning lessons when topics weren't relevant to their student populations.

Teachers recommend providing course participants with training in computers and technology before they take these online courses. Many participants pointed to their lack of expertise and even at times, basic skill levels, in using computers and working on the Internet. Several suggested offering a companion course on technology skills. Below is a sample of teacher comments regarding their perceptions about the course and about the technology skills needed of participants:

I felt it was very misleading to conclude that a computer illiterate such as myself would be able to successfully complete this course.

I was pretty much a novice. I had difficulty from the beginning just trying to enroll. For the first several weeks, I often had trouble logging in and/or navigating within the site. I still am not sure if I was doing something wrong or if the problem was with the system.

The site was very user friendly, but I feel it was assumed that I knew more than I did. It took me several times to feel comfortable and understand what to do. Perhaps there could be an introduction/tutorial to using the features for those who need it—as a prerequisite.

I feel that having a class that discusses the basics of internet use would be helpful. How to get to different search engines, etc. Plus, an extra list of additional readings. Possibly step by step directions to different areas on the Web, so that a novice would feel comfortable with starting this class.

Perhaps there should be a course on building the computer skills that would make future online courses less focused on the “computer skills” and more on the course content.

More than one teacher also linked his or her frustration with time requirements of the course to inexperience with technology. As one teacher noted:

I am just developing fluency with online technology. Because of my lack of experience, activities took longer and computer glitches sometimes were serious

enough to be discouraging. I believe the context is especially relevant to adult education. The time, however, needs to be adjusted.

The most common area suggested for improvement involved recalculating the time frame for completion of course activities.

I felt frustrated by lack of time. Once when I was ready to go to the next unit, the unit wasn't opened. When it was open, I didn't have as much time.

Another area that many teachers identified as needing improvement involved the selection of online Web sites identified by NCAL as appropriate for students of the participants. Teachers felt that many of the recommended sites would be too challenging for their students to read. Participants also thought some of the assignments recommended for adult learners might not fit their needs and abilities. For example, one teacher wrote:

I just think the content and activities are most energetic. The activities are excellent, but my students' goal, to pass the GED test, is my priority. I can use bits and pieces, depending on my students. There just isn't enough time to carry out many of the activities. They are too complicated for the average student.

I was hoping to gain a lot of help—lessons to use with lower level GED students. I was disappointed because the suggested “lessons” were so sophisticated. I guess I became disheartened because I did not want to spend hours planning a lesson I know I would not use.

Participants' concerns regarding the course were primarily in two areas: teacher knowledge of technology and computer skills, and skill levels required for students to engage in online and other materials recommended by the course or designed by teachers as a result of the course. These areas need to be more fully considered in adjusting this course.

Conclusion

In sum, three areas of concern were identified with this course. One involved providing participants with additional help in developing basic skills needed to manage the electronic activities of an online course. Second, some of the Web tools need attention—in particular the login feature, the portfolio, and the chat. Third includes a content adjustment: the list of resource Web sites needs adjusting.

Planning for Technology

The third course to be tested was *Planning for Technology: Understanding the Role of Technology*. This course was launched on November 4. It was scheduled to run for three weeks, but was extended to five weeks to accommodate the schedules of a number of students. As was the case with all the courses, technology problems had to be solved for some of the participants.

Table 5.15 Ratings of Helpfulness of the Units Comprising *Planning for Technology*

Course Outline and Activity List for Planning for Technology	Not Helpful	Helpful	Did not Do
Unit 1: Principles of Technology Integration			
1.1 Pre-Survey: Fill out the pre-survey form; provide an example of how you currently use technology in your classroom.	4	9 69%	–
1.2 Ginsburg Paper: Read “Adding Technology to ABE/GED Instruction.”	–	12 100%	1
1.3 LitLearner Unit 14 Example: Review LitLearner Unit 14; post on the Bulletin Board your thoughts on LitLearner.	2	9 82%	2
1.4 Weekly Online Chat	2	4 67%	7
Unit 2: Overview of Available Technologies			
2.1 Survey and Current Realities—Analysis of Current Realities: Read “Technology and Adult Literacy”; read “Extent of Computer Technology Use in Adult Literacy Programs”; complete “Inventory of Current Technology and Available Resources”; post your thoughts on your organization’s strengths and weaknesses in terms of using technology.	1	11 92%	1
2.2 Weekly Online Chat	–	6 100%	7
2.3 Computer Software: Read “Seven Steps to Responsible Software Selection”; review LitLearner Unit 14; take a survey of software resources; post an example of how to use software in your lesson.	–	11 100%	2
2.4 Video: Review Teacher and Learner surveys; review examples of video integration from LiteracyLink and Crossroads Café; complete Survey of Video Resources portfolio activity; post an example of how to use a video to support your teaching.	1	7 88%	5
2.5 Internet: Learn about PeerLit; respond to the summary review; search and collect internet sites and brainstorm their potential use to teach a subject or theme; complete the Survey of Internet Sites portfolio activity; contribute to PeerLit site.	–	8 100%	5
Unit 3: Planning to Use Technology			
3.1 Example of a Technology-Integrated Lesson Plan: Review the LitLearner Teacher’s Guide on Supplying Information; reflect on strengths and weaknesses of the Teacher’s Guide; discuss ways in which to use the Teacher Guide to design a lesson plan.	1	10 91%	2
3.2 Design a Technology-Integrated Lesson Plan: Teacher’s Guide for Unit 14: Design a technology-integrated lesson plan; establish educational goals and focus for lesson plan; determine how software, video, internet, and other technologies can be integrated to achieve educational goals; post technology-integrated lesson plan.	–	9 100%	4
3.3 Next Steps in Planning for Technology: Revisit Ginsburg article, “Adding Technology to ABE/GED Instruction” and portfolio entries; determine next steps in planning for technology; explore NCTEC’s Learning with Technology Profile tool site.	1	7 88%	5
3.4 Weekly Online Chat	1	6 86%	6

* Category 8 — Did not Do/Missing Data — is not included in the percentage base

Twenty people started the course, but few completed all the work. Using the portfolio assignments as a measure of work completed, eight completed half or fewer of the portfolio assignments while two completed 50–79% of the portfolio assignments. Only six (approximately one-third) completed 80% or more of the assignments. Thirteen of the students completed surveys about their experience. Each of the completion groups are well represented. Five of the eight who completed less than half of the assignments returned their surveys. All eight of the students who completed 50% or more of the course assignments returned their surveys.

Rating the Content

The content of this course received high marks. Testers were provided with a list of every activity in the course and asked to indicate whether each was *helpful for you in terms of learning more about the course topic*. There were 13 activities ranging from reading articles online and taking a survey of local technology to developing lesson plans. See Table 5.15.

Two things can be noted about the ratings. Most of the activities were rated as *helpful* by 80% or more of the testers. An exception was the very first activity—the pre-survey in which the person had to provide information on personal technology use and an example of how they currently use technology in the classroom. Most of the people taking this course were doing so because they were not yet technology users, so they may have found this activity revealed more about themselves than they cared to.

Only six of the 13 testers participated in the first chat and two of the six did not find it helpful. But subsequent chats had higher ratings than for any other course, although the participation rate was quite low. The transcript of this chat might be reviewed to look for clues about why participants found it helpful.

Another way to look at the course content is to cluster together the many activities into collections of similar activities: readings, class "discussions," and developing an activity around the Web sites. Testers were asked to rate these components by responding to the question: *How important was each of these components to your personal professional growth?* The results are shown in Table 5.16 below.

Three activities were virtually tied for most important: developing a lesson plan (3.40 on a 4-point scale), instructor comments on the student's portfolio of work for the course (3.43), and course readings (3.36). One participant spoke both of the value of instructor feedback and of the frustration at not having sufficient contact with the instructor. She expressed a desire for more extensive and frequent "encouragement" and contact throughout the course. Other students echoed this interest in additional instructor and peer contact. This desire for more direct and frequent interactions among participants poses an interesting challenge for distance educators.

Appreciably lower were ideas derived from the chat and bulletin board. Lowest of all (2.42) was studying the components of one of the units in the *Workplace Writing* unit from *Workplace Essential Skills*.

Table 5.16 Rating of Course Components

Course Component	Not at All	A Little	Pretty	Very	N.A.	Mean
Instructor comments/feedback on your portfolio	–	–	4 57%	3 43%	6	3.43
Developing a draft of a technology-integrated lesson plan	–	1 10%	4 40%	5 50%	3	3.40
Course readings	–	1 9%	5 46%	5 46%	2	3.36
Ideas provided by instructor in the weekly “Chat” or “Bulletin Board”	–	5 50%	3 30%	2 20%	3	2.70
Discussions with classmates in the weekly “Chat” and “Bulletin Board”	1 10%	4 40%	4 40%	1 10%	3	2.50
Studying the components of LitLearner Unit 14	2 17%	4 33%	5 42%	1 8%	1	2.42

NOTE: Percents and means are based on totals in categories 1–4 only. Rows are sorted by mean rating.

Rating the Online Tools

The pilot testers were asked to judge how well each of the online tools worked for them. Their ratings are shown below.

Table 5.17 Rating the *Planning for Technology Tools*

With this function I had...	No Problems	Minor Problems	Major Problems	Never Used
Login	13	–	–	–
Portfolio—making the initial entry	9	5	–	–
Portfolio—reviewing & revising an entry	9	3	1	–
Setting or changing your chat time	8	1	3	1
Using the chat feature	6	2	3	2
Using the Bulletin Board feature	4	6	1	2
Entering/revising your profile	9	1	–	3
Viewing a video clip	5	–	3	5
Using the online Notebook	3	–	1	9
“Researching” a topic on the Web	6	3	–	4
Average	7.2	2.33	1.2	

By and large, testers report the tools worked well—they either had no problems or only minor problems using them. The chat and bulletin board features were problematic for up to half of the testers. The underlying software (Web Board) is quite reliable, so it is likely that users were simply unfamiliar with this form of communication, or uncomfortable using it. Three people had serious problems viewing a video clip and half

the group had minor or major problems with their portfolio. Only two testers tried the notebook.

The information delays associated with electronic information exchange were acceptable for retrieving text and submitting portfolio entries. But again in this course, video clips provided a frustration to many, though many were connected to the Internet at slower speeds. Six people had minor or major frustrations with delays associated with the chats. But this probably stems not from the slowness of the connection, but from the inherent slowness of this medium of exchange. See the table below.

Table 5.18 Acceptability of the Delay Experienced Exchanging Information Electronically

Action	Acceptable	Minor Irritation	Major Frustration
Retrieving a typical page of text containing an assignment or a reading	11 92%	1 8%	–
Retrieving and viewing a video clip	6 60%	–	4 40%
Exchanging ideas in a chat	6 50%	2 17%	4 33%
Submitting or retrieving portfolio entries	8 67%	3 25%	1 8%

Course Demands and Appropriate Timing

The demands of this course were too much for many testers. The course was divided into three units. Of the 13 survey respondents enrolled in the course, 11 completed all or almost all of the activities of the first unit; eight completed the second unit, and six the third unit. Testers were asked what stood in the way of completing more of the work. Almost all indicated they didn't have enough time in their schedules. For five of the 13, inexperience with computers and the Web were factors. Only two people attributed the reason for the course not being relevant to their current needs to their inexperience using computers.

When the testers first logged on to the course, they were given time estimates for each of the three units. In the end-of-course survey, they were asked if these estimates matched their experience. In terms of hours required to complete the material in each unit, the testers added between one and two hours to each unit. In terms of course length, students felt a longer period was needed. Eight felt that six weeks (the actual number of weeks the course was in session) was too short; five felt it was just the right length of time. One student suggested the course be offered over a 10–12 week period to “accommodate work, family, and personal life.” The testers' preference for the best times of year to take this course were winter and summer.

Table 5.19 Estimates of the Time Required to Complete the Course Activities

Unit	Instructor's Estimate (including 1 hour chat)	Student Estimates (including 1 hour chat)
Unit 1: Principles of Technology Integration	3.0	4.5
Unit 2: Overview of Available Technologies	6.0	7.2
Unit 3: Planning to Use Technology	6.0	7.9
Total	15.0	18.8

Table 5.20 Seasons When the Internet Course Would Work Well

Fall	Winter	Spring	Summer	All are Equal
2 15%	5 39%	1 8%	4 31%	1 8%

Do some seasons of the year work better than others in terms of available time to take a course such as this? Check one or more seasons that work particularly well for you.

Timing for the Chat

Most of the *Integrating the Internet* chats were scheduled for 10:00 a.m. and 1:00 p.m. on Tuesdays. Participant responses indicate there are more optimal times. In terms of time of day, late afternoons and evenings are the most popular followed closely by early afternoons. Mornings are least popular. In terms of days of the week, Thursdays are best, followed by Mondays and Tuesdays. The weekends are least preferred.

Table 5.21 Time Periods Most Preferred for Class Chat

Day	Early Morning	Late Morning	Early Afternoon	Late Afternoon	Evening	Total
Monday	–	–	2	3	4	9
Tuesday	–	–	2	4	3	9
Wednesday	2	–	4	1	2	7
Thursday	–	1	3	6	3	13
Friday	–	2	1	1	2	6
Saturday	1	–	–	1	1	3
Sunday	–	–	–	1	1	2
Total	3	3	12	17	16	49

Respondents were asked to mark up to 3 time periods that would typically work best.

Overall Ratings

Participants were asked what recommendation they would make to others in adult education regarding this course. Of the 12 who responded, two (17%) thought it was an outstanding experience and nine (75%) rated it as “a useful experience”; only one felt the course was not worthwhile. The one student who chose not to recommend the course wrote:

I didn't feel there was enough new content in this class to warrant the time required.... There didn't seem to be much that was really important to me professionally in this class.

The majority of other students offered a different perspective on the course content and value. A sample of their comments is listed below.

I took the course because I realize the importance of technology. I needed to be introduced to technology without being made or appearing “stupid.” This course challenged me and through these challenges I learned. It relates totally to my job as an educator and I can better relate to this technology as an educator. My goal is to continue learning and integrating.

The course was very thorough. I believe I will use much of the information.

The activities were well organized, of high quality, and will be very useful to me in the future.

This course was very helpful and my knowledge and skills were enhanced.

I really learned a lot. The information was excellent. At the present I am creating packets using all of the technology that we have available (computer, video, work sheets). I can see using this in my classroom, too.

The participants were also asked *who in the adult literacy arena should take this course?* All 12 said it was appropriate for teachers (but only 6 thought it was appropriate for tutors). Many thought it was appropriate for others as well: program coordinators and administrators (9), resource center personnel (7). Less than half (4) thought it was appropriate for state directors or other state level staff.

Participant comments on things they liked and most valued about *Planning for Technology* were similar to those given for *Integrating the Internet*. Participants pointed to several areas and activities they particularly valued including: (1) opportunities to network with other adult educators, (2) contact with LiteracyLink staff, (3) course content, (4) improved technology skills and knowledge, and (5) online resources and Websites for GED students.

Least liked areas and/or activities included: (1) insufficient time to complete activities, (2) the bulletin board, (3) lack of face-to-face interactions with peers and the instructor, (4) not enough feedback on assignments, and (5) timing of chats.

Conclusion

Most of the issues in this third course are similar or identical to those identified for the first two courses. Participants noted that scheduling was not optimal; the course should have been offered in a different season and over a longer time period—perhaps 6-10 weeks. Chats needed to be scheduled for more optimal times such as evenings and afternoons. Many testers in this course experienced difficulties with the same tools as did participants from the other courses: the chat, portfolio, and video clips. The notebook was again invisible to participants.

The unique lesson coming from this course is that the chat activity can be made to work. There was much more satisfaction with chat in this class than either of the other two. Teachers are clearly thirsty for communication and feedback. The tool chosen and the way it is used by the instructor are keys to meeting this need.

Volunteer Attrition—Further Lessons

In general there was a great deal of enthusiasm among the pool of volunteers to “try out” this novel approach to professional development. Although each was told up front what was entailed to complete the course, it is clear from the attrition rates that few fully understood. On average, less than one-third (32%) of participants completed half or more of the portfolio work required in the course. This is not in itself a reflection on the courses. Rather, participants were not aware when they volunteered that these courses would require a serious time commitment that would force them to re-allocate their work and home responsibilities to accommodate the learning time.

Table 5.22 Attrition from *LitTeacher* Courses and Survey Returns

Course	Registered	Dropped	Portion of Portfolio Completed		
			<50%	50–79%	80–100%
Creating a Technology Plan (Portfolio Activities: 8)	36	3	26	3	4
Completed Surveys	100%	8%	72%	8%	11%
Integrating the Internet (Portfolio Activities: 12)	48	9	22	6	11
Completed Surveys	100%	19%	46%	13%	23%
Planning for Technology (Portfolio Activities: 15)	18	2	8	2	6
Completed Surveys	100%	11%	44%	11%	33%
TOTALS	102	14	56	11	21
Completed Surveys	100%	14%	55%	11%	21%
Completed Surveys			27	9	21

NOTE: Portfolio Activities: the number of written assignments for the course.
Portion of Portfolio Completed: an indicator of how much work the student completed.

Completed Surveys: the number completing the pre- and post-surveys used to evaluate the course.

When *LitTeacher* is released as a regular set of courses, several conditions will be different as will various incentives. There will be a cost to taking the course, which may buy more commitment. Credit of various types (c.e.u. and academic) will be available for those who enroll. State directors may require teachers and administrators to take some of the courses. Regardless of incentives, it was clear from the pilot test that these courses require a tremendous amount of concentrated time and that the majority of participants were unable to free up this much time in their lives at the time these courses were offered. Making professional development of this sort a priority in adult literacy is a challenge.

***LitTeacher* in Perspective**

The *LitTeacher* model of Web-based professional development is a significant innovation in the field of adult literacy. The online model developed at NCAL is a strong one. It was well received by those who tested it in the fall of 1998. A number of adjustments will ensure the collection of courses becomes widely used when it is formally released in the summer of 1999.

Timing

A large number of the volunteer testers for these courses failed to complete the work in the time allotted. For many students, finding enough time in their busy schedules was the biggest impediment to participating fully in these courses. This suggests the importance of timing: when the course is offered, how long it lasts, and when features like the chat are scheduled.

Fall is not the best time of year to offer these courses if they are going to fit successfully into the rhythm of adult educators' work lives. Administrators preferred courses be available in the summer or winter—not fall or spring. Teachers were less restrictive, but winter and summer were the seasons selected by the largest numbers—about one-quarter of the testers.

A majority of participants from each class felt the course needed to be several weeks longer. Some of this may reflect the press of time felt by the testers, who may not have realized just how much would be required of them to try out all the elements of a real course of study. But clearly the time allotted by the instructors for assignments needs to vary according to activity and be more clearly delineated. For example, online readings are easily scheduled in a student's life. However, assignments that require students to collect data, develop a plan, or try out a lesson with their own students need to be spread out over a longer period of time to account for the extra time required for scheduling, interacting with others, and coordinating events.

One other timing issue is the weekly chats—the one activity where students in an online course must participate concurrently in an activity. Again there were differences for

administrators and teachers. Evenings were strongly preferred by both administrators and teachers. For other times of day, administrators preferred early mornings while teachers preferred any time in the afternoon. Monday through Wednesday were most preferred and Thursday slightly less so. There was little interest in the period from Friday noon through Sunday night. Existing chat times for the pilot test were least preferred of all.

Content

Respondents rated the value of each activity in each course. By and large they liked them all—good choices.

Extremely relevant and well-done course outline. Very helpful readings and very helpful questions. Absolutely will be useful in the future....

However, the above quote is typical in that it continues with:

However, I found the online portfolio very uncomfortable to use. The window would not expand and the words scrolled out of the window rather than wrapping....
The chats were difficult to attend....

The weekly chat was the least successful activity. This was troublesome for students in every course. Many—often half or more—simply ignored the chat and did not participate. Those who did participate tended to rate the activity as *not helpful*, except in the *Planning for Technology* class. Thus, designers must ask the question: Is it a matter of just timing, or is it the wrong technology? The obvious advantage of chat is it serves as a timing mechanism, reminding students time is passing and they need to attend to course activities on a regular basis. It is this function that led the Open University in the 1970s to make the primary form of distribution of their video-based telecourses a weekly broadcast instead of a purchased set of video cassettes. But the chat medium has very narrow channel capacity. It is difficult to carry on thoughtful dialogues about a topic when individual statements are communicated so slowly. The flow of conversation tends to be disjointed, and important ideas do not develop easily as they do in a live face-to-face conversation. The asynchronous bulletin board technology supports more deliberative interchanges and might be a worthwhile compromise between channel capacity and shaping people's participatory behavior. The topical organization of bulletin boards (at least the board implemented by Web Board) is a clear improvement over simple e-mail.

Technical Performance of the Web Tools

The content of these courses resides in a Web-based architecture that handles the generation of content—text, graphics, and digitized video. It also handles the exchange of information among students and between students and the instructor—communication by e-mail, chat, and bulletin board and submission of assignments through Web-based forms. From a student's perspective the performance of the system depends on technologies in addition to the server at PBS. It depends as well on the Internet links between the server in Washington and the student's place of study. The Internet is made

up of hundreds of links that perform at varying speeds and fluctuating reliability depending on the particular route chosen by computer routers. The speed and reliability can vary from minute to minute and day to day. Performance also depends on the technology at the student's end of the Internet: the speed of the modem and the power and speed of the computer that is used to handle the course transactions.

By and large the technology worked quite well when participants had to simply log on to the Web site and read text from a Web page. There were modest problems with the portfolio feature. Students sometimes had trouble entering their assignments or finding the results when they went to retrieve their entries. It is difficult to ascertain where in the technological chain between a student's keyboard and the servers in Washington things got lost.

Problems with the chat/bulletin software were of two types. The Web Board software that handles the chat and bulletin board is a subsystem on the server linked to the course Web site. When the assignment called for the student to select the chat feature, a simple click on the button within the Web site would bring up the chat software. But the reverse was not as easy. When a student chose to leave the chat and return to the course Web page, the button within Web Board was not linked back to the sending Web page. This was a minor irritation for some since it often required logging back in to the course site and searching for the sending location. This type of problem is probably easily solved by customization of Web Board if that continues to be the software of choice to support this functionality.

There were major problems for a large number of students when they had to view video clips. Given the size of the digital files that contain a video clip, a fast Internet connection is needed to get the file to the student's computer in a reasonable amount of time. Once there, QuickTime 3.0 must be properly installed to decode the digitized file. The QuickTime technology itself is an excellent choice for the quality of the video picture that it can render. But its functionality depends on correct installation on the receiving computer. Although the installation is simple for some, it is non-trivial for many—even those who are reasonably competent at operating computer programs such as a Web browser or word processor. Technical support is a necessity. The question is who should supply it: PBS or the agencies requesting the *LitTeacher* programs.

Sometimes technical problems were not the responsibility of the student. In several sites, the configuration of every computer in an organization was controlled by a central Information Technology group. Versions and configurations of Web browsers and helper applications such as QuickTime were not only the responsibility of this office, but upgrades and change were resisted as a policy. These experiences underscore the necessity of selling the product and approach to an entire system, not just particular individuals who may be interested in subscribing using any of the LiteracyLink online products. Minimally, simple precise configuration instructions should be circulated to any individuals or organizations inquiring about enrolling in these courses.

Classroom Communication as a Larger Issue

Problems with the chat feature were not always technical. Orchestrating student verbal behavior in a live classroom is a challenging job for an instructor in a live classroom. Frequent decisions must be made about which questioning strategies will help students understand particular concepts. In the live situation the instructor has numerous cues to judge the value of a particular strategy. It is much more difficult with faceless communication. There is the very human problem of encouraging participation and making participants feel they are learning from the experience when there are so few cues. Analysis of the course aspects most valued by the testers shows communication and feedback to be very high on their list. Research has confirmed the importance of a skilled moderator in making electronic conferencing an effective tool for learning. Instructors for the new courses that will be created for *LitTeacher* will need to be trained in effective use of this medium, just as distance learning teachers in video-based telecourses are trained currently.

Training Students in the Use of Electronic Tools

Many *LitTeacher* students requested training in the basic skills of computing and Internet use. It seems reasonable that such training could be delivered using the same model that underlies the existing courses. Adults have spent years mastering the tools of more traditional professional development—reading print, typing papers on typewriters or stand-alone computers, listening carefully to instructors in live classrooms, and discussing issues with classmates in face-to-face settings. They need time to hone the analogous skills of reading print on a computer screen, typing assignments into a form on the Web, and communicating with electronic tools in place of live interactions. It would be best if these skills could be mastered in advance of engaging in the regular course.

Build It, and Will They Come?

Attrition among the pilot testers between initial recruitment and the end of the course was quite large. This is probably due in part to the nature of a pilot test. Many testers may have volunteered to simply try out a new concept, not spend 4–6 weeks in an intensive course. But these testers ARE the real audience for *LitTeacher*. What incentives will there be for the real audience beginning next July? This issue should be raised with the many gatekeepers who will legitimize this form of online professional development.

In conclusion, a number of minor and a few major adjustments are required to allow the *LitTeacher* professional development courses to reach their potential as a major force to improve adult literacy instruction in this country.

Appendix A
Supplementary Tables

Table A1. Demographics of the WES Test Groups

Demographic		Finding A Job	Workplace Writing
Total		42 / 100%	24 / 100%
Gender	Male	23 / 55	7 / 32
	Female	19 / 45	15 / 68
Age	16–18	22 / 52	8 / 38
	19–22	6 / 14	2 / 9
	23–35	4 / 10	6 / 29
	36+	10 / 24	5 / 24
Reading Level (Teacher Rating)	<5	7 / 17	2 / 9
	5-6	11 / 26	3 / 13
	7-8	4 / 10	7 / 30
	>8	20 / 48	11 / 48
Education (Highest Grade Completed)	<9	2 / 5	3 / 14
	9-11	30 / 73	9 / 43
	12	4 / 10	6 / 29
	>12	5 / 12	3 / 14
Employment Status	Work FT	4 / 10	2 / 10
	Work PT	10 / 25	3 / 14
	Not Working	28 / 65	19 / 76
Years in the Work Force	(Range 0–51)	Mean 8.7	Mean 7.3
Computer Experience	Low	4 / 10	5 / 23
	Medium	28 / 67	12 / 55
	High	10 / 24	5 / 23
Web Experience	Low	22 / 54	9 / 43
	Medium	17 / 41	10 / 48
	High	2 / 5	2 / 9
Perceived Importance of the course*	Not At All	1 / 2	–
	A Little	2 / 5	1 / 4
	Moderately	9 / 22	8 / 33
	Very	29 / 71	15 / 63

* *How important is it for you to improve your skills in this area right now?*

LiteracyLink Pilot Test — Fall, 1998

Table A2. Attrition in the WES Pilot Test Sample

Location	Org. Type	No. of Classrooms	No. of Teachers	No. of Students		
				Baseline	Week 1	End
Finding a Job						
Waterloo	CC	1	2*	10	8	6
Buffalo	CBO	1	2*	20	15	12
Bakersfield	PUB	1	1	11	8	7
Niagara Falls	PUB	1	1	11	10	4
Council Bluffs	CC	1	1	8	4	1
Des Moines	CC	1	1	10	7	6
Decorah	LIB	1	1	6	6	6
Subtotals	N	7	9	76	58	42
	%			100%	76%	59%
Workplace Writing						
Dubuque	CC	1	1	3	3	3
Council Bluffs	CC	1	1	7	4	2
L.A.	CBO	1	1	3	3	3
Dubuque	CC	1	2*	5	4	3
L.A.	CBO	1	1	3	3	2
Bakersfield	PUB	1	1	11	10	8
Henderson	CC	1	1	6	5	3
Subtotals	N	7	8	38	32	24
	%			100%	84%	63%
Combined						
Totals	N			114	90	66
	%			100%	79%	58%

* Team teaching.

Table A3. Demographics of the *LitTeacher* Pilot Testers

Demographics		Creating A Technology Plan	Integrating the Internet	Planning for Technology
Total		13 / 100%	29 / 100%	13 / 100%
Role in Adult Ed	Admin	10 / 76	2 / 7	2 / 15
	Teaching	3 / 24	27 / 93	11 / 85
Years in Adult Ed	Mean / range	14.0 7 – 28	5.6 1 – 25	7.3 2 – 20
Years of Education	Mean	17.8	16.9	16.7
Gender	Male	2 / 15	4 / 14	–
	Female	11 / 85	25 / 86	13 / 100
Age	22–45	2 / 15	11 / 38	3 / 23
	>45	11 / 85	18 / 62	10 / 77
Computer Skill	Low	2 / 15	12 / 43	6 / 46
	High	11 / 85	16 / 57	7 / 54
Internet/Web Use	Low	3 / 24	17 / 59	5 / 38
	Med	5 / 38	9 / 31	7 / 54
	High	5 / 38	3 / 10	1 / 8
Importance of this Course*	Low	2 / 15	9 / 31	6 / 46
	High	11 / 85	20 / 69	7 / 54
Importance of Prof. Development*	Low	1 / 8	8 / 28	3 / 24
	Med	7 / 54	10 / 34	5 / 38
	High	5 / 38	11 / 38	5 / 38
Participation in Prof. Development*	Low	2 / 15	9 / 31	3 / 24
	Med	4 / 31	14 / 48	5 / 38
	High	7 / 54	6 / 21	5 / 38
Internet Connection Speed	< 28.8	0 / 0	2 / 7	1 / 8
	28.8–56.6	5 / 38	14 / 48	3 / 23
	T1	5 / 38	5 / 17	4 / 31
	D.K.	3 / 24	8 / 28	5 / 38

NOTE: The numbers in each category (Role in Adult Ed., etc.) may not total the number at the top of each column due to random missing data from respondents.

Appendix B

Descriptions of LiteracyLink Products

LiteracyLink Pilot Test — Fall, 1998

The original report contained three one-page documents that are not available in electronic form:

- A Description Of The Literacylink Partners: PBS, KET, NCAL, Kentucky Department of Education and Kentucky Workforce Development Cabinet.
- Workplace Essential Skills—Overview of the Series
- the KET Workplace Essential Skills Series—A Listing of the 24 Unit Titles

This handout was distributed to pilot test sites to inform them about the pilot test

MINI-COURSE OUTLINES FOR FALL '98 MATERIALS TESTING

LiteracyLink Teachers: This fall four mini-courses need to be tested by Innovation Site teachers. You will be asked to test ONE set. Two of the mini-courses are units for students from the new *Workplace Essential Skills* series; two are online professional development courses for teachers and administrators. The outlines below provide an overview of what is covered in each course. The units for students use a combination of Internet, video, and print materials. Minimum instructional time is 4-6 hours per week for 5-6 weeks. In late August or early September LiteracyLink staff will conduct a workshop in your area to provide extended help with teaching strategies. The mini courses for teachers and administrators involve no teaching, but you would be required to spend 3 hours per week online for about 5 weeks.

A Mini-Course for Students

FINDING A JOB

PREPARATORY ACTIVITIES

Before you begin teaching these units you will administer a questionnaire to your students and provide them with some training in general use of the computer and the Internet. Below, the term session is a block of instructional time; its length will vary depending on your sense of the needs of your students.

UNIT ONE PLANNING FOR WORK

Session One

- Teacher Introduction
- Online Welcome Tour (students become acquainted with the various parts of the online resources)
- Anchor Activity: *Planning for Work* Video and Discussion

Session Two

- Introduction of Student's Individual Learning Plan including sample workbook, video, and Internet activities

Session Three and Four

- Individual, small group, or whole class activities using the workbook and online activities
 - a) Thinking about work
 - b) Making a career plan
 - c) Researching jobs and careers
- Online Tour of HomeSpace (the student's electronic portfolio)

Session Five: Closure activity and preview of next unit

UNIT TWO MATCHING SKILLS & JOBS

Session One

- Anchor Activity: *Matching Skills & Job* Video and Discussion
- Individual Online Learning Plan review (may continue over two or three sessions)

Session Two, Three and Four

- Individual, small group, or whole class activities using the workbook and online activities
 - d) Know yourself
 - e) Finding job leads
 - f) Making the job search for your job.
- Complete work on earlier activities as needed

Session Five: Closure activity and preview of next unit

UNIT THREE APPLYING FOR JOBS

Session One

- Anchor Activity: *Applying for Jobs* Video and Discussion
- Individual Online Learning Plan review

Session Two, Three and Four

- Individual, small group, or whole class activities using the workbook and online activities
 - g) Figuring out the application process
 - h) Learning how employers screen job applicants
 - i) Completing job applications
- Complete work on earlier activities as needed

Session Five: Closure activity and preview of next unit

UNIT FOUR

MAKING THE SEARCH FOR YOUR JOB

Session One

- Anchor Activity: *Making the Search Your Job* Video and Discussion
- Individual Online Learning Plan review

Session Two, Three and Four

- Individual, small group, or whole class activities using the workbook and online activities
 - j) Understanding the purpose of resumes
 - k) Deciding which job openings to pursue
 - l) Comparing jobs
- Complete work on earlier activities as needed

Session Five: Closure activity and preview of next unit.

UNIT FIVE

INTERVIEWING

Session One

- Anchor Activity: *Interviewing* Video and Discussion
- Individual Online Learning Plan review

Session Two, Three and Four

- Individual, small group, or whole class activities workbook and online activities
 - m) Exploring the interview process
 - n) Preparing for an interview,
 - o) Interviewing and follow-up
- Complete work on earlier activities as needed

Session Five: Closure activity

Session Two

- Introduction of Student's Individual Learning Plan including sample workbook, video, and Internet activities

Session Three and Four

- Individual, small group, or whole class activities, workbook and online activities
 - a) Becoming an effective writer
 - b) Understanding workplace writing
 - c) Using appropriate language
- Online Tour of HomeSpace (the student's electronic portfolio)

Session Five: Closure activity and preview of next unit

UNIT TWO

DIRECTIONS, FORMS, & CHARTS

Session One

- Anchor Activity: *Directions, Forms, and Charts* Video and Discussion
- Individual Online Learning Plan review

Session Two, Three and Four

- Individual, small group, or whole class activities using workbook and online activities
 - d) Writing down information
 - e) Working with forms
 - f) Using charts effectively
- Complete work on earlier activities as needed

Session Five: Closure activity and preview of next unit

UNIT THREE

WRITING LETTERS, MEMOS, AND REPORTS

Session One

- Anchor Activity: *Writing Letters, Memos, and Reports* Video and Discussion
- Individual Online Learning Plan review (may continue over two or three sessions)

Session Two, Three and Four

- Individual, small group, or whole class activities using the workbook and online activities
 - g) Learning how employers screen job applicants
 - h) Figuring out the application process
 - i) Completing job applications
- Complete work on earlier activities as needed

Session Five: Closure activity

A Mini-Course for Students

WORKPLACE WRITING

PREPARATORY ACTIVITIES

Before you begin teaching these units you will administer a questionnaire to your students and provide them with some training in general use of the computer and the Internet. Below, the term session is a block of instructional time; its length will vary depending on your sense of the needs of your students.

UNIT ONE

WRITING BASICS

Session One

- Teacher Introduction
- Online Welcome Tour
- Anchor Activity: *Writing Basics* Video and Discussion

PLANNING FOR TECHNOLOGY

UNIT 101A

INTRODUCTION TO TECHNOLOGY PLANNING

This mini-course is designed to help adult literacy educators and administrators examine their programs' needs and develop a vision for technology within their organization. Participants will think about necessary steps in technology planning and consider a variety of technology solutions. This first unit is a prerequisite for Unit 101B which guides participants through the process of developing a technology plan.

UNIT 101B

CREATING A TECHNOLOGY PLAN

This unit complements "Introduction to Technology Planning". Individuals will develop a detailed technology plan suitable for their organization. This unit explores budgeting issues, staff development challenges, implementation guidelines & evaluation procedures.

INTEGRATING TECHNOLOGY INTO THE ABE/GED CURRICULA

UNIT 103A

INTRODUCTION

This unit serves as an introduction to Units 103B and 103C and is a prerequisite for both of these units. Course participants will read a number of articles on approaches to integrating technology into adult learning environments and respond to the readings in multiple ways—by writing formal papers, "journaling" with their facilitator and/or colleagues, and submitting posts to the class' online bulletin board.

UNIT 103B

VIDEO

This unit supports practitioners' efforts to integrate the KET video series into their classroom activities. Class participants will develop ways to contextualize these videos by developing "before, during and after" activities, discussions, and complementary projects. Participants will also consider their instructional role with respect to the videos.

UNIT 103C

INTERNET

This unit gives practitioners the opportunity to explore the educational resources currently available on the Internet, with particular attention to LiteracyLink's online component. Participants will learn how to use LiteracyLink in a variety of educational contexts.