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IDENTIFIERS   *Textile Industry; *Workplace Literacy

ABSTRACT
                As described in this performance report, the
Workplace Literacy System (WLS) project was a national demonstration
program in which North Carolina State University, Forsyth Technical
Community College, and Sara Lee Knit Products Company (SLKP)
participated as partners. During the project's second phase, a
nine-module curriculum on the history of the textile industry, the
textile process, and cloth utilization was developed and converted to
50 hours of CD-ROM disks courseware (copyrighted as TEXTdisc Version
2.0). Each module gives adult workers practice in establishing
reading goals, learning vocabulary, working with graphs, finding main
ideas, organizing and scanning for information, making inferences,
summarizing, taking tests, and answering comprehension questions.
According to the third-party evaluation included in this report,
enrollment in the program at SLKP was higher than anticipated, and
students, plant supervisors/management, and teachers/instructors who
used the package were all very pleased with it. The document also
includes the TEXTdisc curriculum and accompanying documentation.
Among the curriculum materials included is a four-section guide to
using the TEXTdisc program that contains sections on the
instructional focus of TEXTdisc, setup and use of its hardware and
software, and additional information about the instructional
management features of TEXTdisc 4.1. (MN)

Final Performance Report

The Workplace Literacy System Project (WLS)

Phase II

North Carolina State University
Forsyth Technical Community College
Sara Lee Knit Products Company

Grant #V198A2006
A Demonstration Project of the National Workplace Literacy Program

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Section I

Narrative report on performance of Workplace Literacy System Project

Final Performance Report

The Workplace Literacy System Project (WLS) - Phase II

The period covered by this performance report is June 1, 1992 through November 30, 1993. The project was funded in part by a grant from the U.S. Department of Education, Office of Vocational and Adult Education, Grant number V198A2006. The project was part of a group of national demonstration projects funded by the National Workplace Literacy Program.

Partners participating in this project included: North Carolina State University, Forsyth Technical Community College, and Sara Lee Knit Products Company (SLKP). The project site was a Sara Lee plant in Winston-Salem, North Carolina. Supporting organizations involved with this project included the North Carolina Department of Community Colleges, Raleigh, N.C.; Interactive Knowledge, Inc., Charlotte, N.C., and Literacy South, Durham, N.C. The latter served as a third party evaluator for the project. A copy of the evaluation report submitted by Literacy South is included as part of this performance report.

Interactive Knowledge of Charlotte, N.C. was responsible for the preparation of the CD-ROM discs that contains about seventy hours of instruction and drill in basic skills presented within the context of the textile/apparel manufacturing industry. The documentation for this CD-ROM disc is included as part of this performance report. The courseware is known of the TEXTdisc Version 2.0.

In addition to the primary project site for WLS at Winston-Salem, the courseware and curriculum materials were made available to the SLKP plant in Forest City, N.C. and to two other current National Workplace Literacy demonstration projects: the program at

Clemson, S.C. at the West Point Pepperell plant, Project Director Dr. W. Fisk; and to the Pitt Community College program at Farmville, N.C., a Collins and Aikman plant, Project Director Ms. Marguerite Stephens.

ACCOMPLISHMENTS OF THE WLS PROJECT - PHASE II

Objective 1:   Develop quantitative and qualitative tools to measure the attainment or enhancement of job-related skills and other workplace-related outcomes.

Assessment materials were developed to measure the attainment of workplace related knowledge and skills. The mix of assessment exercises employed four types of exercises: true/false; fill-in-the-blanks, multiple choice, and writing paragraph summaries. These materials were developed for each of the nine reading lessons contained in the courseware (TEXTdisc 2.0). Scoring guides and student record sheets were developed as well. These materials are included here for only two of the reading lessons (in the interest of space). All of the TEXTdisc materials are protected by copyright. The two lessons included are on the knitting and weaving processes. The complete reading material for these modules are included in Part II of this report. All of the words underlined in the reading lessons are included in an on-line dictionary that provides workers with audio and visual support to help them learn. The on-line dictionary of over 500 words also allows greater flexibility in terms of the reading level of workers using the TEXTdisc.

Objective 2:   Involve workers in every phase of planning, development, testing and evaluation of the Workplace Literacy System Project.

The workers and supervisors at Sara Lee Knit Products contributed to the quality of this program through their participation and involvement in the following ways:

- Serving as members of the Sara Lee Educational Development (SLED) Committee, helping to plan, implement and market the workplace literacy program within the SLKP plants;

- Helping to identify barriers to worker participation in the program;

- Reviewing newly developed curricula for relevance and appropriateness of technical content, vocabulary, and level of difficulty;

- Bringing specific educational needs to the attention of curriculum developers;

- Demonstrating job functions to the project staff;

- Participating in evaluations of courseware, instructors, and general program issues; and

- Helping to market the program through word of mouth and peer support to co-workers.

In addition they met with the third-party evaluator in helping make an independent evaluation of the success of WLS as an effective workplace literacy system.

Objective 3:   Assess skill requirements of the major job classes within the weaving, dyeing, and finishing operations of the textile industry.

The Workplace Literacy Specialist completed job audits for the major jobs in the Stratford plant of SLKP. These job audits were used to provide the curriculum/courseware development team with lists of relevant basic and job-related skills. Many of these skills are of a nature that they can and were stressed in the

development of the TEXTdisc curriculum and courseware. Some of the workplace skills go beyond the objectives of the National Workplace Literacy Program and these are best left for company job training programs. This project (WLS) did not attempt to train an individual for a specific job.

Objective 4:   Recruit at least 300 new participants and assess their individual basic skills.

During Phase II of the WLS project there were 575 people enrolled in the program over the six 10-week quarters. In total during both Phase I and Phase II the WLS program had 951 enrollments.

The quarter by quarter enrollment data for Phase II is shown in Table 1 and the profile of those participating is presented in Table 2.

Assessments of individual workers' skills during WLS were made with a variety of testing materials. TABE Locator, TABE Survey, and TABE Standardized tests were used along with the series of CASAS-Adult Life Skills tests. Assessment instruments developed during WLS were also used. These were described in Objective 1. In addition the courseware used to support this project, the CCC Courseware and the BASE courseware have student assessment and record-keeping systems.

Standard procedure during WLS was to assess students as they entered the program and at appropriate milestones thereafter. Finally, twenty-four workers passed the GED exam during WLS.

Objective 5:   Deliver a workplace literacy program to employees of SLKP on site at two plants.

The WLS partnership was able to accommodate SLKP from three plants by opening the Learning Center to SLKP workers from plants other than the Stratford plant but located near enough to commute to the Stratford Learning Center. The instruction at the Stratford plant was provided by Forsyth Technical Community College.

At the SLKP Forest City plant the instruction was provided by Isothermal Community College.

The TEXTdisc was installed in both locations. At Forest City the supporting computer curriculum was Plato (TRO).

■ HISTORY

History of the Textile Industry

■ THE TEXTILE PROCESS

Preparing Cotton Fibers for Spinning

Spinning of Wool and Cotton Yarn
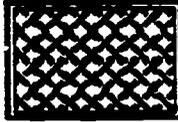
Knitting Fabric

Weaving Fabric
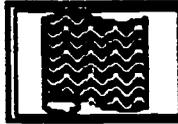
Fabric Finishing and Color Application

■ CLOTH UTILIZATION
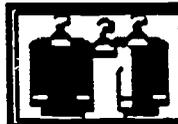
The Apparel Industry
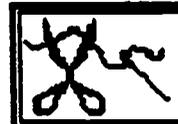
Cutting and Sewing: The Making of Garments

Automotive Upholstery

Objective 6:   Develop two customized workplace literacy curriculum modules in the
                context of the weaving, dyeing, and finishing operations of the textile
                industry.

During WLS nine curriculum modules were developed pertaining to the manufacture of
textiles and apparel. The nine modules are as follows:

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Each curriculum module requires the worker to read a story about a process involved in textile manufacturing or utilization. Each module gives adult workers practice with the following skills:

- establishing reading goals
- learning technical and non-technical vocabulary
- working with graphs
- finding main ideas
- organizing information
- scanning for information
- making first-level inferences
- summarizing information
- test-taking
- answering comprehension questions

Objective 7:   Convert the customized curriculum modules to fifty hours of CD-ROM courseware.

The curriculum materials have been converted to interactive, multimedia CD-ROM courseware. In all the courseware contains nine reading modules designed to improve the basic prose literacy skills of adults, four modules designed to improve document literacy skills, and 400 word problems designed to improve quantitative literacy skills.

In all the courseware contains about 75 hours of instruction and drill. An on-line dictionary provides learners with audio and video support for about 550 vocabulary words which enables the courseware to serve learners with considerable variation in reading skills.

A detailed description of the courseware, copyrighted as the TEXTdisc Version 2.0, is

provided in Part II of this report.

Objective 8:   Evaluate the effectiveness of the Workplace Literacy System
                                  Project.

The WLS project was a success. This conclusion is based on the following:

- Adult workers employed by SLKP enrolled in numbers higher than the
  project goals; they told evaluators they liked the program and it was
  helping them; and they showed improvement in the basic skill levels when
  those skills were measured.

- Supervisors and the plant management at SLKP are pleased with the
  program and have made it a part of a continuing program of workplace
  education. SLKP has hired the staff that were employed by the WLS
  project and the program continues as it existed under WLS.

- The TEXTdisc which represents the curriculum/courseware effort of WLS
  is being used by three other National Workplace Literacy projects in Pitt
  County, N.C., Clemson, S.C., and Enterprise, Ala.

- The TEXTdisc has attracted interest from textile manufacturing firms who
  have expressed an interest in being able to acquire the
  curriculum/courseware. To that end the TEXTdisc has been put under
  copyright protection by North Carolina State University and an exclusive
  license has been executed with Interactive Knowledge, Inc. of Charlotte,
  N.C. to distribute the TEXTdisc.

- Teachers/instructors using the TEXTdisc package
  (curriculum/courseware/assessment/student management system) found it

very useful. Comments from them follow:

Because of the grant time line, each department had eight weeks, and we only had space for one department at a time. TEXTdisc was five of the eight weeks. Therefore, many students only completed the Whole Numbers in Math Module and the Reading Module that corresponded to their department. Each student was giving two hours of their own time, and the company was paying for one hour. The three hours was on their day off. I hope to promote the class again in another Greige Mill Plant and extend the class for a longer time period and use the suggestions on the attached evaluation.

My opinion of the program is very positive. I felt that the students gained more confidence in themselves as they learned to use the computer. I would say that 98 percent of the students did not know anything about a computer and had never used a computer before this class. When they completed the class, they felt very comfortable with the computer. They also enjoyed reading and doing math on the computer. I found that most of the students did better in the reading module within their department. The math was also interesting for them. They would have a short teacher-centered class followed by the computer lesson. This method was very successful with my classes.

Some of my students have gone on to other computer classes, GED classes, and some are continuing with the TEXTdisc class. This program allows adults to realize that they are never too old to learn, and they also remember more than they thought they would.

TEXTdisc has been used in several of my classes. Most extensively, it was used in an eight-week short course which was offered to all Greige

Plant employees. Students spent approximately fifteen hours using the TEXTdisc package. During the fifteen-hour period, students received about two and one-half hours of whole group instruction. They spent the rest of the time using the Math and Reading programs independently, with teacher assistance.

I was pleased with student response to the program. Use of TEXTdisc allowed me freedom to individualize and better meet student needs in math and reading as they were engaged in a user-friendly program with contextual richness. It is a tremendous management tool for the busy workplace educator!

TEXTdisc is also used with GED and Basic Skills classes. I like to use TEXTdisc for two reasons: 1) the program is easy for students to use; they enjoy feeling autonomous when working on a computer; and 2) TEXTdisc is full of quality work-specific reinforcers. Employees from the Greige Plants are particularly interested in a program that was written especially for them.

Last, I use TEXTdisc with intermediate and advanced reading students. I sit with these students, using the program much like I would use a text, reviewing sounds and rules. TEXTdisc is a highly engaging resource for the person who is new to reading and even newer to the exciting world of computer technology.

- Adult workers reaction to the TEXTdisc was generally positive. A typical reaction from a group of 43 workers at a National Workplace Literacy program in South Carolina follows:

TEXTdisc EVALUATION RESULTS

(group of 43 adult workers)

1) Has this course helped you meet or work toward any of your personal goals?

Card	yes	4	no	3
Cloth	yes	4	no	1
Spinning	yes	15	no	1
Weaving	yes	14	no	1

If you checked yes, in what way has it helped you meet your personal goals?

Card
Helped me to read faster and get information more quickly.
Have never been on a computer before; best thing I ever did.
It was like a refresher course.
Learned more about computers.

Cloth
Learned more about computers.
Helped me think things out.

Spinning
More aware of reading words.
Learn more about computers.
Think things out.
Made me realize how much I had forgotten.
Helped with math.

Weaving
To go on in life and go on to receive my GED.
To get familiar with the computer.
By getting to learn how to operate the machine.

2. Was the computer program what you thought it would be?

Card	yes	3	no	4
Cloth	yes	5	no	0
Spinning	yes	15	no	1
Weaving	yes	11	nc	4

If you checked no, how was it different from what you expected?

Card
I thought the class was to teach about computers rather than reviewing math.

Cloth

Spinning	I did not think it would be interesting.

Weaving	Easier.
	I thought it would be working more with computers.
	Was not expecting so much math.

3) Would you recommend this program to a co-worker or friend?

Card	yes	6	no	0
Cloth	yes	5	no	0
Spinning	yes	16	no	0
Weaving	yes	15	no	0

Why or why not?

Card	Because most people need to know other people (their personality, ability to say and do things, their habits and dislikes). This is a good class and everybody should learn something from it.
	It would be very beneficial.

Cloth	To learn more.
	So that they could learn about computers.
	Very good.

Spinning	Helps you to know how much you have forgotten.
	Helps you read better.
	To learn more.
	To learn more about computers.
	Very good.
	To help them with math.
	Because this is the future thing.
	It's interesting.

Weaving	It helps you with everything you may have forgotten.
	It pays to learn all you can in life.
	Keeps you mentally alert.
	It helps to get started on computer.

4) If you could change anything about this program, what would it be?

Card	Would not change a thing.
	More reading and less math.

Cloth	Make the course longer, probably about 10 - 12 weeks.

More time.

Spinning   Nothing.
More time.

Weaving   More one on one.
Nothing, it's a good program.
For it to be longer.
More time.

Finally, a major objective and expected outcome of the WLS was to develop a workplace literacy system that could be replicated at any place and provide an immediate start-up of a workplace literacy program. The TEXTdisc package provides that system. All that is needed is a quiet place equipped with a CD-ROM equipped multi-media computer and the TEXTdisc package. A teacher/mentor is, of course, a very needed addition to help develop Individual Education Plans, provide counseling, provide special drill or training, etc. But the fact remains that the TEXTdisc is a stand-alone way to provide adults workplace literacy opportunities; this is especially true if they are employed in the textile or apparel industries.

TARGET DATE ACCOMPLISHMENT

The accomplishment of the objectives of the WLS-Phase II project followed the timetable established in the proposal. There were no significant delays and all objectives were met.

NUMBER AND CHARACTERISTICS OF PROGRAM PARTICIPANTS

As previously noted, there were 575 enrollments during WLS-Phase II. The course length for each enrollee was a ten-week quarter which coincided with the quarterly calendar of Forsyth Technical Community College. When combined with the 376 enrollments reported in WLS-Phase I, the total for the WLS program was 951. In addition at least a hundred additional adult workers used the TEXTdisc at other NWLP sites. The enrollment by quarters (six in all) for WLS-Phase II was as follows:

Enrollment by Curriculum - WLS-Phase II
by 10-week Quarters

Quarter	Curriculum			Totals	
	Job Enhancement	GED	Basic Skills	Head count	Instructional Hours
1	66	.18	52	136	1433
2	14	8	42	64	806
3	15	12	52	79	1531
4	14	11	50	75	1153
5	33	15	72	120	1682
6	38	13	50	101	1694
Total	180	77	318	575	8299

As has been previously reported, WLS offered both individual, computer-based, self-paced learning and group instruction opportunities. The Basic Skills curriculum was supported by the Computer Curriculum Corporation program. The GED curriculum was a group instruction program supported by computer-based individual learning. The Job Enhancement curriculum was a combination of group instruction using workplace contextual curriculum and computer-based learning using BASE and the TEXTdisc. During WLS-Phase II, 378 out of 575 adult learners chose to pursue a self-paced, computer-based learning program.

Characteristics of Workers Participating in WLS Project-Phase II
(N = 431)

Gender: Males 201   Females   230   Total 431

Mean age: 36 years

Race: White   264
          Black   155
          Hispanic   11
          Asian   1
                         431

Single Head of Household   220/431

In WLS-Phase II data collected on 431 of 575 participants showed that males/females were represented in nearly equal numbers. Sixty-one percent of participants were white, 36 percent black, and three percent Hispanic. The mean age of the 431 was 36 years and 51 percent were single heads of household.

Of the 431 participants 173 had been employed at the Stratford plant five or fewer years; 147 employed 6-10 years; 85 employed 11-15 years; and 26 employed 16 years or more.

DISSEMINATION ACTIVITIES

The Literacy Systems Center has established information networking with a number of agencies that disseminate information about our programs and the availability of materials. These include:

The N.C. Cooperative Extension Service which has over 1,000 professional staff located in all 100 North Carolina counties. These County Agents have regular newsletters, radio shows, columns in local newspapers, speaking engagements with a broad range of civic and business groups, and in many cases, TV spots or shows.

N.C. Commission on Workforce Preparedness is an arm of the Governor's Office. They maintain a State Literacy Resource Center and have agreed to distribute information for us and also share resources.

N.C. Small Business and Technology Development Center has agreed to distribute information while also working with us in helping to establish workplace literacy programs in small business firms.

N.C. Department of Community Colleges Adult Literacy Staff have been cooperators for years. They have disseminated information to the 58 community colleges in the state and frequently through their counterparts in other states as well.

N.C. Textile Manufacturers Association, Inc. is an industry trade association with 180 member organizations. NCTMA is helping disseminate information about the TEXTdisc package.

Presentations-Demonstrations

The Literacy Systems Center is requested to make presentations and courseware demonstrations on a regular basis. Each year we present at the Governor's Conference on Workplace Preparedness, the N.C. Adult Education Conference, the N.C. Department of Community Colleges Adult Literacy Conference, and various state and local TQM meetings. In addition, Interactive Knowledge Incorporated has been granted an exclusive license to market our copyrighted curriculum and courseware. They demonstrate this material at many locations around the country during the course of the year.

EVALUATION ACTIVITIES

The evaluation of WLS-Phase II has been an ongoing process. At the end of each quarter, participating workers were interviewed along with supervisors and workers who did not enroll. One of the things the interviewers try to discover is how the program is perceived; is it meeting the needs/expectations of workers? Is it meeting the needs/expectations of supervisors and managers? Are the instructors and project staff satisfied? Are advisory committee members able to see areas that need to be improved, etc.?

The information from these sessions allows for constant change. Providing workplace literacy programs is a dynamic process, influenced strongly by local environments, changes in the company, and change in the industry, etc.

Adult education methodology has to be greatly modified in a workplace setting. As providers gain experience in the workplace, they can find more effective ways to perfect the workplace learning environment. Evaluation as a continuing process for program improvement is vital. In a sense progress is measured by feedback. Evaluation of the TEXTdisc has begun, but to date that evaluation is more testimonial than we would like. The data for hard evidential evaluation is accumulating. Over the next year a concerted effort will be made to complete a quantitative evaluation of the transfer of information from the TEXTdisc program to the learner.

Finally, we have had an independent third-party evaluation of WLS-Part II. That evaluation has been made by Literacy South of Durham, N.C. A copy of their report is Part III of this performance report.

"The TEXTdisc" student pre / post-test information

GENERAL INFORMATION

Student:_____

Age:_____ Sex: _____ Race: _____

READING LEVEL INFORMATION

Pretest reading score [   ]   Date [   ]

Post-test reading score [   ]   Date [   ]

Name of test:_____

CONTENT KNOWLEDGE INFORMATION

Note the modules a student has completd.

HISTORY
_____ History of the Textile Industry

CLOTH UTILIZATION
_____ The Apparel Industry
_____ Cutting and Sewing: The Making of
         Garments
_____ Automotive Upholstery

THE TEXTILE PROCESS
_____ Preparing Cotton Fibers for Spinning
_____ Spinning of Wool and Cotton Yarn
_____ Knitting Fabric
_____ Weaving Fabric
_____ Fabric Finishing and Color Application

History of the Textile Industry:

PRETEST RESULTS (paper-based)

Date:_____

Part 1 score:_____   Part 2 score:_____   Part 3 score:_____

COURSWARE RESULTS (computer-based)

Step5, Activity 2   Step5, Activity 3   Step5, Activity 4
date:_____   date:_____   date:_____

score:_____   score:_____   score:_____

POST-TEST RESULTS (paper-based)

Date:_____

Part 1 score:_____   Part 2 score:_____   Part 3 score:_____

Spinning of Wool and Cotton Yarn:

PRETEST RESULTS (paper-based)

Date:_____

Part 1 score:_____   Part 2 score:_____   Part 3 score:_____

COURSWARE RESULTS (computer-based)

Step5, Activity 2
date:_____

Step5, Activity 3
date:_____

Step5, Activity 4
date:_____

score:_____

score:_____

score:_____

POST-TEST RESULTS (paper-based)

Date:_____

Part 1 score:_____   Part 2 score:_____   Part 3 score:_____

Preparing Cotton Fibers for Spinning:

PRETEST RESULTS (paper-based)

Date:_____

Part 1 score:_____   Part 2 score:_____   Part 3 score:_____

COURSWARE RESULTS (computer-based)

Step5, Activity 2
date:_____

Step5, Activity 3
date:_____

Step5, Activity 4
date:_____

score:_____

score:_____

score:_____

POST-TEST RESULTS (paper-based)

Date:_____

Part 1 score:_____   Part 2 score:_____   Part 3 score:_____

Knitting Fabric:

PRETEST RESULTS (paper-based)

Date:_____

Part 1 score:_____   Part 2 score:_____   Part 3 score:_____

COURSWARE RESULTS (computer-based)

Step5, Activity 2
date:_____

Step5, Activity 3
date:_____

Step5, Activity 4
date:_____

score:_____

score:_____

score:_____

POST-TEST RESULTS (paper-based)

Date:_____

Part 1 score:_____   Part 2 score:_____   Part 3 score:_____

Weaving Fabric:

PRETEST RESULTS (paper-based)

Date:_____

Part 1 score:_____   Part 2 score:_____   Part 3 score:_____

COURSWARE RESULTS (computer-based)

Step5, Activity 2
date:_____

Step5, Activity 3
date:_____

Step5, Activity 4
date:_____

score:_____   score:_____   score:_____

POST-TEST RESULTS (paper-based)

Date:_____

Part 1 score:_____   Part 2 score:_____   Part 3 score:_____

Fabric Finishing and Color Application:

PRETEST RESULTS (paper-based)

Date:_____

Part 1 score:_____   Part 2 score:_____   Part 3 score:_____

COURSWARE RESULTS (computer-based)

Step5, Activity 2
date:_____

Step5, Activity 3
date:_____

Step5, Activity 4
date:_____

score:_____   score:_____   score:_____

POST-TEST RESULTS (paper-based)

Date:_____

Part 1 score:_____   Part 2 score:_____   Part 3 score:_____

The Apparel Industry:

PRETEST RESULTS (paper-based)

Date:_____

Part 1 score:_____   Part 2 score:_____   Part 3 score:_____

COURSWARE RESULTS (computer-based)

Step5, Activity 2
date:_____

Step5, Activity 3
date:_____

Step5, Activity 4
date:_____

score:_____   score:_____   score:_____

POST-TEST RESULTS (paper-based)

Date:_____

Part 1 score:_____   Part 2 score:_____   Part 3 score:_____

Cutting and Sewing: The Making of Garments:

PRETEST RESULTS (paper-based)

Date:_____

Part 1 score:_____   Part 2 score:_____   Part 3 score:_____

COURSWARE RESULTS (computer-based)

Step5, Activity 2   Step5, Activity 3   Step5, Activity 4
date:_____   date:_____   date:_____

score:_____   score:_____   score:_____

POST-TEST RESULTS (paper-based)

Date:_____

Part 1 score:_____   Part 2 score:_____   Part 3 score:_____

Automotive Upholstery:

PRETEST RESULTS (paper-based)

Date:_____

Part 1 score:_____   Part 2 score:_____   Part 3 score:_____

COURSWARE RESULTS (computer-based)

Step5, Activity 2   Step5, Activity 3   Step5, Activity 4
date:_____   date:_____   date:_____

score:_____   score:_____   score:_____

POST-TEST RESULTS (paper-based)

Date:_____

Part 1 score:_____   Part 2 score:_____   Part 3 score:_____

What do you know about...
THE KNITTING OF FABRIC

This quiz will help us find out what you know about the of knitting fabric.

NAME:_____

DATE	PART 1 Score	PART 2 Score	PART 3 Score

PART 1 - *True or false questions:* *Read the statement and circle either "TRUE" or "FALSE". It is okay to skip a question if you are not sure of its answer.*

1. TRUE or FALSE In weft knitting, the yarn loops are formed across the width of the fabric.

2. TRUE or FALSE A warp knit fabric always has straight side edges and lies flat.

3. TRUE or FALSE Fabric has been made by knitting only since the 17th century.

4. TRUE or FALSE The most common weft knit stitch is the jersey knit.

5. TRUE or FALSE Yarn loops are formed going down the fabric weft knitting.

6. TRUE or FALSE Double-knit fabrics are formed by using two sets of needles.

7. TRUE or FALSE Machines for warp knitting look like weaving machines and are called knitting looms.

8. TRUE or FALSE Finished warp knit fabric is often in the shape of a tube.

9. TRUE or FALSE Warp knit fabrics are usually done on a circular machine.

10. TRUE or FALSE If the yarn loops are formed going down the length of the fabric, it is warp knit.

11. TRUE or FALSE Single-knit and double-knit are the most often used stitches in weft knitting.

12. TRUE or FALSE Milanese and simplex are the most common types of warp knit fabrics.

13. TRUE or FALSE Finished weft knit fabric may be in the shape of a tube.

14. TRUE or FALSE Tricot and raschel are the most common types of warp knit fabrics.

15. TRUE or FALSE Although most weft knitting is on a circular machine, some is done on a flat bed machine.

PART 2 - Fill-In-the-blank questions: *Read each sentence and find the word in the list that belongs in the blank. Then write that word in the blank. It is okay to skip a question if you are not sure of its answer.*

circular machine	crochet	flatbed machine
interloop	jersey knit	knitting loom
milanese	raschel	simplex
tricot	warp knitting	weft knitting

1. In knitting, fabric is formed by using needles to _____ yarn.

2. Yarn loops are formed across the width of the fabric in the method of knitting called _____.

3. Finished fabric in the shape of a tube is done on a _____.

4. Some, but not most, weft knitting is done on a _____.

5. A common kind of weft knit fabric is _____.

6. The method of knitting in which yarn loops are formed going down the length of fabric is _____

7. The machine used in warp knitting is called a _____.

8. The most common kinds of warp knit fabric are _____ and _____.

9. A fabric often used for lingerie because it is sheer and filmy is _____.

10. A type of warp knit fabric noted for its flexibility in design _____.

PART 3 - Multiple choice questions: *Read each question and circle the statement that answers the question. It is okay to skip a question if you are not sure of its answer.*

1. What is the difference in weft knit and warp knit fabric?
   a. Weft knits are formed by loops going across the width of the fabric and the loops in warp knits go the length of the fabric.
   b. Weft knits are formed by loops going the length of the fabric, while the loops in warp knits go across the width of the fabric.
   c. Weft knits are formed by interlooping yarns, while yarn is woven in and out to form warp knits.
   d. Weft knits are always made from cotton yarn and warp knits are always made from wool yarn.

2. On what kind of machine is weft knitting done.?
   a. A machine sometimes called a knitting loom is used.
   b. Circular machines are usually used, but it is sometimes done on a flatbed machine.
   c. Weft knitting must be done by hand a machine is not used.
   d. A weaving machine is used.

3. On what kind of machine is warp knitting done?
   a. Circular machines are usually used, but it is sometimes done on a flatbed machine.
   b. Warp knitting must be done by hand and a machine is not used.
   c. A weaving machine is used.
   d. A machine sometimes called a knitting loom is used.

4. What is a common kind of weft knit fabric?
   a. The tricot knit is the most common weft stitch.
   b. The raschel knit is the most common weft stitch.
   c. The plain or jersey knit is the most common weft stitch.
   d. The simplex knit is the most common weft stitch.

5. What are the most common kinds of warp knit fabrics?
   a. Raschel and tricot are the most common warp knits.
   b. Milanese and simplex are the most common warp knits.
   c. Tricot and jersey are the most common warp knits.
   d. Raschel and simplex knit are the most common warp knits.

The Knitting of Fabric

PART 1 - True / False

Answers	Scoring Info
1. True	1 incorrect: score = 93
2. True	2 incorrect: score = 87
3. **False**	3 incorrect: score = 80
4. True	4 incorrect: score = 73
5. **False**	5 incorrect: score = 67
6. True	6 incorrect: score = 60
7. True	7 incorrect: score = 53
8. **False**	8 incorrect: score = 47
9. **False**	9 incorrect: score = 40
10. True	10 incorrect: score = 33
11. **False**	11 incorrect: score = 27
12. **False**	12 incorrect: score = 20
13. True	13 incorrect: score = 13
14. True	14 incorrect: score = 7
15. True	15 incorrect: score = 0

PART 2 - Fill-in-the-blank

Answers	Scoring Info
1. interloop	1 incorrect: score = 90
2. weft knitting	2 incorrect: score = 80
3. circular machine	3 incorrect: score = 70
4. flatbed machine	4 incorrect: score = 60
5. jersey knit	5 incorrect: score = 50
6. warp knitting	6 incorrect: score = 40
7. knitting loom	7 incorrect: score = 30
8. tricot raschel	8 incorrect: score = 20
9. tricot	9 incorrect: score = 10
10. raschel	10 incorrect: score = 0

PART 3 - Multiple choice

Answers	Scoring Info
1. a	1 incorrect: score = 80
2. b	2 incorrect: score = 60
3. d	3 incorrect: score = 40
4. c	4 incorrect: score = 20
5. a	5 incorrect: score = 0

30

What do you know about...
WEAVING FABRIC

This quiz will help us find out what you know about weaving fabric.

NAME:_____

DATE	PART 1 Score	PART 2 Score	PART 3 Score

PART 1 - *True or false questions:* Read the statement and circle either "TRUE" or "FALSE". It is okay to skip a question if you are not sure of its answer.

1. TRUE or FALSE   Projectile weaving machines use a shuttle to place the filling yarn.

2. TRUE or FALSE   Woven fabric has been found in some of the oldest tombs discovered.

3. TRUE or FALSE   Weaving was first begun about 200 years ago.

4. TRUE or FALSE   By changing the interlacing pattern you can get different weaves.

5. TRUE or FALSE   A weave can be made to look different by changing the yarn or tightness.

6. TRUE or FALSE   The warp for (or lengthwise) yarn is held and released by the beam.

7. TRUE or FALSE   The most modern looms use a shuttle to place the filling yarn.

8. TRUE or FALSE   The twill weaves are always smooth and shiny on top.

9.   TRUE or FALSE   The filling (or crosswise) yarn is interlaced with the warp yarn

10. TRUE or FALSE   A beam grips the filling yarn and carries it across the ɹom.

11. TRUE or FALSE   Denim is an example of a fabric made by plain weave.

12. TRUE or FALSE   The filling yarn used to be placed by a shuttle.

13. TRUE or FALSE   Projectile, rapier, and jet weaving machines do not have a shuttle.

14. TRUE or FALSE   The three basic weaves are plain weave, twill weave, and satin weave.

15. TRUE or FALSE   The simplest and cheapest weave to produce is the plain weave.

PART 2 - Fill-in-the-blank questions: *Read each sentence and find the word in the list that belongs in the blank. Then write that word in the blank. It is okay to skip a question if you are not sure of its answer.*

beam	filling	interlaced
jet	pattern	plain
projectile	rapier	satin
shuttle	twill	warp

1. Different weaves are gotten by changing the _____ by which the yarn is interlaced.

2. Yarn going the length of the fabric is called the _____ yarn.

3. Yarn going across the fabric is called the _____ tastes.

4. A _____ was used to place the yarn on looms until recent years.

5. A small metal unit places the filling yarn in a _____weaving machine.

6. A jet of air or water place the filling yarn in a _____ weaving machine.

7. Metal arms carry and place the filling yarn in a _____ weaving machine.

8. The cheapest and simplest fabric to make is the _____ weave.

9. _____ weave fabrics are smooth and shiny on top.

10. Denim is an example of a _____ weave fabric.

PART 3 - Multiple choice questions: *Read each question and circle the statement that answers the question. It is okay to skip a question if you are not sure of its answer.*

1. What does a shuttle do on a loom?
   a. The shuttle holds the warp or lengthwise yarns.
   b. The shuttle lays the filling yarn with a jet of air.
   c. The shuttle interlaces the filling yarn with the warp.
   d. The shuttle places the filling yarn by using metal arms.

2. What are the main kinds of looms without a shuttle?
   a. Plain, twill, and satin weave are shuttleless looms.
   b. Projectile, jet, and rapier looms are shuttleless looms.
   c. All looms have a shuttle.
   d. The main shuttleless loom is a beam loom.

3. What weaves are the most common?
   a. The basic weaves are the plain, twill, and satin weaves.
   b. The most common weave is the warp.
   c. Weft is the most common weave.
   d. Rapier and projectile are the most basic weaves.

4. How can you make different kinds of fabric using the same weave?
   a. One weave produces a variety of fabrics by changing the tightness and type of yarn.
   b. By altering the pattern by which the yarns are interlaced, one weave can make different kinds of fabric.
   c. One weave produces a variety of fabrics by changing from shuttle to projectile.
   d. By altering the number of shuttles, one weave can make different kinds of fabric.

5. How is cloth formed by weaving?
   a. Projectiles and rapiers are interlaced with filling yarn and warp yarn.
   b. Knitting looms interloop weft yarns and warp yarns.
   c. Jet weaving looms lay filling yarn through the use of metal arms.
   d. Warp yarns and weft yarns are interlaced at right angles to each other.

Weaving Fabric

PART 1 - True / False

Answers	Scoring info
1. **False**	1 incorrect: score = 93
2. True	2 incorrect: score = 87
3. **False**	3 incorrect: score = 80
4. True	4 incorrect: score = 73
5. True	5 incorrect: score = 67
6. True	6 incorrect: score = 60
7. **False**	7 incorrect: score = 53
8. **False**	8 incorrect: score = 47
9. True	9 incorrect: score = 40
10. **False**	10 incorrect: score = 33
11. **False**	11 incorrect: score = 27
12. True	12 incorrect: score = 20
13. True	13 incorrect: score = 13
14. True	14 incorrect: score = 7
15. True	15 incorrect: score = 0

PART 2 - Fill-in-the-blank

Answers	Scoring info
1. pattern	1 incorrect: score = 90
2. warp	2 incorrect: score = 80
3. filling	3 incorrect: score = 70
4. shuttle	4 incorrect: score = 60
5. projectile	5 incorrect: score = 50
6. rapier	6 incorrect: score = 40
7. jet	7 incorrect: score = 30
8. plain	8 incorrect: score = 20
9. satin	9 incorrect: score = 10
10. twill	10 incorrect: score = 0

PART 3 - Multiple choice

Answers	Scoring info
1. c	1 incorrect: score = 80
2. b	2 incorrect: score = 60
3. a	3 incorrect: score = 40
4. a	4 incorrect: score = 20
5. d	5 incorrect: score = 0

Section II

TEXTdisc Version 2.0 curriculum and courseware.
A reading and math basic skills program for the textile and apparel workplace.

Available as a multimedia, interactive CD-ROM disc.

A Guide to Using The TEXTdisc

A workplace literacy program for the textile industry

The TEXTdisc

A Workplace Literacy Program for the Textile Industry

Version 2.0

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Produced and Developed by

Interactive Knowledge, Inc.

The Literacy Systems Center
North Carolina State University

Contents   A Guide to Using The TEXTdisc (version 2.0)

1. Learning about The TEXTdisc

This chapter contains information about:

☐ an overview of The TEXTdisc;

☐ the instructional focus of the reading and math sections of the courseware;

☐ how to view the demo program.

The goal of The TEXTdisc is to help the textile industry develop a workforce that can read at a ninth-grade level or above and that understands basic math concepts and how to apply them. Development of such a workforce will result in an employee base that is responsive to new training and is able to adapt to the changes that new technology brings to the textile industry.

The TEXTdisc is . . .

Multimedia courseware for the textile industry

The TEXTdisc is a CD-ROM disc containing multimedia workplace literacy courseware created especially for the textile industry. It is designed to help adults improve their reading, math, and critical thinking skills by using content relevant to the textile industry and its workforce.

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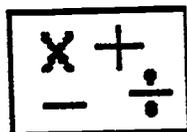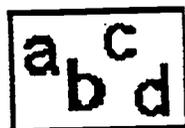
Basic reading and math instruction

The TEXTdisc CD contains over 60 hours of instruction and is divided into two sections, the Reading Section and the Math Section. The Reading Section is a series of nine reading modules designed to help adults improve their reading comprehension skills. The Math Section is a four-level math program that gives adults extensive practice applying math skills to everyday life and work situations. All of the activities on The TEXTdisc use textile industry content to provide instruction in reading and basic math. In both sections, the activities help employees develop the critical thinking skills necessary to perform their jobs more efficiently and to be better prepared for changes in the workplace.

Short, self-paced lessons and a management system

The TEXTdisc courseware is delivered in short, self-paced lessons that can be used independently or in conjunction with other basic skills instruction. A sophisticated management system ties the program together. It routes students to the appropriate activities and tracks scores and time-on-task information. The TEXTdisc is appropriate for any employee who is functioning at or above a fifth-grade reading level and has some knowledge of basic math.

A powerful tool for employees and management

The TEXTdisc is designed to give the learner control of the learning experience. This gives the employee a sense of empowerment and control over his job and future. The courseware gives employees an overview of the textile industry which helps the employee understand the textile process and where his job fits in. The TEXTdisc can help the textile industry raise the basic skill level of its workforce, thus making training more effective.

Instructional focus: reading and math

The TEXTdisc courseware combines current adult learning theory and multimedia strategies to deliver basic skills instruction to the textile industry. The TEXTdisc is made up of two sections, reading and math.

The reading section
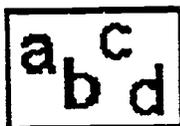
The reading section is...

The reading section is designed to help textile employees develop reading comprehension skills, increase their technical and non-technical vocabulary, and learn specific information about the textile industry. The reading section is made up of nine modules in three strands: (1) history, (2) the textile process, and (3) cloth utilization.

Reading section module topics

■ HISTORY
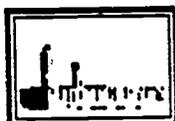
History of the Textile Industry

■ THE TEXTILE PROCESS

Preparing Cotton Fibers for Spinning

Spinning of Wool and Cotton Yarn

Knitting Fabric

Weaving Fabric

Fabric Finishing and Color Application

■ CLOTH UTILIZATION

The Apparel Industry

Cutting and Sewing: The Making of Garments

Automotive Upholstery

TD-20-93
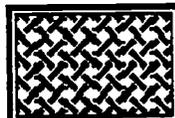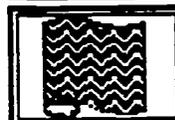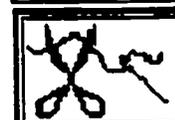
Instructional skills covered in the reading section

The modules in the reading section give adults practice with the following skills:

- establishing reading goals
- learning technical and non-technical vocabulary
- working with graphs
- finding main ideas
- organizing information
- scanning for information
- making first-level inferences
- summarizing information
- test-taking
- answering comprehension questions

These skills are taught in each module through a five-step reading process. In this process, the learner determines some reasons for reading an article on the topic and sets some reading goals. The learner then reads the article. When the learner understands the content and knows all the words in the article, he uses the article to master higher-level reading and information-seeking skills. As a learner works through the modules, his ability to use the skills becomes an automatic part of his normal reading process.

The five steps in The TEXTdisc reading process are:

Step 1 – Before you read the article

Step 2 – Reading the article

Step 3 – Understanding the article

Step 4 – Finding information in the article

Step 5 – After you read the article — what have you learned?

A step-by-step look at the instructional activities in the reading section

Each of the reading modules on The TEXTdisc follow the same instructional outline. Here is a brief description of the activities:

Step 1 – Before you read the article

ACTIVITY 1   Think about what you want to learn from the article

In this activity, the student sets a reading goal by selecting five questions that can be answered by reading the article. The learner's reading goal for the module is to find the answers to these questions.

Step 2 – Reading the article

ACTIVITY 1   Read the article

In this activity, the learner reads a four-paragraph article and can see and hear a definition of selected technical and non-technical words.

ACTIVITY 2   Learn about the vocabulary words

In this activity, the learner can review any of the vocabulary words from the article. The student can do vocabulary usage exercises with any of the these words, or review the words in the context of the article. Each module has 20 vocabulary words.

ACTIVITY 3   Take the vocabulary test

In this activity, the learner takes a cloze-style test on the vocabulary words from the article.

ACTIVITY 4   Learn from graphs

In this activity, the learner studies graphs about the subject and answers questions about the graphs (two graphs, six questions each)*.

* "Learn from graphs" activity is included in the History and Cloth Utilization modules only.

Step 3 – Understanding the article

ACTIVITY 1   Identify paragraph topics

In this activity, the learner determines the topic of each paragraph in the article.

ACTIVITY 2   Make an outline

In this activity, the 'r   atches details from the article to paragraph topics t   mple outline.

ACTIVITY 3   Identify ...   ... .o look for answers

In this activity, the learner determines which paragraph would most likely contain the answer to a question (eight questions).

Step 4 – Finding information in the article

Activity 1   Scan for words

In this activity, the learner is introduced to scanning. The student scans a paragraph from the article to find a given word. The student is given 15 seconds to find each word.

ACTIVITY 2   Scan for answers

In this activity, the learner picks the clue words in a question. (Clue words are important words in the question that help you locate the answer.) The learner scans for these words in the article to help find the answer (eight questions).

ACTIVITY 3   Scan for more answers (first level inference)

This activity has two parts. In part 1, the learner picks clue words in a question. These exact clue words are not found in the article. The learner then finds other words that could be used in place of the clue words. In part 2, the learner scans the article to find the answer to the questions (four questions).

Step 5 —After you read the article — what have you learned?

ACTIVITY 1   Summarize the article

In this activity, the learner sees and hears three people summarize the paragraphs from the article and picks the best summary for each paragraph. The student then writes his or her own summary of the article.

ACTIVITY 2   Answer true / false questions

In this activity, the learner answers true / false questions about the article (15 questions). The learner can access and refer to the article to find the answers.

ACTIVITY 3   Answer fill-in-the-blank questions

In this activity, the learner answers fill-in-the-blank type questions (15 questions). The learner can access and refer to the article to find the answers.

ACTIVITY 4   Answer questions from Step 1

In this activity, the learner answers the five questions from the reading goal for this module (determined in Step 1, Activity 1). The student can access and refer to the article to find the answers.

Here's how the reading section works:

A student is enrolled in the reading section and chooses any of the nine reading modules to study. The student should start the module with "Step 1, Activity 1" and work through to "Step 5, Activity 4." As lessons are completed, the computer management system records the student's scores, time-on-task, and status information. A student may repeat an activity as many times as he or she chooses.

The student should complete an activity within a learning session. If a student quits a reading activity in the middle, his score and time information are not recorded and he will be started at the beginning of the activity when he returns. Each activity takes around 20 minutes to complete. (NOTE: Although a quit/restart feature is available in the math section, it is not available in the reading section — many of the reading activities involve sequential exercises, and therefore restarting in the middle of an activity is not possible.)

To see for yourself how the reading section works, look at The TEXTdisc demo. For information on how to access the demo, see "The TEXTdisc demo" later in this section of the guidebook.

# The math section
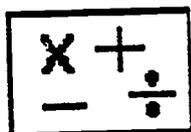
The math section is...

The math section of The TEXTdisc consists of 400 basic skill word problems that provide students practice in *applying known math skills* to everyday life situations. Solving the word problems requires the use of one or more previously learned computational skills. These skills include arithmetic of whole numbers, fractions, decimals, and percents.

The math section instructional outline

The word problems in the math section are divided into four Levels. Each Level is divided in several Programs; each Program concentrates on a specific skill and reviews all previously-covered skills. Here is an outline of the math section:

Level A	**Word problems with whole numbers (numbers and money)**
PROGRAM 1	Adding whole numbers – 10 problems
PROGRAM 2	Subtracting whole numbers – 15 problems (10 new skill, 5 review)
PROGRAM 3	Multiplying whole numbers – 15 problems (9 new skill, 6 review)
PROGRAM 4	Dividing whole numbers – 15 problems (9 new skill, 6 review)

Level B	**Word problems with fractions (proper fractions and mixed numbers)**
PROGRAM 1	Adding fractions – 20 problems (16 new skill, 4 review)
PROGRAM 2	Subtracting fractions – 26 problems (16 new skill, 10 review)
PROGRAM 3	Multiplying fractions – 28 problems (16 new skill, 12 review)
PROGRAM 4	Dividing fractions – 32 problems (16 new skill, 16 review)

5.62

Level C   Word problems with decimals

PROGRAM 1 Adding, subtracting, multiplying, dividing deci-
mals – 32 problems (16 new skill, 16 review)

PROGRAM 2 Rounding off decimals – 36 problems (16 new skill,
20 review)

PROGRAM 3 Changing fractions to decimals – 40 problems (10
new skill, 30 review)

42%

Level D   Word problems with percents

PROGRAM 1 Find part when percent and whole are known
(What is 10% of 50?) – 40 problems (20 new skill, 20
review)

PROGRAM 2 Find percent when part and whole are known
(What % of 50 is 5?) – 40 problems (20 new skill, 20
review)

PROGRAM 3 Find whole when percent and part are known (5 is
10% of what number?) – 42 problems (20 new skill
& 22 review)

Here's how the math section works:

Before a learner begins using the math section, he or she should take the Math Check to determine where to begin. An instructor administers the test and enrolls the student in the appropriate Program.

In the courseware, each Program is made up of two parts: introductory material and math skill application problems. The introductory material introduces the new skill and provides a few sample and practice problems (in number form). The major part of each Program is math skill application word problems. The problems require students to apply one or more known math skills to find a solution. The word problems cover the new skill and review the skills from all previous Programs. The problems in a Program are presented in mixed order, so that the student must determine which operation or operations (new or review skills) a problem requires.

When enrolled in a math Program, a student solves problems on paper and then uses the keyboard to enter the answer into the computer. A unique aspect of the program is the way the feedback is given for an incorrect answer. Each feedback response will give the student a hint to help solve the problem:

First incorrect try   After a student's first incorrect try, he can choose to hear the problem being read.

Second incorrect try   After a second incorrect try, the problem will be set up in number form for the student.
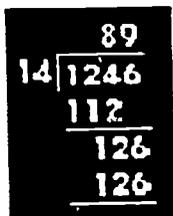
Third incorrect try   After the third try, the program will show the student how to solve the problem.

The math section's management program allows a student to work at his own pace. The student can quit a Program at any time and resume working at that spot when he starts the next learning session. The management system keeps track of students' responses and time-on-task. The instructor and student can view information such as the number of correct answers on first, second, or third try, for new skill problems and review skill problems. This information will help determine if a student is having trouble reading the word problem, setting up the problem, or performing the mathematical operation.

The Math Check

The Math Check is a four-part test covering all the math opera-
tions required by the word problems on The TEXTdisc. The
problems on the test are not word problems, but are set up in
number form. There is a separate test for each of the four Levels
in the math section (whole numbers, fractions, decimals, per-
cents). A reproducible master of the Math Check and an instruc-
tor key is included with this guide. Each test is made up of sets
of three problems; each set deals with a specific skill. Here is an
outline of the Math Check:

Level A Test   Whole numbers (30 problems)
SET 1   Addition of whole numbers
SET 2   Addition of money
SET 3   Subtraction of whole numbers
SET 4   Subtraction of money
SET 5   Multiplication of whole numbers
SET 6   Multiplication of money
SET 7   Division of whole numbers (without remainders)
SET 8   Division of whole numbers (with remainders)
SET 9   Division of money
SET 10   Finding an average

Level B Test   Fractions (24 problems)
SET 1   Addition of fractions (proper fractions)
SET 2   Addition of fractions (mixed numbers)
SET 3   Subtraction of fractions (proper fractions)
SET 4   Subtraction of fractions (mixed numbers)
SET 5   Multiplication of fractions (proper fractions)
SET 6   Multiplication of fractions (mixed numbers) .
SET 7   Division of fractions (proper fractions)
SET 8   Division of fractions (mixed numbers)

Level C Test   Decimals (24 problems)
SET 1   Addition of decimals
SET 2   Subtraction of decimals
SET 3   Multiplication of decimals
SET 4   Division of decimals
SET 5   Rounding off decimals to nearest tenth
SET 6   Rounding off decimals to nearest hundredth
SET 7   Rounding off decimals to nearest thousandth
SET 8   Changing fractions to decimals

Level D Test   Percents (9 problems)
SET 1   Find part when whole and percent are known
SET 2   Find percent when whole and part are known
SET 3   Find whole when percent and part are known

Scoring the Math Check

An instructor uses the Instructor Key to score the Math Check. On the student's test, a score box is provided at the right end of the title bar for each set of problems. In this box, the instructor places the number of *incorrect* answers for that set.

- A student "passes" a Level of the Math Check if he or she does not miss more than one problem in any set in that Level.

- If a student misses more than one problem in any set, he or she should receive additional instruction on the skills tested.

A student should begin testing with Math Check for Level A – Whole Numbers. If he passes this, he should take the Level B test. If the student does not pass Level A, he should begin receiving additional instruction in whole numbers. The same pattern would follow with the Level B test, Level C test, and Level D test.

A student can begin using the Math Section of The TEXTdisc when he has passed the Level A Math Check. He can go on to Level B if he has passed the Math Check for Level B, and so on for Levels C and D.

The TEXTdisc demo

The TEXTdisc demo program provides an overview of the courseware. It contains samples of all the activities from the reading and math sections of The TEXTdisc. Viewing the demo is an excellent way to for instructors, tutors, or administrators to learn about the scope and sequence of the courseware.

Before you view the demo program (or the courseware), you must install some special fonts into Windows. These fonts are found in a subdirectory on the CD called FONTS. To install these fonts, follow the directions for "Installing special fonts" on page 2.3 of this guide. (These fonts must be installed before you view the demo program or run the courseware.)

To view the demo, follow the steps below:

1. Start Windows.
2. From the Windows Program Manager, choose RUN from the FILE pull-down menu. The RUN dialog box appears.
3. In the Command Line field type the following:

   d:\demo\tddemo1

   Then click OK. This will start the demo.

   NOTE: If your CD-ROM drive is a drive other than D, substitute the appropriate letter in the above command.
4. Follow the on-screen directions to view the demo.

2. Setting up the hardware and software

This section contains information about:

☐ hardware and software requirements;

☐ setting up The TEXTdisc software,

- installing special fonts,

- installing startup and management programs on your hard drive,

- setting up the program to start from DOS or Windows.

Hardware and software requirements
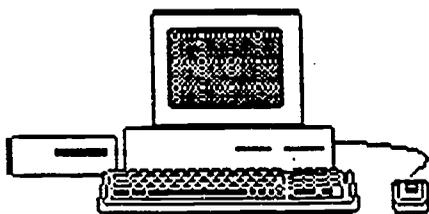
To run The TEXTdisc, you need an IBM-compatible computer with:

■ hard drive

■ 386 processor (or greater)

■ 2 MB memory minimum (performance greatly increases with 3 MB, 4 MB, or greater)

■ color monitor (256 colors needed to see full-color photographs)

■ CD-ROM drive

■ mouse

■ Windows 3.1 — or Windows 3.0 with multimedia extensions

■ audio card that is Windows-compatible (supports Microsoft's Multimedia Extensions)

■ headphones with volume control (suggested)

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Setting up The TEXTdisc software

Assumptions   Before you get started, you should:

1. Make sure your computer (with Windows) and CD-ROM drive are operating properly.

2. Make sure the sound driver for your audio card has been loaded into Windows. (Refer to the documentation that came with your audio card for more information.)

3. Know how to perform basic DOS and Windows operations (ie: making sub-directories, copying files from the CD to your hard drive).

4. Have the Windows directory included in your path statement. (To verify that the Windows directory is included in your path statement: From a DOS prompt, type PATH and press enter. This will display your path statement. You should see the Windows directory somewhere in the list that follows the "PATH=" statement. It should look something like this: PATH=C:\;C:\DOS;C:\WINDOWS;   )

5. Know the drive letter of your CD-ROM drive. These directions assume that your CD-ROM drive is designated as "D" and your hard drive is designated as "C." If your CD-ROM is not drive D or your hard drive is not C, substitute the appropriate letters in the commands given in this section.

Before you start the installation process, power up your CD-ROM drive and computer, and insert The TEXTdisc CD into your CD-ROM drive.

To set up your computer to run The TEXTdisc you need to do three things:

1. Install special fonts into Windows.

2. Install startup and management software onto your hard drive.

3. Set up the courseware to start from DOS and/or Windows.

1. Installing special fonts

The TEXTdisc CD contains some special fonts that do not come with Windows. Before using The TEXTdisc, you must install these fonts into Windows. To install the fonts in Windows:

1. Insert The TEXTdisc CD into the CD-ROM drive.

2. From the Windows Program Manager, open the Main window. In the Main window, double-click on Control Panel, then double-click on Fonts.

3. Click on the Add button to begin the process of adding fonts. Find and display the fonts to be added by accessing the correct drive and directory — the eight fonts you need to add are located on The TEXTdisc CD in a directory called FONTS. (In most cases, the CD is designated as drive D.)

4. Select all 8 fonts and then click OK to install the fonts in Windows.

5. Check to be sure the fonts were loaded properly by scrolling through the list of Installed fonts. You should see seven fonts with names that begin with "Mac" (for example, "Mac Geneva") and another font called "Helv."

These fonts *must* be loaded properly into Windows before you use The TEXTdisc.

NOTE: For more information on adding fonts, see "Adding and Removing Fonts" in the Control Panel section of your Windows User's Guide.

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2. Installing management programs on your hard drive

For optimal performance, copy The TEXTdisc startup and management programs from the CD to your hard drive. To copy the management programs to your hard drive:

1. On your hard drive, create a subdirectory called TEXTGO off the root directory.

   To do this, type the following commands from a C> prompt:

   cd   (Enter)

   md textgo   (Enter)

2. Insert The TEXTdisc CD into the CD-ROM drive. Then copy the five programs from the TEXTGO subdirectory on the CD into the TEXTGO sub-directory on your hard drive by typing:

   copy d:\textgo*.* c:\textgo*.*   (Enter)

   You sould see five files being copied to your hard drive.

NOTE: If your hard drive is a drive other than C or if your CD-ROM drive is a drive other than D, substitute the correct letters in the steps above.

3. Choosing how to start The TEXTdisc

There are two ways to start The TEXTdisc: from DOS and from Windows. Both methods require a few setup steps.

If you plan to start The TEXTdisc from DOS, follow the steps outlined below. If you plan to start from Windows, follow the steps on page 2.6.

The DOS method

The DOS method of starting the courseware will allow you to type a command at a DOS prompt and automatically start Windows and The TEXTdisc software.

To set up your computer to start the courseware from DOS, you need to copy a file from the CD to your hard drive. To do this:

1. Insert The TEXTdisc CD into your CD-ROM drive.

2. Copy the file TD.BAT from the EXTRAS subdirectory on the CD into the Windows subdirectory on your hard drive by typing the following at a DOS prompt:

    copy d:\extras\td.bat c:\windows (Enter)

    NOTE: If your hard drive is a drive other than C or if your CD-ROM drive is a drive other than D, substitute the correct letters in the command above.

To start the courseware from DOS, type **TD** from a DOS prompt on your hard drive and press enter. This will open Windows and automatically start the courseware.

First time startup   When you start the courseware for the first time, you will go to The TEXTdisc Hardware Setup program. This program will prompt you to enter the drive letter of your CD-ROM drive (usually D), and the drive letter where you wish to have student records stored (usually C). This information will be stored in a subdirectory on your hard drive called TEXTSAVE.

The Windows Method

With the Windows method of starting the courseware, The TEXTdisc software is started by clicking on a startup icon inside the Windows program.

Windows **To set up the courseware** to start from Windows you need to make a startup icon. To do this:

1. Start Windows.

2. Make a window for the startup icon on the Windows desktop. To do this:

    a. From the Windows Program Manager, choose NEW from the FILE pull-down menu ·

    b. Select the Program Group option   (click OK)

    c. In the description field, type:

       The TEXTdisc (v 2.0)   (click OK)

3. Make a startup icon inside The TEXTdisc (v 2.0) window. To do this:

    a. With The TEXTdisc (v 2.0) window open, choose NEW from the FILE pull-down menu

    b. Select the Program Item option   (click OK)

    c. In the description field, type "TEXTdisc Startup"

    d. In the Command Line field, type the following:

       c:\textgo\startup   (Enter)

       NOTE: If you installed your management programs on a drive other than C, substitute the appropriate letter.

To start the courseware from Windows:

1. From the Windows desktop, open "The TEXTdisc (v 2.0)" window.

2. Double-click on the "TEXTdisc Startup" icon. This will start the courseware.

First time startup   When you start the courseware for the first time, you will go to The TEXTdisc Hardware Setup program. This program will prompt you to enter the drive letter of your CD-ROM drive (usually D), and the drive letter where you wish to have student records stored (usually C). This information will be stored in a subdirectory on your hard drive called TEXTSAVE.

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3. Using The TEXTdisc with students

This chapter contains information about:

☐ starting the courseware from DOS or Windows;

☐ the student management system for reading and math.

Starting the courseware

There are two ways to start The TEXTdisc: (1) from DOS, or (2) from Windows. Both of these methods require several setup steps that must be done before you can run the courseware. (See Section 2 for installation and setup instructions.) Follow the startup method below that corresponds to the startup method you chose in Section 2.

Starting the courseware from DOS

Assumption   The following directions for starting the courseware assume you have followed "The DOS method" setup directions in Section 2 of this guide.

To start The TEXTdisc from DOS:

1. Power up your CD-ROM drive and computer.

2. Insert The TEXTdisc CD in your CD-ROM drive.

3. From the DOS prompt, type **TD** (press Enter).

This will start Windows and The TEXTdisc student management system, and will take you to the "Title" screen.

First time startup   When you start the program for the first time, you will go to The TEXTdisc Hardware Setup program. This program will prompt you to enter the drive letter of your CD-ROM drive (usually D) and the letter of the drive where you wish to have student records stored (usually C).

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Starting the courseware from Windows

Assumption   The following directions for starting the courseware assume you have followed "The Windows method" setup directions in Section 2 of this guide.

To start The TEXTdisc from Windows:

1. Power up your CD-ROM drive and computer.
2. Insert The TEXTdisc CD in your CD-ROM drive.
3. Start Windows.
4. From the Windows Program Manager, open "The TEXTdisc (v 2.0)" window.
5. Double-click on the "TEXTdisc Startup" icon.

This will start the student management system and take you to the "Title" screen.

First time startup   When you start the program for the first time, you will go to The TEXTdisc Hardware Setup program. This program will prompt you to enter the drive letter of your CD-ROM drive (usually D) and the letter of the drive where you wish to have student records stored (usually C).

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The student management system

The TEXTdisc courseware is made up of a reading section (nine modules) and a math section (four Levels) that are tied together by a powerful student management system. The student management system allows you to enroll new students in a section, start continuing students in the proper activities, display a roster of students enrolled in a section, and display data about each student's progress.

When you start The TEXTdisc, you go directly into the student management system. The first screen you will see is the "Title" screen.

The "Title" screen

The "Title" screen displays the name and version of the courseware. From the "Title" screen you can click the mouse or press any key to go to the "Choose a Section" screen.

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The "Choose a Section" screen

On the "Choose a Section" screen, you can:

■ Start the reading section of the courseware.

■ Start the math section of the courseware.

■ Run The TEXTdisc Overview.

■ Quit the program.

To start the reading or math sections, click in the appropriate box. For information on the student management functions in the reading section, see "The student management system: the reading section" on page 3.6. For information on the student management functions in the math section, see "The student management system: the math section" on page 3.14.

To start The TEXTdisc Overview, click in the overview box. If a student is using The TEXTdisc for the first time, it is strongly suggested that he or she first go through the overview. "The TEXTdisc Overview" provides information on how to use the computer (including the mouse) and an introduction to the courseware.

From the "Choose a Section" screen, you can click on the stop sign to quit the program. This will give you two options: (1) quit to Windows, or (2) shut down, which exits to DOS.
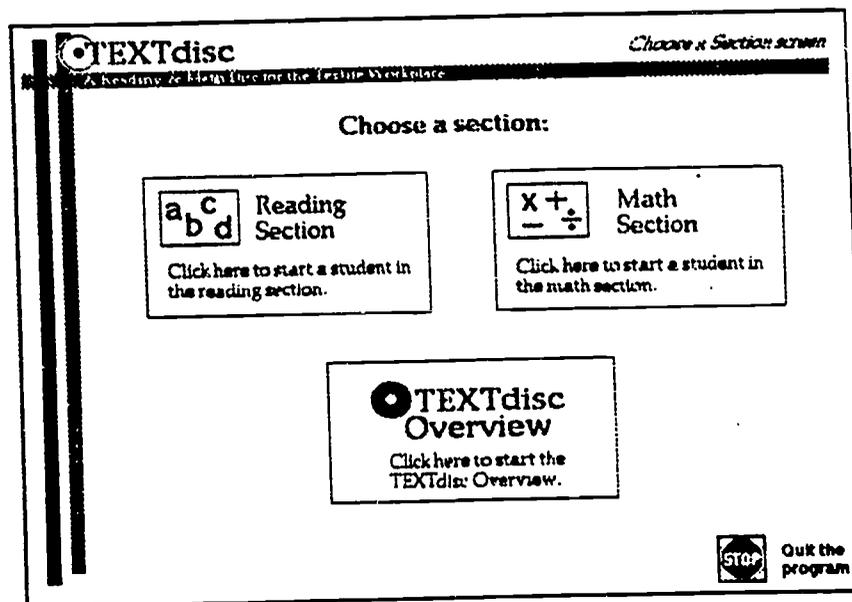
The student management system: the reading section
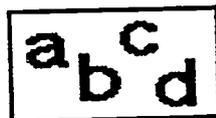
Click on the reading section icon on the "Choose a Section" screen to go to the "Start or Enroll a Student" screen for the reading section.

The reading "Start or Enroll a Student" screen

On the reading "Start or Enroll a Student"screen you can:

■ Enroll a new student in the reading section.

■ Start an enrolled student in reading.

■ View a roster of students enrolled in the reading section.

■ Return to the "Choose a Section"screen.

■ Quit.

Before a student can begin using the reading courseware, he must be enrolled. When a student is enrolled, his name is added to the Reading Student Roster and a student information file is created. Once a student is enrolled, he can start using the reading program.

TEXTdisc - Reading   *Start or Enroll a Student screen*
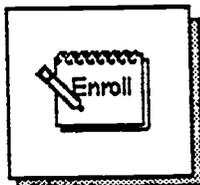
START AN ENROLLED STUDENT - Reading
Click here to start a student already enrolled in Reading.

ENROLL A NEW STUDENT - Reading
Click here to enroll a new student in Reading.

See Reading roster

Go to: *Choose a Section screen*

Quit the program

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The reading "Enroll a new student" option

To enroll a new student, click·in the "enroll a new student" box on the "Start or Enroll a Student screen". This will begin the enrolling process. Follow the on-screen directions to enter the student's name (first and last) and a sign-on name.

A sign-on name is a unique identifier for each student and provides a security system for the student's progress information. After a student is enrolled in the reading section, he will use his sign-on name to start the courseware. When a student starts the reading section with his sign-on name, he can gain access to his own records — but he cannot see the records of any other student.

The sign-on name can be a word, code, or number that consists of eight characters or less. The characters may be letters and/or numbers, but *cannot* include spaces or symbols (such as !, ?, *, etc.).

After the new student's name and sign-on name are typed in and verified, the student is enrolled. At this point you have a choice: you can start this student in the courseware or enroll another student. If you choose to start the student in the courseware, you will go to the "Choose a Module" screen.

The reading "Start an enrolled student" option

To start an enrolled student, click on the "start an enrolled student" box on the "Start or Enroll a student" screen. Then follow the on-screen directions to enter the student's sign-on name. This will take you to the "Choose a Module" screen.

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The "See Reading roster" option

From any of the enrolling or starting screens in the reading section of the student management system, an instructor can choose to display a roster of all students enrolled in the reading section. The "Reading Student Roster" screen lists the following information for each student enrolled in the reading section:

■ The student's sign-on name.

■ The student's first and last name.

■ The date the student was enrolled in the reading section.

■ The last date the student worked in the reading section.

To display the Reading Student Roster, click on the "See Reading roster" icon on the "Start or Enroll a student" screen, then type the instructor code and press Enter.

To see the student roster for Reading, type the instructor code and press return

EXIT

The instructor code is
CORRECT

The use of the instructor code guards against students gaining access to other students' progress information.

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On the "Reading Student Roster" screen there are "buttons" at the bottom of the screen that allow you to:

■ Exit and return to the "Start or Enroll a Student" screen.

■ Print the screen.

■ Delete a student from the roster. (See "Deleting student records" in Section 4 of this guide for detailed information on deleting a student from the roster and deleting records from the computer.)

■ Move to the next or previous page (if your roster has more than one page of students).

TEXTdisc - Reading Student Roster Total Reading students = 17
Date. 12/2/92

Sign-on name	Student Name	Date started	Date last worked
mike	MICHAEL SUMMERS	9/4/92	11/10/92
emilio	EMILIO RODRIGUEZ	8/4/92	11/15/92
41857	LUTHER MCCLAIN	9/10/92	10/15/92
skinny	RONNIE DELAP	9/12/92	10/21/92
mle	MARY LYNN EWING	9/12/92	9/18/92
051283	CHARLES LENT JR	9/13/92	11/20/92
vera	VERA MOSELY	9/28/92	9/30/92
nh	N H BARTON	9/25/92	11/30/92
122355	JOHN LIGHTFEATHER	10/1/92	11/21/92
cool	TERRY PRENTESE	10/5/92	11/20/92
wanda	WANDA LOWMAN	10/6/92	11/28/92
54323	CHI KEE WONG	11/6/92	11/21/92
gw	GREG WOJTOWICZ	10/7/92	11/21/92
lenora	LENORA GARRISON	10/8/92	10/30/92
cary	CARY LAWHAORN	10/12/92	11/12/92
al	ALICE CLYBURN	10/13/92	11/27/92
lulu	LAURA NORTON-BYERS	10/18/92	11/30/92

[Exit Roster] [Print Screen]   Page 1 of 1   [Delete Student]

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The "Choose a Module" screen

The TEXTdisc (v 2.0) reading section contains nine reading modules. Each of these modules contains activities that help learners increase reading skills and gain information about the module topic.

On the "Choose a Module" screen you can:

■ Select a module for the student to study.

■ Quit the courseware.

To choose a module, click on a module icon on the "Choose a Module" screen. This will take you to the "Choose a Step" screen for that module.

TEXTdisc - Choose a Module screen

Click on a reading module for Larry Weber to study

	History of the Textile Industry		Using Textiles
	The Textile Process		The Apparel Industry
	Preparing Cotton Fibers for Spinning		Cutting and Sewing
	Spinning of Wool and Cotton Yarn		Automotive Upholstery
	Knitting Fabric		
	Weaving Fabric		
	Fabric Finishing and Color Application		Quit the program

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The "Choose a Step" screen

The TEXTdisc divides the reading process into five steps. Each of the steps contains activities to help the student understand that part of the reading process.

On the "Choose a Step" screen you can:

■ Select a reading step for the student to study.

■ See the current student's progress records.

■ Return to the "Choose a Module" screen.

■ Quit.

To choose a step, click on a step icon. This will take you to the "Choose an Activity" screen for that step.

On this screen, the word "DONE" appears beside the steps a student has completed, and "IN PROGRESS" appears beside any step in which a student completed some (but not all) activities.

TEXTdisc - Choose a Step screen

History of the Textile Industry
Student: Larry Weber

Click on a Reading Step.

DONE — Step 1 - Before you read the article

DONE — Step 2 - Reading the article

IN PROGRESS — Step 3 - Understanding the article

Step 4 - Finding information in the article

Step 5 - After you read the article - What have you learned?

Show Larry's records

Go to: *Choose a Module screen*

Quit the program

The "Choose an Activity" screen

On the "Choose an Activity" screen you can:

■ Select an activity for the student to begin.

■ See the current student's progress records.

■ Return to the "Choose a Step" screen.

■ Quit.

To choose an activity, click on an activity box. This will take you to the first screen of that activity.

On this screen, the word "DONE" appears beside the activities a student has completed.


```
TEXTdisc - Choose an Activity screen

         History of the Textile Industry
         Student: Larry Weber

         Click on an activity.
         Step 3 - Understanding the article

DONE     [?]   Activity 1 - Identify paragraph topics

DONE     [?]   Activity 2 - Make an outline

         [?]   Activity 3 - Identify where to look for answers

[  ] Show           [+]  Go to: Choose    [STOP]  Quit the
     Larry's             a Step                   program
     records             screen
```

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TD-2.0-93
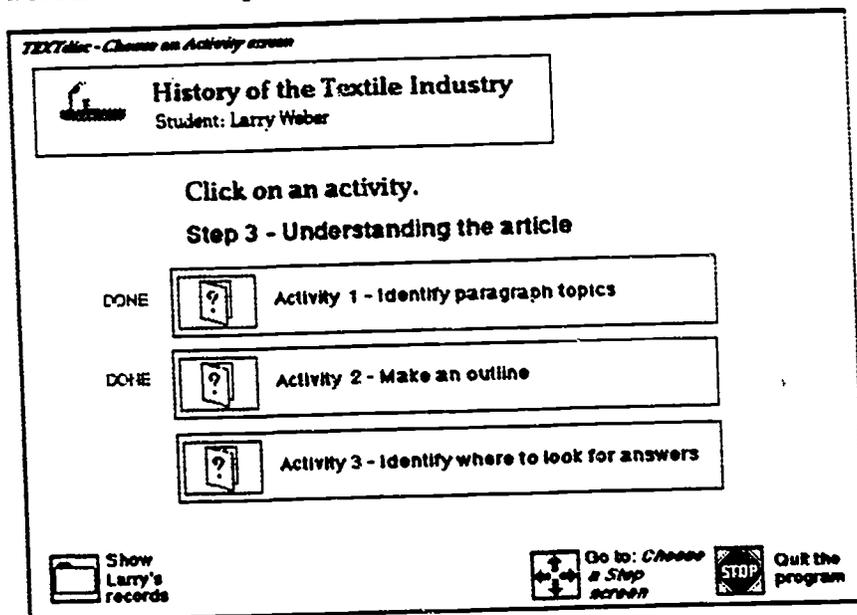
The "Show records" option

From the "Choose a Step" screen or the "Choose an Activity" screen, an instructor or student can click on the "Show records" icon to display data about the student's progress in the reading section.

On the records screen you can see the following information for the current student:

■ Total amount of time the student has spent in the module.

■ Most recent score for each activity the student has completed.

■ Amount of time the student spent in each activity.

■ Date the student completed each activity.

There are two "buttons" at the bottom of the screen that allow you to:

■ Exit the records screen.

■ Print the screen.

TEXTdisc - Reading

Scores for Larry Weber
Module: "History of the Textile Industry"

Total time (in the module) ≈ 2 hr 8 min

	Score	Time	Date	Status
Step 1 - Before you read the article				
1 - Think about what you want to learn	*	12 min	2/7/93	DONE
Step 2 - Reading the article				
1 - Read the article	*	26 min	2/7/93	DONE
2 - Learn about the vocabulary words	*	35 min	2/14/93	DONE
3 - Take the vocabulary test	80%	18 min	2/17/93	DONE
4 - Learn from graphs	75%	25 min	2/17/93	DONE
Step 3 - Understanding the article				
1 - Identify paragraph topics	100%	10 min	2/22/93	DONE
2 - Make an outline	90%	14 min	2/22/93	DONE
3 - Identify where to look for answers				
Step 4 - Finding information in the article				
1 - Scan for words				
2 - Scan for answers				
3 - Scan for more answers				
Step 5 - Understanding the article				
1 - Summarize the article				
2 - Answer true/false questions				
3 - Answer fill-in-the-blank questions				
4 - Answer questions from Step 1				

[Exit Roster] [Print Screen]

All scores reflect percentage of correct responses ON FIRST TRY.
Activities with an asterisk (*) in the score column are NOT SCORED.

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The student management system: the math section

Click on the math section icon on the "Choose a Section" screen to go to the "Start or Enroll a Student" screen for the math section.

The math "Start or Enroll a Student" screen

On the math "Start or Enroll a Student" screen you can:

■ Enroll a new student in the math section.

■ Start an enrolled student in the math section.

■ View a roster of students enrolled in the math section.

■ Return to the "Choose a Section" screen.

■ Quit.

Before a student can begin using the math courseware, he must be enrolled. When a student is enrolled, his name is added to the Math Student Roster and a student information file is created. Once a student is enrolled, he can start using the math program.

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TD-20-83
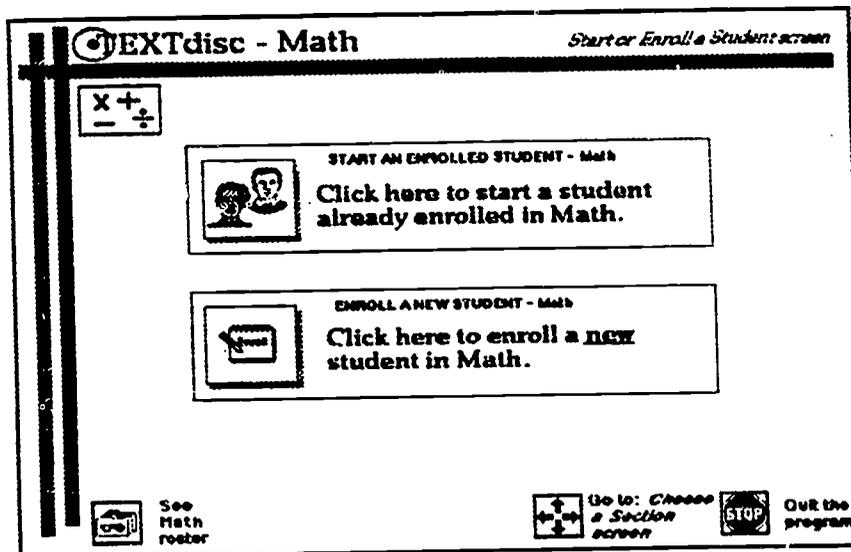
The math "Enroll a new student" option
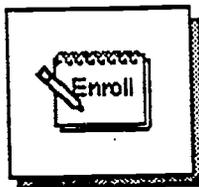
To enroll a new student: click in the "enroll a new student" box on the "Start or Enroll a Student" screen. This will begin the enrolling process. Follow the on-screen directions to enter the student's name (first and last) and a sign-on name.

A **sign-on name** is a unique identifier for each student and provides a security system for the student's progress information. After a student is enrolled in the math section, he will use his sign-on name to start the courseware. When a student starts the math section with his sign-on name, he can gain access to his own records — but he cannot see the records of any other student.

The sign-on name can be a word, code, or number that consists of eight characters or less. The characters may be letters and/or numbers, but cannot include spaces or symbols (such as !, ?, *, etc.).

After the new student's name and sign-on name are typed in and verified, the student is enrolled. At this point you have a choice, you can:

- start this student in the courseware or,
- enroll another student.

If you choose to start the student in the courseware, you will go to the "Choose a Level" screen.

The math "Start an enrolled student" option

To start an enrolled student, click on the "start an enrolled student" box on the "Start or Enroll a Student" screen. Then follow the on-screen directions to enter the student's sign-on name. This will take you to the "Choose a Level" screen.

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The "See Math roster" option

From any of the enrolling or starting screens in the math section of the student management system, an instructor can choose to display a roster of all students enrolled in the math section. The "Math Student Roster" screen lists the following information for each student enrolled in the math section:

- The student's sign-on name.

- The student's first and last name.

- The date the student was enrolled in the math section.

- The last date the student worked in the math section.

- The last Level and Program the student worked on.

To see the student roster for Math, type the instructor code and press return

EXIT

To display the Math Student Roster, click on the "See Math roster" icon on the "Start or Enroll a Student" screen, then type the instructor code and press enter.

The instructor code is
CORRECT

The use of the instructor code guards against students gaining access to other students' progress information.

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On the "Math Student Roster" screen there are "buttons" at the bottom of the screen that allow you to:

- Exit and return to the "Start or Enroll a Student" screen.

- Print the screen.

- Delete a student from the Roster. (See "Deleting student records" in Section 4 of this guide for detailed information on deleting a student from the roster and deleting records from the computer.)

TEXTdisc - Math Student Roster   Total Math students = 17
                                   Date: 12/2/92

Sign-on name	Student Name	Date started	Date last worked	Program last worked on
mike	MICHAEL SUMMERS	9/4/92	11/18/92	C3
emilio	EMILIO RODGRIUEZ	9/4/92	11/15/92	A2
41857	LUTHER MCCLAIN	9/10/92	10/15/92	B2
stinny	RONNIE DELAP	9/12/92	10/21/92	C3
mle	MARY LYNN EWING	9/12/92	9/18/92	B4
051263	CHARLES LENT JR.	9/13/92	11/20/92	D1
vera	VERA MOSELY	9/28/92	9/30/92	A3
nh	N H BARTON	9/25/92	11/30/92	B1
122355	JOHN LIGHTFEATHER	10/1/92	11/21/92	B2
cool	TERRY PRENTESE	10/5/92	11/20/92	C3
wanda	WANDA LOWMAN	10/6/92	11/28/92	C1
64323	CHI KEE WONG	11/6/92	11/21/92	A2
gw	GREG WOJTOWICZ	10/7/92	11/21/92	C2
lenora	LENORA GARRISON	10/8/92	10/30/92	B1
cary	CARY LAWHAORN	10/12/92	11/12/92	B2
al	ALICE CLYBURN	10/13/92	11/27/92	C1
lulu	LAURA NORTON-BYERS	10/18/92	11/30/92	C2

[Exit Roster] [Print Screen]   Page 1 of 1   [Delete Student]

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The "Choose a Level" screen

The math section of The TEXTdisc is made up of four Levels of math word problems: Level A, Whole Numbers; Level B, Fractions; Level C, Decimals; and Level D, Percents.

On the "Choose a Level" screen you can:

■ Select Level A, B, C, or D for a student to study.

■ See the current student's progress records.

■ Quit.

On the "Choose a Level" screen a student chooses a math skill Level. The results of the Math Check can help determine in which Level a student should begin. (See page 1.11, The Math Check, for more information.)

To choose a Level, click in a Level box on the "Choose a Level" screen. This will take you to the "Choose a Program" screen for that Level.

TEXTdisc - Math   Choose a Level screen

Click on a Level for LARRY WEBER to study

LEVEL **A** *Whole numbers*

LEVEL **B** *Fractions*

LEVEL **C** *Decimals*

LEVEL **D** *Percents*

Show Larry's records

Quit the program

74
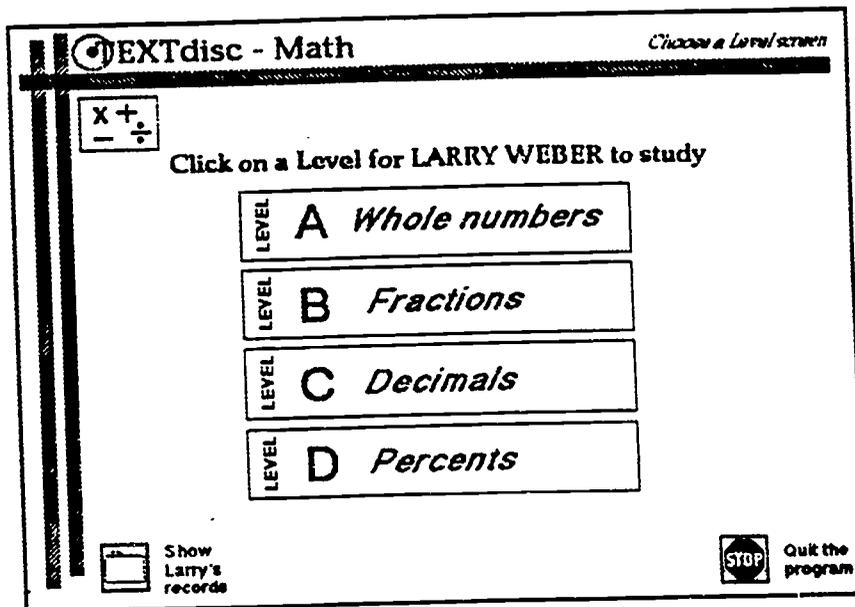
The "Choose a Program" screen

Each Program in a math Level targets a specific skill (for example, adding whole numbers). In each Program, the targeted skill is reviewed and then the student works word problems which require the application of the targeted skill and previously covered skills.

On the "Choose a Program" screen you can:

■ Select a math Program for a student to begin.

■ See the current student's progress records.

■ Quit.

The "Choose a Program" screen displays the current student's status for each Program the student has attempted (DONE or IN PROGRESS).

When you click on a Program box on the "Choose a Program" screen, this will start the Program's activities.

```
┌─────────────────────────────────────────────────────────┐
│ ⊙TEXTdisc - Math                    Choose a Program screen│
│                                                           │
│  ┌────┐ ┌───┐                                             │
│  │x +.│ │ A │                                             │
│  │─ ÷ │ │   │                                             │
│  └────┘ └───┘                                             │
│              Click on a Program for LARRY WEBER           │
│                                                           │
│  DONE    ┌──────────────────────────────────────────┐    │
│          │ Program 1:  Adding whole numbers          │    │
│          └──────────────────────────────────────────┘    │
│                                                           │
│  DONE    ┌──────────────────────────────────────────┐    │
│          │ Program 2:  Subtracting whole numbers     │    │
│          └──────────────────────────────────────────┘    │
│                                                           │
│  IN PROGRESS ┌──────────────────────────────────────┐    │
│          │ Program 3:  Multiply whole numbers        │    │
│          └──────────────────────────────────────────┘    │
│                                                           │
│          ┌──────────────────────────────────────────┐    │
│          │ Program 4:  Dividing whole numbers        │    │
│          └──────────────────────────────────────────┘    │
│                                                           │
│   Show                        Go to: Choose         Quit the│
│   Larry's                     a Level        STOP   program │
│   records                     screen                      │
└─────────────────────────────────────────────────────────┘
```

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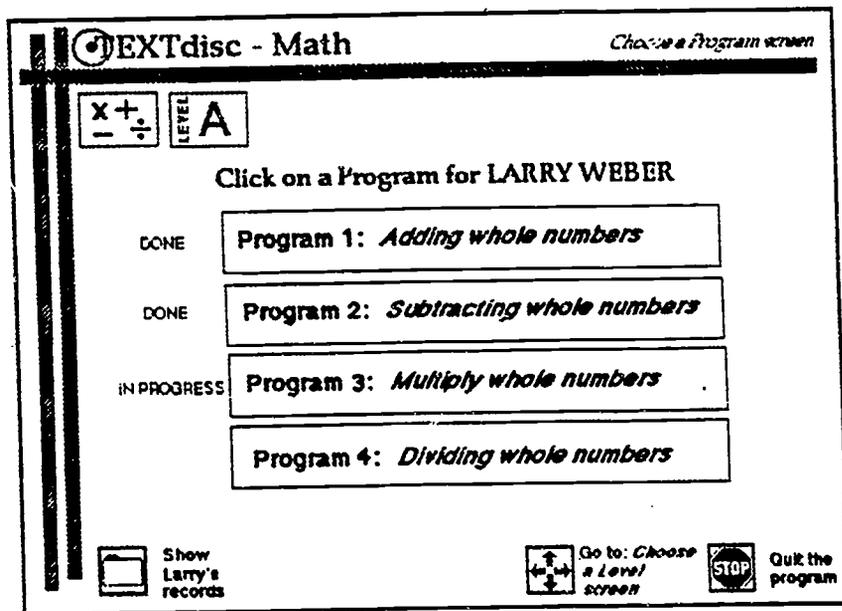
The "Show records" option

From the "Choose a Level" screen or the "Choose a Program" screen, an instructor or student can click on the "Show records" icon to display the current student's "Math Results" screen.

On the "Math Results" screen you can:

- See score, time and status information for the current student on each Program of each Level.

- Access a more detailed score breakdown for any Program for the current student.

- Print the screen.

The "Math Results" screen lists all Programs for all Levels and shows the following information for each Program:

- Score — computed as percentage of correct responses on first try. An asterisk (*) appears beside the score if the student has not completed the Program; this indicates that the score is based on only those problems completed so far.

- Completed — number of problems completed (correctly or incorrectly)

- Date — date the student last worked on the Program

- Time — total minutes the student has worked in the Program

- Status—shows DONE if the Program has been completed, IN PROGRESS if started but not yet completed, blank if not started.

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From the "Math Results" screen, you can access a more detailed "Score Breakdown" for any Program by typing in the Level letter and Program number for that Program. (For example, to see a breakdown for Level B, Program 2, type **B2** and press Enter.) The "Score Breakdown" screen shows the number of correct responses on the first, second and third try for new skill and review problems.

The information on the "Score Breakdown" can help an instructor determine:

■ if a student is having trouble reading the problem (if correct on second try),

■ if a student is having trouble setting up the problem (if correct on third try),

■ or if a student is having trouble performing the mathematical operation (if not correct).

The instructor can also see if a student is having difficulty with problems involving the new skill or the review skills.

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4. Additional information about The TEXTdisc

This section contains information about:

□ Courseware orientations— instructor/tutor and student

□ Student rosters—reading and math

□ Student records—reading and math

□ Audio icon

□ Audio cards and Windows

□ The "writing a summary" activity

□ Ending a learning session

□ Backing up student records

□ Deleting student records

□ Student reading handouts

□ The "Math Check" and instructor key

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Instructor/tutor orientation

To help instructors and tutors familiarize themselves with the scope and sequence of The TEXTdisc, a demo program has been included on the CD. The demo program provides an overview of the courseware and contains samples of activities from the reading and math sections.

Before viewing the demo program (or the courseware), make sure that The TEXTdisc's special fonts have been loaded into Windows. See "Installing Special Fonts" on page 2.3 of this guide for instructions for loading fonts into Windows.

To view the demo, follow the steps below:

1. Start Windows.

2. From the Windows Program Manager, choose RUN from the FILE pull-down menu. The RUN dialog box appears.

3. In the Command Line Field, type the following:

   d:\demo\tddemo1

   Then click OK. This will start the demo.

   NOTE: If your CD-ROM drive is a drive other than D, substitute the appropriate letter in the above command.

4. Follow the on-screen directions to view the demo.

Student orientation

When a new student starts using The TEXTdisc, he or she should first go through The TEXTdisc Overview. The Overview provides information on how to use the computer (including the mouse) and an introduction to the courseware.

To start a student in the Overview, click on "The TEXTdisc Overview" box on the "Choose a Section" screen, and follow the on-screen instructions to move through the program.

When the student completes the Overview, he is returned to the "Choose a Section" screen where he can choose to start the reading or math section of the courseware.

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Student rosters

The student management system keeps two student rosters: the Reading Student Roster is a list of all students enrolled in the reading section, and the Math Student Roster is a list of all students enrolled in the math section.

To display the Reading Student Roster, go into the reading section of the courseware and click on the "See Reading roster" icon from any of the starting/enrolling screens.

To display the Math Student Roster, go into the math section of the courseware and click on the "See Math roster" icon. To access either roster, you must type in the instructor code.

The instructor code is
CORRECT

The rosters show the following information for each student enrolled:

- The student's first and last name
- Sign-on name
- The date the student was enrolled in courseware
- The last date the student worked in the courseware
- The last math Program the student worked on (Math Roster only)

On the roster screens there are "buttons" at the bottom of the screen that allow you to:

- Exit the roster
- Print the screen
- Move to the next or previous page (if your roster has more than one page of students)
- Delete a student from the Roster. (See "Deleting Student Records" on page 4.9 for detailed information on deleting a student from a roster and deleting his records from the computer.)

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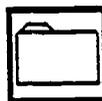
Student records

The student management system stores and updates information on each student's progress in the reading and math sections.

Reading records

To view a student's reading records, start the student in the reading section and select the module for which you wish to see records. Then click on the "Show records" icon to display the student's "Reading Scores" screen. The "Reading Scores" screen lists all activities for the current module and shows the following information for each activity:

■ Score — computed as percentage of correct responses on first try. An asterisk (*) in the score column indicates that the activity is not scored.

■ Time — total minutes taken to complete the activity

■ Date — date the student completed the activity

■ Status — shows "DONE" if the activity has been completed

On the "Reading Scores" screen, you can click on the buttons at the bottom of the screen to print the screen or exit.

TEXTdisc - Reading
Scores for Larry Weber
Module: "History of the Textile Industry"

Total time (in this module) = 2 hr 8 mn

	Score	Time	Date	Status
Step 1 - Before you read the article				
1 - Think about what you want to learn	*	12 mn	2/7/93	DONE
Step 2 - Reading the article				
1 - Read the article	*	26 mn	2/7/93	DONE
2 - Learn about the vocabulary words	*	35 mn	2/14/93	DONE
3 - Take the vocabulary test	80 %	18 mn	2/17/93	DONE
4 - Learn from graphs	75 %	25 mn	2/17/93	DONE
Step 3 - Understanding the article				
1 - Identify paragraph topics	100 %	10 mn	2/22/93	DONE
2 - Make an outline	90 %	14 mn	2/22/93	DONE
3 - Identify where to look for answers				
Step 4 - Finding information in the article				
1 - Scan for words				
2 - Scan for answers				
3 - Scan for more answers				
Step 5 - Understanding the article				
1 - Summarize the article				
2 - Answer true-false questions				
3 - Answer fill-in-the-blank questions				
4 - Answer questions from Step 1				

[Exit Roster]   [Print Screen]

All scores reflect percentage of correct responses ON FIRST TRY.
Activities with an asterisk (*) in the score column are NOT SCORED.

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Math records

To view a student's math records, start the student in the math section. Then click on the "Show records" icon to display the student's "Math Results" screen. The "Math Results" screen shows the following information for each math Program:

■ Score — computed as percentage of correct responses on first try. An asterisk (*) appears beside the score if the Program is not yet complete; this indicates that the score is based on only those problems completed so far.

■ Completed — number of problems completed (correctly or incorrectly)

■ Date — date the student last worked on the Program

■ Time — total minutes student has worked in the Program

■ Status — shows "DONE" if the Program has been completed, "IN PROGRESS" if started but not yet completed, or blank if not started

TEXTdisc - Math

Math Results for Larry Weber

To see a score breakdown for any program, type the level and program number. ▶ |
Example: Type A1 to see score breakdown for Level A Program 1.

	Score	Completed	Date	Time	Status
Level A - Whole Numbers					
Program 1 - Adding whole numbers	80%	10 out of 10	3/21/93	20 min	DONE
Program 2 - Subtracting whole numbers	94%	15 out of 15	3/27/93	26 min	DONE
Program 3 - Multiplying whole numbers	100% *	6 out of 15	4/5/93	13 min	IN PROGRESS
Program 3 - Dividing whole numbers		0 out of 15			
Level B - Fractions					
Program 1 - Adding fractions		0 out of 20			
Program 2 - Subtracting fractions		0 out of 26			
Program 3 - Multiplying fractions		0 out of 26			
Program 4 - Dividing fractions		0 out of 32			
Level C - Decimals					
Program 1 - Add, subtract, multiply, divide		0 out of 32			
Program 2 - Rounding off decimals		0 out of 36			
Program 3 - Changing fractions to decimals		0 out of 40			
Level D - Percents					
Program 1 - Find part (% and whole known)		0 out of 40			
Program 2 - Find % (part and whole known)		0 out of 40			
Program 3 - Find whole (% and part known)		0 out of 42			

[Exit] [Print Screen]   All scores reflect percentage of correct responses ON FIRST TRY
* Program in progress: Score shows percentage correct of problems completed.

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From the "Math Results" screen, you can access a more detailed "Score Breakdown" for any Program by typing in the Level letter and Program number for that Program. (For example, to see a breakdown for Level B, Program 2 – Subtracting Fractions, type B2 and press Enter.) The "Score Breakdown" screen shows the number of correct responses on the first, second and third try for new skill and review problems.

The information on the "Score Breakdown" can help an instructor determine:

■ if a student is having trouble reading the problem (if correct on second try),

■ if a student is having trouble setting up the problem (if correct on third try),

■ or if a student is having trouble performing the mathematical operation (if not correct).

The instructor can also see if a student is having difficulty with problems involving the new skill or the review skills.

On both the "Math Results" and "Score Breakdown" screens, you can click on the buttons at the bottom of the screen to print the screen or exit.

Audio icon

The TEXTdisc CD contains over ten hours of high-quality digital audio (recorded human voice). Throughout the reading and math sections, an audio icon is displayed on the screen when audio is available. The student can choose to click on the icon to hear the audio.

In the reading section, audio is available to help the student learn vocabulary words and understand activity directions.

In the math section, after the first incorrect response to a word problem, the student can click on the audio icon to hear the word problem. Audio is also available for math program directions.

Headphones with volume control are recommended for student use. The headphones should be plugged into the jack on the audio card on the back of the computer (not on the CD-ROM drive).

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Audio cards and Windows

To use The TEXTdisc, you must have a Windows-compatible audio card installed in your computer and its driver(s) loaded into Windows.

NOTE: Most audio cards give separate instructions for installing drivers and for loading drivers into Windows. Be sure to follow your audio card's instructions for loading drivers into Windows.

If you encounter an error message when you click on an audio icon in The TEXTdisc, check the documentation that came with your audio card to be sure that:

■ the audio card is Windows-compatible, and

■ the card's sound drivers were loaded into Windows.

Headphones or speakers should be plugged into the jack on the audio card on the back of the computer (not on the CD-ROM drive).

The "writing a summary" activity

In Step 5, Activity 1 – "Summarize the article," the student has the choice of writing a summary of the article on paper or on the computer. If the student chooses to write the summary on the computer, the activity opens Windows Notepad, a simple word processor. (See the Windows User's Guide for more information on using Notepad.)

The student types his summary of the article in Notepad and then chooses SAVE from the FILE pull-down menu. When the student chooses to EXIT Notepad, he is returned to the activity.

At a later time, if the student wishes to return to his summary to edit, print, or show it to his instructor, he can access it by clicking on the "Continue working on summary" icon on the Step 5 "Choose an Activity" screen.

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Ending a learning session

In the math section of The TEXTdisc, a student can quit working on a math Program before completing it and the Program will automatically restart at the proper place (on the next word problem) when he returns. A student can quit a math Program at any time by clicking on the stop sign in the lower right corner of the screen. After quitting a math Program, the student is returned to the management system, where he can end his learning session by again clicking on the stop sign.

In the reading section, a student must complete an activity within a learning session to receive any credit for that activity. If a student quits a reading activity in the middle (by selecting Quit from the File pull-down menu), his score and time information are not recorded and he will be started at the beginning of the activity when he returns. After completing an activity, the student is returned to the management system where he can choose to begin another activity or to end the learning session by clicking on the "Quit the program" stop sign.

When a student chooses to end a learning session in reading or math, three option boxes appear:

■ Click on the "Restart" box to restart the program for another student.

■ Click on the "Quit to Windows" box to exit to the Windows Program Manager.

■ Click on the "Shut down" box to exit to a DOS prompt.

Backing up student records
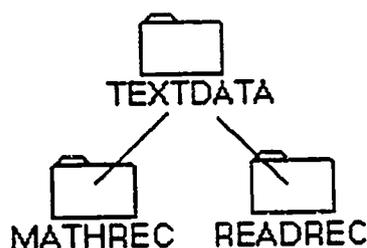
The student management system creates a folder (directory) on the computer hard drive called "TextData" for storing student records. The "TextData" folder is found on the drive you designated in the first time startup procedures (usually drive C).

Inside the "TextData" folder are two folders: "ReadRec" and "MathRec." The "ReadRec" folder contains records for all students enrolled in the reading section, and the "MathRec" folder contains records for all students enrolled in the math section. When a student is enrolled in a section, a new folder is created for that student inside the "ReadRec" or "MathRec" folder. (The name of the new folder is the student's sign-on name.)

As part of your regular backup routine, you will want to periodically back up the "TextData" folder and its contents (all folders and files inside).

Deleting student records

As more students use The TEXTdisc, more names are added to the student rosters and more records are saved on your hard drive. It is advisable to keep the rosters up-to-date and manageable and to keep your hard drive free of old and unneeded records.

Before deleting a student and his records from reading or math (or both), BE SURE that the student is finished using The TEXTdisc and that his records are no longer needed. You may want to print out the student's records before deleting them. (See "Student records" on page 4.4 for complete instructions on displaying and printing student records.)

The procedure for deleting a student and his records involves two steps. Follow these steps to delete a student and his records from reading, math, or both:

1. Delete the student's name from the student roster(s).

In The TEXTdisc student management system, display the reading or math student roster. Click on the "Delete" button at the bottom of the roster and follow the on-screen instructions to enter the sign-on name of the student, verify the student's information, and delete the student from the roster. (Repeat the procedure if you are deleting more than one student from the roster. If you need to delete the student from both reading and math, display the other roster and repeat the procedure.)
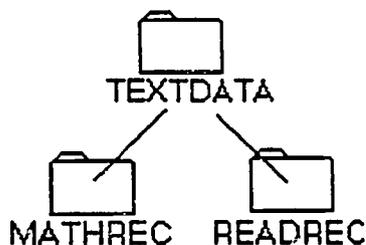
2. Delete the student's records from the hard drive.

Exit to Windows and open the File Manager to view the list of folders (directories) on your hard drive. Click on the "TextData" folder to display two folders inside called "MathRec" and "ReadRec."

- To delete a student's math records, double-click on the "MathRec" folder to display the folders of all students enrolled in the math section. Find the folder(s) for the student(s) you wish to delete. Highlight these folder(s), then press the Delete key.

- To delete a student's reading records click on the "ReadRec" folder to display the folders of all students enrolled in the reading section. (The names of the folders are the sign-on names of the students.) Find the folder(s) for the student(s) you wish to delete. Highlight these folder(s), then press the Delete key.

Delete Student

TEXTDATA / MATHREC READREC

Student reading handouts

In the back of this guide, you will find supplementary materials for students to use with the reading section of the courseware. For each module, a copy of the article, a list of goal-setting questions, and a list of vocabulary words and definitions are provided. You may use these masters to make copies for students.

The Math Check and instructor key

Included in this guide, you will find a reproducible master of the Math Check and an instructor's key for scoring the test. The TEXTdisc Math Check is a paper-and-pencil test designed to help the instructor determine which Levels of the math section a student is prepared to start.

For more information on administering and scoring the Math Check, see pages 1.11 and 1.12.

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HISTORY OF THE TEXTILE INDUSTRY

Textile manufacturing, or the making of yarn and cloth, is one of the world's oldest industries. Twelve thousand or more years ago, man twisted flax, cotton, or wool into yarn and made baskets, nets, and simple fabrics. By about 4000 B.C., Egyptians were highly skilled weavers of linen. Beautiful silk fabric was being made in China by 2600 B.C. However, until the 18th century, all fabric was constructed and decorated very slowly by hand.

In England in the mid 1700's, machines were introduced which drastically changed the way textiles were made. The spinning jenny, which could twist many strands of yarn at a time, was invented in 1764 by James Hargreaves. A few years later, Richard Arkwright built the first practical cotton mill, using machines that made it possible to produce cloth in greater volumes than ever before. In 1785, a weaving loom was invented that was powered by steam.

By making it illegal to export textile machines, the English tried to keep these developments to themselves. However, Samuel Slater memorized how the textile machines worked, came to America, and built a cotton mill in 1790. Three years later, Eli Whitney invented the cotton gin, enabling one man to do the work of fifty in removing seeds and hulls from cotton. Slater's mill and the cotton gin led to the building of many textile mills from Maine to South Carolina.

During the 20th century, dramatic developments have taken place in the textile industry. Modern textile machines can produce yarn and fabric efficiently and rapidly, resulting in high quality, affordable products. Manmade fibers such as rayon, nylon, polyester, and spandex have been developed. New blends of natural and manmade fibers and innovative methods of finishing have created high performance, easy-care fabrics suited to today's lifestyles.

Your reading goal for this module is to find the answer to these questions:

1. When and where did the weaving of fabric begin?

2. Why was the invention of the spinning jenny in 1764 important to the textile industry?

3. How did Eli Whitney's 1793 cotton gin affect the textile industry?

4. What was unusual about the first cotton mill built in America?

5. What are some important things that have happened in textiles since 1900?

affordable (u FOR du bul) — priced so that many people have the money to but it

B.C. — letters used to show the number of years Before Christ's birth. The date 4000 B.C. means 4000 years before the birth of Christ, or about 6000 years ago. Four thousand B.C. is fourteen hundred years earlier than twenty-six hundred B.C.

blends (blendz) — from the word blend. A blend is something made by thoroughly mixing two or more things together. Many fabrics are blends of two or more different kinds of yarn.

century (SEN chu re) — a period of one hundred years. The 18th century is the one hundred years from 1700 to 1799. The 20th century is from 1900 to 1999.

constructed (kon STRUK ted) — put together (in the case of textiles, knit or woven into cloth)

cotton gin (KOT n JIN) — a machine that removes seeds and hulls from cotton

cotton mill (KOT n mil) — a building that contains spinning or weaving machines, where cotton products (such as yarn or cloth) are made

created (kre A ted) — made, or caused to be

decorated (DEK u ra ted) — made more beautiful by adding color of design

developed (de VEL opt) — brought into being

developments (de VEL op ments) — improvements

dramatic (dru MAT ik) — having an exciting quality

drastically (DRAS ti kul le) — extremely, or very much

efficiently (u FISH unt le) — without wasting time, money, or energy

Egyptians (e JIP shunz) — people who live in Egypt

enabling (en A bling) — giving the ability to

export (EK sport) — to send goods out of one country for sale and use in another country

fabric (FAB rik) — woven or knit cloth

fabrics (FAB riks) — woven or knit cloth

fibers (FI berz) — tiny, thread-like strands that can be spun into yarn

finishing (FIN i shing) — things done to fabric to give it special qualities needed for its end use. The finishing of fabric includes things like bleaching, dyeing, and treatments to make it wrinkle less, repel water, or be flame resistant.

flax (flaks) — a plant from which linen fabric is made

illegal (i LE gul) — against the law

industries (IN du strez) — branches of business, trade, or manufacturing

industry (IN du stre) — a branch of business, trade, or manufacturing

innovative (IN u va tiv) — done in a new way

introduced (in tro DOOST) — brought into use for the first time

invented (in VEN ted) — created something new

lifestyles (LIF stilz) — ways of living

machines (mu SHENZ) — devices used to perform specific tasks

manmade (man MAD) — formed or made by man. Manmade fibers are created by mixing chemicals.

manufacturing (man u FAK chur ing) — the making of something by hand or by machine

memorized (MEM o rizd) — learned by heart, or committed to memory

methods (METH odz) — regular ways or systems of doing something

modern (MOD ern) — occurring in the present time

natural (NACH u rul) — formed or made by nature. Natural fibers are those which come from plants or animals. Examples of natural fibers are cotton, wool, and flax.

nylon (NI lon) — a manmade fiber that is used to make many kinds of fabric, such as the fabric for women's hose

performance (per FOR muns) — doing or carrying out an action

polyester (pol e ES ter) — a manmade fiber that is used alone or blended with another fiber to make fabric. Polyester is often blended with natural fibers to make a fabric that is less likely to wrinkle or shrink.

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possible (POS u bul) — capable of being done

powered (POU erd) — given energy to do work

practical (PRAK tu cul) — sensible, or useful

produce (pro DOOS) — to make, or to manufacture, an item

products (PROD ukts) — things that are made

quality (KWOL i te) — worth or value

rapidly (RAP id le) — fast, or in a quick way

rayon (RA on) — a manmade fiber that can be used to make fabric that looks like silk, wool, or cotton

resulting (re ZULT ing) — occurring from a particular cause

simple (SIM pul) — very plain

spandex (SPAN deks) — a manmade fiber that has elastic qualities. It is used to make fabrics such as Lycra, which is often used in swimwear and sportswear.

spinning jenny (SPIN ing JEN e) — a machine that twists many strands of fibers at a time

strands (stranz) — from the word strand. A strand is a single, stringlike piece of something.

textile (TEKS tul) — woven or knitted cloth, or the yarn used to make it

textiles (TEKS tuls) — woven or knitted cloth, or the yarn used to make it

thousand (THOU zund) — the number one thousand. Twelve thousand is the number twelve thousand.

twisted (TWIS ted) — turned or wound together to make a single strand

volumes (VOL yumz) — amounts

Vocabulary exercises - test items

industry	memorize	practical	decorate	efficient
innovative	performance	product	development	enable
introduce	possible	volume	dramatic	export
invent	powered	affordable	drastic	illegal

History - 4

PREPARING COTTON FIBERS FOR SPINNING

The making of yarn begins in the opening, cleaning, and blending area of a yarn plant. If the finished yarn is to be of uniform quality, cotton from various sources must be blended together. To do this, fibers from several bales are fed into a machine that blends the fibers and opens or separates them into a loose fluffy mass. During the opening and blending process, many impurities such as dirt and seeds are removed by agitation and sifting.

A carding machine continues the fluffing and cleaning process, and also partially aligns the fibers so that they lie somewhat parallel. Carding is done by wire pins that are attached to a moving cylinder. A filmy layer of carded fibers collects on the cylinder. This is gathered into a soft mass that is pulled into a ropelike strand of fibers about one inch in diameter called a card sliver.

Card slivers then go through the drawing frame to make the quality of the slivers more uniform. Rollers smooth and mix several slivers at a time, pull them into a thin layer, and then into a drawn sliver. This is also the process that blends fibers of different types when blended yarn is wanted. For example, if a 50/50 polyester / cotton blend yarn it to be made, cotton slivers would be mixed with an equal number of polyester slivers.

Drawn slivers are taken to the roving frame and fed between sets of rollers. Each set of rollers rotates faster than the set behind it. The difference in rotation speed causes the strand that comes out of the roving frame to be about one-eighth the diameter of the drawn sliver that went in. A little twist is added, and this new strand, called roving, is wound on a bobbin. The bobbins are doffed, or removed, and taken to the spinning frame.

Your reading goal for this module is to find the answer to these questions:

1. How are dirt and seeds cleaned from cotton?

2. What does a carding machine do?

3. What are slivers and roving?

4. What does a drawing frame do?

5. What does a roving frame do?

agitation (aj i TA shun) — shaking or moving back and forth

aligns (u LINZ) — forms into a line or makes things lie pointing in the same direction

area (AR i u) — a space used for a special function or purpose

attached (u TACHT) — joined or fastened to something else

bales (balz) — from the word bale. A bale is a large bundle of a material such as cotton that is tightly wrapped for shipping or storage.

blending (BLEND ing) — thoroughly mixing two or more things together

blends (blendz) — From the word blend. Blend means to thoroughly mix two or more things together.

bobbin (BOB in) — a reel or spool for holding thread or yarn used in spinning, weaving, or sewing

card sliver (kahrd SLI ver) — the strand that comes out of the carding machine

card slivers (kahrd SLI verz) — the strands that come out of the carding machine

carding machine (KAHRD ing mu SHEN) — a machine that fluffs and cleans cotton, and makes the cotton fibers start to line up

causes (KO zez) — makes happen

collects (ku LEKTS) — gathers together or accumulates

continues (kon TIN uz) — keeps on

cylinder (SIL in der) — a long, round object with flat ends

diameter (di AM e ter) — the straight line passing from one side to the other through the center of a circle

difference (DIF er ens) — the way in which things are not alike

different (DIF er rent) — not the same

doffed (doft) — taken off

drawing frame (DRAW ing fram) — a machine that mixes together and smoothes card slivers and makes them into drawn slivers

drawn sliver (drawn SLI ver) — the strand that comes out of the drawing frame

drawn slivers (drawn SLI verz) — the strands that come out of the drawing frame

equal (E kwul) — the same

example (eg ZAM pul) — one thing selected to show what others are like

fibers (FI berz) — the tiny, threadlike parts of which cotton is made

filmy (FIL me) — very thin or sheer

fluffy (FLUF e) — soft and light

fluffing (FLUF ing) — shaking or puffing out into a soft, light, downy mass

gathered (GATH erd) — collected together

impurities (im PYUR i tez) — unwanted things that are mixed with the thing that is wanted

loose (loos) — not tightly packed

machine (mu SHEN) — something made to do work

parallel (PAR u lel) — side by side, lying in the same direction

partially (PAHR shul le) — not completely

polyester (pol e ES ter) — a man-made fiber from which some fabrics are made

process (PROS es) — a set series of things that lead to an expected result

quality (KWOL i te) — worth or value

removed (re MOOVED) — gotten rid of or taken away

rotates (RO tats) — turns in a circle

rotation (ro TA shun) — turning in a circle

roving (ROV ing) — the strand that comes out of the roving frame

roving frame (ROV ing fram) — a machine with many rollers, that changes drawnslivers into smaller strands called roving

separates (SEP u rats) — takes apart or comes apart

several (SEV er ul) — more than two or three but not many

sifting (SIFT ing) — separating smaller pieces from larger pieces by allowing the smaller pieces to fall through holes

slivers (SLI verz) — from the word sliver. A sliver is a ropelike strand of fibers that is about an inch in diameter.

smooth (smooth) — to give an even surface to something

sources (SORS ez) — the places from which something is gotten

strand (strand) — a single stringlike piece of something

through (throo) — into one side of something and out the other side

together (too GETH er) — with each other

twist (tv/ist) — turn

types (tips) — kinds

uniform (U ni form) — always the same and unchanging

various (VAR i us) — many, or several of different kinds

wound (wound) — rolled into a ball or onto a spool or bobbin

Vocabulary exercises / test items

agitate	quality
align	rotate
attach	separate
blend	sift
cause	source
equal	strand
filmy	through
impurity	type
partial	uniform
process	various

SPINNING OF WOOL AND COTTON YARN

The simplest yarn structure is called single yarn. This is yarn composed of short staple fibers with sufficient twist to hold together. The final process in the preparation of single yarn is spinning. Spinning of yarn may be by a system called ring spinning or by a newer procedure called open-end spinning. With either process the desired result is to produce a yarn that has a specific diameter, strength, and twist and is uniform in quality.

Ring spinning begins with roving being fed between sets of rotating rollers that are similar to those in a roving frame. The rollers further extend the roving to the desired diameter. The yarn is carried to a bobbin by a U-shaped guide, called a traveler, which moves around the bobbin on a ring. As the yarn is wound, a twist is added by the turning of the spindle which holds the bobbin and by the movement of the traveler.

In open-end spinning, a sliver of fibers is fed into a machine in which air blows the fibers into a loose form. Individual fibers are then pulled to constantly add to the open end, or tail, of the forming yarn. The yarn is extended to the appropriate diameter. A twist is added, and the finished yarn is wound onto a bobbin. Open-end spinning is faster than ring spinning, and labor costs and energy consumption are reduced.

Although cotton yarn can be spun by ring spinning or open-end spinning, wool yarn is made primarily on ring spinning frames. Prior to spinning, wool fibers require some special procedures. Each fleece must first be pulled apart and the fibers sorted according to fineness and length. The wool is then washed to remove grease, dirt, and dust. The wool fibers are carded and the resulting roving goes to the spinning frame to be extended and twisted.

Your reading goal for this module is to find the answer to these questions:

1. How is yarn made by open-end spinning?
2. How is yarn made by ring-spinning?
3. How is wool yarn made?
4. What qualities are wanted when yarn is spun?
5. Why is open-end spinning cheaper to do than ring-spinning?

according (a KOR ding) —- in agreement with

although (awl THO) — in spite of the fact; even though

appropriate (u PRO pri it) — correct or proper

bobbin (BOB in) — a reel or spool for holding thread or yarn used in spinning, weaving, or sewing

carded (KAHR ded) — cleaned or combed with wire brushes. Tangles and impurities are removed, and the wool fibers come out of the carding machine in a ropelike form called roving.

composed (kom POZD) — made up

constantly (KON stant le) — without stopping
consumption (kon SUMP shun) — the amount used up

desired (de ZIRD) — wanted, wished for strongly

energy (EN er je) — ability to do work. When we talk about energy consumption in spinning yarn, we mean fuels used to provide electricity to make the machines work.

extend (ek STEND) — to stretch out, or draw out, or become longer

extended (ek STEN ded) — stretched out, or drawn out, or made longer

final (FI nul) — last, or at the end

fleece (fles) — wool that has been cut from a sheep

further (FER ther) — to a greater extent, or more

grease (gres) — the oily matter in wool

individual (in di VIJ u ul) — single or separate

labor costs (la ber kosts) — the money paid to workers to do the job

length (length) — how long a thing is

preparation (prep u RA shun) — the things done to make something

primarily (pri MAR i le) — chiefly or usually

prior (PRI or) — coming before in time

procedure (pro SE jur) — the way or method of doing something

produce (pro DOOS) — to make

quality (KWOL i te) — worth or value

reduced (re DOOST) — comes from the word reduce, which means to make tne amount smaller

remove (re MOOV) — to take away

require (re KWIR) — to have need for or make necessary

result (re ZULT) — what is caused by some action

resulting (re ZULT ing) — what was caused by some action

rotating (RO tat ing) — turning in a circle

roving (ROV ing) — a ropelike strand of fiber, smaller in diameter than a sliver, that is ready to go into a spinning frame

similar (SIM i ler) — alike without being exactly the same

simplest (SIM plest) — the plainest and least complicated

sliver (SLI ver) — a ropelike strand of fibers that is about an inch in diameter

sorted (SORT ed) — arranged or divided by kinds

special (SPESH ul) — a particular kind, different from others

specific (spi SI fik) — exact or of a definite kind

spindle (SPIN dul) — a rod which holds a bobbin on a spinning frame

staple fibers (STA pul FI berz) — tiny, threadlike parts of which cotton and wool are made

strength (strength) — being strong

structure (STRUK cher) — the way parts are put together

sufficient (su FISH unt) — enough or as much as is needed

system (SIS tem) — a plan or a method

traveler (TRAV ler) — a U-shaped guide on a spinning frame that moves around the bobbin and guides yarn onto the bobbin

twisted (TWIS ted) — turned, or wound together

U-shaped guide (U shapt gid) — a part on a spinning frame that carries or directs yarn to the bobbin. It is called "U-shaped" because it is shaped like the letter "U".

yarn (yahrn) — a strand of twisted fibers from which fabric is made.

Vocabulary exercises / test items

according produce
appropriate reduce
compose require
constant result
consumption similar
extend   simple
preparation specific
primary   structure
prior   sufficient
procedure system

KNITTING FABRIC

Knitting is a system in which fabric is formed by using thin pointed needles to interloop yarns. Fabric has been made this way for over seventeen centuries. Through the use of modern knitting machines, knits can now be made rapidly and at a comparatively low cost. Weft knitting and warp knitting are the two general methods used in making knit fabric.

Weft knit fabric is made by forming yarn loops across the width of the fabric. It is usually done on a circular machine with the finished fabric in the shape of a tube. However, some weft knitting is done on a flatbed machine. Four kinds of stitches can be formed, but the most often used is the plain or jersey knit used in t-shirts. Weft knit fabrics may be single-knit (formed by using one set of needles) or double-knit (formed by using two sets of needles).

A warp knit fabric is always flat and has straight side edges. It is formed by loops of yarn going down the fabric instead of across the width or around in a circle. Machines used for warp knitting are similar in appearance to weaving machines and are sometimes called knitting looms. Warp knit fabric can be manufactured rapidly and in large quantities.

Warp knit fabric can be classified as tricot, raschel, and simplex. Tricot and raschel are the most common types. Tricot knits may be sheer and filmy as used for lingerie or firm and more opaque as used for blouses. Raschel knitting offers great flexibility in design and is important in making highly patterned knit fabric and crochet knits.

Your reading goal for this module is to find the answer to these questions:

1. What is the difference between weft knit and warp knit fabric?

2. On what kind of machine is weft knitting done?

3. On what kind of machine is warp knitting done?

4. What is a common kind of weft knit fabric?

5. What are the most common kinds of warp knit fabrics?

KNITTING FABRICS
On-line dictionary help words

appearance (u PIR uns) — the outward look of something or someone.

blouses (BLOUS ez) — a kind of shirt worn by women

centuries (SEN chu riz) — from the word century. A century is 100 years.

circle (SER kul) — a perfectly round shape

circular (SER ku lahr) — revolving, or moving in a circle

classified (KLAS i fid) — grouped according to kind

common (KOM un) — usual or widespread

comparatively (kom PAR u tiv le) — measured by comparison with something else

crochet (kro SHA) — a kind of knit fabric made by raschel knitting

design (de ZIN) — an outline, drawing or plan of something that is to be made or done

edges (EJ ez) — the sides

fabric (FAB rik) — woven or knit cloth

filmy (FIL me) — very thin or sheer.

flatbed machine (flat bed mu SHEN) — a machine used for some weft knitting such as for knitting specific shapes or for producing "full-fashioned" knit pieces

flexibility (flek su BIL i te) — ability to adapt easily

general (JEN er ul) — widespread or common

interloop (in ter LOOP) — to loop together

jersey knit (JER ze nit) — a type of knitting often used for t-shirts

knitting looms (nit ting loomz) — machines used for warp knitting

lingerie (lahn ju RA) — women's underwear

machines (mu SHENZ) — things made to do work

manufactured (man u FAK cherd) — made by hand or in a factory, usually in large numbers

methods (METH ods) — a regular way or system of doing something

modern (MOD ern) — of the present time

needles (NE dulz) — small thin pieces of metal used to hold thread or yarn for sewing or knitting

opaque (o PAK) — cannot be seen through

patterned (PAT ernd) — has designs or figures

pointed (POIN ted) — sharp

quantities (KWON ti tez) — amounts

rapidly (RAP id le) — fast or quickly

raschel (ru SHEL) — a method of warp knitting

seventeen (se ven TEN) — the number 17

sheer (sher) — very thin

similar (SIM i ler) — alike, without being exactly the same

simplex (SIM pleks) — a method of warp knitting

stitches (STICH ez) — ways of making interloops in knitting

straight (strat) — without bends or curves

tricot (TRE ko) — a method of warp knitting

tube (tub) — a hollow cylinder

usually (U zu ul le) — ordinarily or most of the time

warp (wahrp) — a method of knitting fabric in which the loops formed by the yarn go down the length of the fabric

weaving (WEV ing) — making fabric by interlacing sets of yarn

weft (weft) — a method of knitting fabric in which the loops formed by the yarn go across the width of the fabric or around a circle

width (width) — the space from side to side

Vocabulary exercises / test items

appearance	common	flexible	modern	rapid
century	comparative	general	opaque	sheer
circular	design	manufacture	pattern	usual
classify	fabric	method	quality	width

WEAVING FABRIC
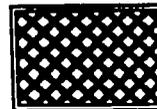
Weaving is one of the oldest art forms known. Woven fabric of fine quality has been found in some of the oldest tombs discovered. Woven fabric consists of sets of yarns interlaced at
right angles to each other. Different weaves are achieved by altering the pattern by which the yarns are interlaced. By changing the type of yarn used and the tightness of the weave, each weave can produce a variety of fabrics.

Weaving is done on a loom. A beam located at the back of the loom holds the warp (lengthwise) yarn and releases yarn to the weaving area of the loom as needed. In the weaving area of the loom, the filling or weft (crosswise) yarns are interlaced with the warp. Until recent years, all looms used a shuttle to place the filling yarn. Looms without shuttles have now replaced many of the shuttle looms.

Shuttleless looms include three principal types. These are the projectile weaving machine, the rapier weaving machine, and the jet weaving machine. The projectile machine uses a small metal unit that grips the filling yarn and carries it across the loom. Rapier weaving machines use metal arms to carry the yarn. Jet weaving looms lay the filling yarns by either a jet of air or a jet of water.

There are three basic weaves from which most woven fabrics are made. The plain weave is the simplest and cheapest to produce. An example is the fabric from which most bed sheets are made. Another basic weave is the twill weave, which is characterized by raised diagonal lines. Twill fabrics usually are strong and durable, and denim is an example. Satin weave fabrics are smooth and shiny on tip. Coat linings are often made of a satin weave fabric.

Your reading goal for this module is to find the answer to these questions:

1. What does a shuttle do on a loom?
2. What are the main kinds of looms without a shuttle?
3. Which weaves are the most common?
4. How can you make different kinds of fabric using the same weave?
5. How is cloth formed by weaving?

achieved (u CHEVD) — got done, or was successful at doing

altering (AWL ter ing) — changing, or making different

angles (ANG gulz) — from the word angle. An angle is the space between two lines or surfaces that meet. A right angle is an angle that looks like the corner of a square.

area (A re u) — space

basic (BA sik) — main or fundamental

beam (bem) — part of a loom

characterized (KAR ik tu rizd) — described the special qualities of a person or thing

cheapest (CHEP est) — costing the least

consists (kon SISTS) — is formed, or made up

crosswise (KROS wiz) — in the direction from side to side. Weft yarn goes across the width of the fabric.

diagonal (di AG u nul) — a straight line that goes across in a slanting direction

discovered (dis KUV erd) — seen for the first time, or found out

durable (DUR u bul) — capable of lasting a long time

example (eg ZAM pul) — one selected to show what others are like

fabric (FAB rik) — woven or knit cloth

fabrics (FAB riks) — woven or knit cloths

include (in KLOOD) — to contain as part of a whole

interlaced (in ter LAST) — joined by weaving together

jet weaving machine (jet WE ving mu SHEN) — a kind of shuttleless loom

known (non) — to be informed of

lengthwise (LENGTH wiz) — in the direction from end to end. Warp yarn goes the length of the fabric.

located (LO kat ed) — established in a place

loom (loom) — machine on which cloth is woven

pattern (PAT ern) — arrangement

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plain weave (plan wev) — type of basic weave.

principal (PRIN si pul) — most important, or main

produce (pro DOOS) — make, or manufacture

projectile (pro JEK til) — an object that can be thrown or shot forward. A projectile weaving machine is a kind of shuttleless loom.

quality (KWOL i te) — worth or value

rapier weaving machine (RA pi er WE ving mu SHEN) — a kind of shuttleless loom

recent (RE sent) — not long past, or modern

releases (ri LES ez) — lets go

replaced (ri PLAST) — took the place of

satin weave (SA tin wev) — type of basic weave

sets (sets) — from the word set. A set is a number of things belonging together.

shuttle (SHUT ul) — the part on older looms that places the filling or weft yarn.

shuttleless. (SHUT ul les) — without a shuttle

simplest (SIM plest) — the easiest to do

smooth (smooth) — has an even surface

twill weave (twil wev) — type of basic weave

types (tips) — kinds

unit (U nit) — one of anything, or a group of things thought of as being together in one whole

variety (vu RI i te) — a number of different kinds

weaves (wevz) — patterns by which sets of yarn are interlaced to form fabric

weaving (WE ving) — making fabric by interlacing sets of yarns

woven (WOV en) — made by interlacing sets of yarn

Vocabulary exercises / test words

achieve	basic	discover	locate	release
alter	characterize	durable	principal	replace
angle	cheap	example	projectile	set
area	consist	include	recent	variety

Weaving - 3

FABRIC FINISHING AND COLOR APPLICATION

Unfinished fabrics just off the loom or knitting machine are called greige or gray goods. Before reaching the consumer market, most fabrics will receive one or more finishing treatments. The amount of finishing is determined by the type of fabric and the purpose for which it is intended. Finishes may be mechanical, and applied by equipment; or they may be chemical, and applied through the use of a water bath, foam application, or a solvent.

Some finishes are called routine finishes and are usually a part of the preparation of all fabrics. Protruding ends of fibers are removed by singeing, and desizing removes chemicals applied earlier. Fabrics are bleached or scoured to prepare for dyeing or printing or to make them white. Machines straighten the fabric and make the width uniform. Pressure and heat remove wrinkles and give the fabric a smooth surface.

There are also finishes designed to alter the fabric. Heat and pressure can be used to give fabric a raised design or a polished surface. Fabric can be napped by passing it over wire brushes to create fluff, such as the inside of a sweatshirt. Chemicals may be applied that make the fabric softer or stiffer, wrinkle less, be flame resistant, repel water or soil, or be less likely to shrink or fade.

Although dye can be applied at the fiber, sliver, or yarn stage, most solid color fabric is dyed after the fabric has been constructed. This is called piece dyeing. The process takes several hours, and steps include the application of dye, a chemical bath, steaming, washing, and drying. If a printed design on the surface of the fabric is desired, techniques such as resist printing, discharge printing, and direct printing are used.

Your reading goal for this module is to find the answer to these questions:

1. When and how is solid color fabric usually dyed?
2. How is a printed design put on fabric?
3. What routine finishing treatments are done to most fabrics?
4. What are some special finishing treatments that use chemicals?
5. What are some special finishing treatments that do not use chemicals?

alter (AWL ter) — change, or make different

although (awl THO) — in spite of the fact that

amount (u MOUNT) — the total, or quantity

application (ap li KA shun) — the act of putting on, or the thing that is put on

applied (u PLID) — put or laid on

bleached (blecht) — whitened by the use of chemicals

chemical (KEM i kul) — substance such as acid, bleach or alcohol

chemicals (KEM i kulz) — substances such as acids, bleaches and alcohol

constructed (kon STRUK ted) — put together (in the case of fabric, knit or woven)

consumer (kon SOO mer) — a person who buys and uses food, clothing, services, and other products

create (kre AT) — to make, or cause to be

designed (de ZIND) — planned or intended

desired (de ZIRD) — wanted, or wished for strongly

desizing (de SI zing) — process that removes size, which is a stiffening material added to yarns during the weaving operation. This is done with a chemical bath.

determined (de TER mind) — found out exactly, or decided

direct printing (di REKT PRIN ting) — a way of putting designs on cloth, most often by using a roller

discharge printing (DIS charj PRIN ting) — the removal of dye from fabric in such a way that a pattern is formed. The area may be left white, or another color may be placed in the pattern area.

equipment (i KWIP ment) — tools or machines used to do a job

earlier (ER li er) — before now

fiber (FI ber) — a single tiny, threadlike part that makes up cotton and wool

fibers (FI berz) — the tiny threadlike parts of which cotton and wool are made

finishes (FIN ish ez) — things done to fabrics to give them special qualities needed for their end use

finishing (FIN ish ing) — things done to fabrics to give them special qualities needed for their end use

finishing treatments (FIN ish ing TRET ments) — things done to fabrics to give them special qualities needed for their end use

foam (fom) — a mass of tiny bubbles formed in water or other liquids

greige (gra) — unfinished fabrics just off the loom or knitting machine. This does not indicate color, for the fabric may be tan, gray, white, or already colored with dye.

intended (in TEN ded) — planned or meant

machines (mu SHENZ) — things made to do work

mechanical (mu KAN i kul) — by machine

polished (POL isht) — smooth and glossy

preparation (prep u RA shun) — things or steps needed to get ready

pressure (PRESH er) — pushing against, or putting weight against something

process (PROS es) — a set series of things that lead to an expected result

protruding (pro TROO ding) — sticking out

purpose (PER pus) — the object, or the end for which a thing is made

removed (re MOOVD) — gotten rid of, or taken away

repel (re PEL) — drive back, or keep off

resist printing (re ZIST PRIN ting) — a way of putting a design on fabric. A chemical or wax coating is painted on the parts of the fabric that are not to be colored when the fabric is dyed.

resistant (re ZIS tant) — able to withstand the action or effect of something such as fire

routine (roo TEN) — a usual or regular way of doing things

scoured (skourd) — cleaned of dirt or oil

shrink (shrink) — become smaller, especially when washed

singeing (SIN jing) — process that removes sticking out ends of fibers so that the fabric surface will be smooth. It is done with heated plates or open flames.

sliver (SLI ver) — a ropelike strand of fibers

solvent (SOL vent) — something, usually a liquid, that can dissolve other things

straighten (STRA ten) — pull and set so that the fabric will hang evenly

surface (SER fis) — the outside or top

techniques (tek NEKS) — special methods or ways of doing something

through (throo) — by means of

type (tip) — kind

unfinished fabrics (un FIN isht FAB riks) — fabrics that have been woven or knit, but that need one or more finishing treatments before they can be used

uniform (U ni form) — always the same and unchanging

usually (U zu ul le) — ordinarily, or most of the time

wrinkle (RING kul) — crease or fold

wrinkles (RING kulz) — creases or folds

Vocabulary exercises - test items

amount	intend	routine
application	polished	scour
bleach	pressure	shrink
construct	protrude	solvent
consumer	purpose	surface
create	repel	technique
determine	resistant	

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CUTTING AND SEWING: THE MAKING OF GARMENTS

The first step in cutting <u>fabric</u> into pieces for <u>garment construction</u> is <u>spreading</u>. Spreading is the laying down of many layers of fabric into a stack, making it <u>possible</u> for many <u>duplicates</u> of each garment part to be cut at one time. Spreading is <u>usually</u> done by a <u>machine</u> that can lay the fabric without <u>stretching</u> it. This is important because garments made of stretched fabrics will not hold their <u>original</u> shape after washing, <u>causing customer dissatisfaction</u>.

The <u>marker</u>, which is a <u>guide</u> for <u>pattern</u> part <u>placement</u> and <u>identifies</u> the cut parts by size, is then placed on the spread <u>fabric</u>. Markers are <u>designed</u> to <u>arrange</u> the pattern <u>pieces</u> to <u>minimize</u> fabric <u>waste</u>. However, markers for the highest <u>quality garments</u> will have all pattern <u>grain lines parallel</u> to the fabric <u>selvage</u> even though this is a less <u>efficient</u> use of <u>material</u>. <u>Failure</u> to keep grain lines parallel can <u>result</u> in garments that <u>skew</u> or <u>sag</u>.

The cutting of the <u>garment</u> parts can be <u>accomplished</u> using tools such as <u>vertical</u> knives, <u>die cutters</u>, or <u>lasers</u>. Next, <u>position marks</u>, which act as <u>guides</u> for sewing <u>operators</u>, are made by <u>methods</u> such as cutting <u>slashes</u> or <u>injecting</u> marking <u>fluid</u>. Since a first <u>quality</u> garment must have all parts from the same <u>shade group</u>, each cut <u>piece</u> is marked for shade. The final step in the cutting room is <u>bundling</u>, or placing the cut parts in order for sewing.

<u>Bundles</u> are sent to a sewing room for <u>garment construction</u>. The usual order of <u>assembly</u> is to sew smaller parts together into larger <u>units</u>, and then to assemble the larger units into garments. However, the kind of garment and <u>quality desired determine</u> the number, <u>complexity</u>, and <u>sequence</u> of sewing <u>operations</u>. Since labor costs make up a large <u>portion</u> of the cost of <u>producing</u> a garment, much <u>effort</u> is given to make the sewing <u>process</u> as <u>efficient</u> as <u>possible</u>.

Your reading goal for this module is to find the answer to these questions:

1. What happens when garments are made from fabric that was stretched during cutting?
2. What is done to lessen the amount of wasted fabric during cutting?
3. How does the person sewing know where to put pockets or how to match seams?
4. Why is each cut garment piece marked for shade?
5. What is the order in which pieces are sewn together to make a garment?

accomplished (a KOM plisht) — carried out or completed

arrange (u RANJ) — to put in the proper order

assembly (u SEM ble) — the process of putting together. The order in which garment parts are put together can change. In garments with few parts, such as T-shirts, large pieces may be sewn together first.

bundles (BUN dulz) — a number of things tied or wrapped together. In the cutting room, cut pieces are put together in a bundle in the order in which they will be sewn.

bundling (BUN dling) — placing cut garment parts together in the correct order for sewing

causing (KO zing) — making happen

complexity (kom PLEK si te) — difficulty

construction (kon STRUK shun) — the act of putting together or building something

customer (KUS tu mer) — a person who buys

designed (de ZIND) — planned or intended

desired (di ZIRD) — wanted or wished for strongly

determine (de TER min) — to be the cause or reason for something to happen

die cutters (DI CUT erz) — metal outlines, similar to large, sharp cookie cutters
dissatisfaction (dis sat is FAK shun) — not happy about or not satisfied with something

duplicates (DOO pli kits) — two or more things exactly alike

efficient (u FISH unt) — done without wasting time, money, or energy

effort (EF urt) — trying hard

fabric (FAB rik) — woven or knit cloth

failure (FAL yur) — not reaching the wanted or necessary end; not a success

fluid (FLOO id) — a liquid, or something that flows

garment (GAHR ment) — a piece of clothing

garments (GAHR ments) — items of clothing

Cutting - 2

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grain lines (GRAN linz) — lines on pattern pieces which guide in placing the pieces on the fabric. If grain lines are lined up with the lengthwise yarn of the fabric, the garment will hold its shape better.

guide (gid) — something that shows the way or directs

guides (gids) — things that show the way or direct

identifies (i DEN ti fiz) — shows what a thing is or who a person is

injecting (in JEK ting) — forcing a fluid into something else, often with a needle

lasers (LA zerz) — narrow beams of intense light that can be used for cutting

machine (mu SHEN) — something made to do work

marker (MAR ker) — a guide for cutting all the pieces that make up a garment, with as little fabric waste as possible

material (mu TIR i ul) — cloth or fabric

methods (METH odz) — regular ways or systems of doing something

minimize (MIN i miz) — to reduce to the least possible amount

operations (op u RA shunz) — tasks that are done to carry out a plan of action

operators (OP u ra torz) — people who run machines

original (o RIJ i nul) — first or earliest

parallel (PAR u lel) — lying in the same direction, the same distance apart at all points

pattern (PAT ern) — a model or guide for something to be made

piece (pes) — one part of something

pieces (PE sez) — parts of something

placement (PLAS ment) — where something is located or placed

portion (POR shun) — part or share

position marks (pu ZISH un MARKS) — marks that help the sewing operator match seams, place pockets, and locate darts

possible (POS u bul) — capable of happening

process (PROS es) — a series of steps which lead to an expected result

producing (pro DOOS ing) — making or manufacturing

quality (KWOL i te) — worth or value

result (re ZULT) — be the cause of, or lead to

sag (sag) — hang down unevenly

selvage (SEL vij) — the lengthwise edge of fabric. The selvage is finished off so that it will not ravel.

sequence (SE kwens) — the order in which a set of things is done

shade group (SHAD groop) — pieces of fabric that are exactly the same color, probably died at the same time

skew (sku) — twist to one side or slant

slashes (SLASH ez) — cuts

spreading (SPRED ing) — in garment construction, the laying down of many layers of fabric into a stack in preparation for cutting

stretching (STRETCH ing) — drawing out in length or width, or pulling so that the shape changes

units (U nits) — groups of things thought of as being together in one whole

usually (U zu ul le) — ordinarily or most of the time

vertical (VER ti cul) — straight up and down. A <u>vertical knife</u> is a machine with a blade that moves up and down rapidly to cut cloth.

waste (wast) — scraps that are left over and can't be used

Vocabulary exercises - test items

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accomplish	guide
arrange	identify
complex	inject
construction	minimize
desire	operation
dissatisfaction	original
duplicate	parallel
effort	position
failure	stretch
fluid	vertical

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THE APPAREL INDUSTRY

For as far back as history is recorded, human beings have worn some kind of clothing. But until the twentieth century, the clothing business was a home industry, and there were no garments hanging on racks in stores. Women usually sewed the clothes for their family. Wealthy people employed tailors and dressmakers. Today clothing is mass-produced. Its manufacture is an important industry employing more than one million people in this country.

Americans spend approximately $137 billion annually on apparel. They buy one billion pairs of pants, two billion shirts and blouses, and 600 million sweaters. However, basic clothing is relatively low cost. A large portion of the money spent on apparel is for fashion garments, the most profitable part of the industry. Fashion consumers are fickle, and their ever-changing tastes create a constant demand for new, stylish garments regardless of the cost.

Creating fashion apparel that sells and is profitable for the manufacturer is a challenging job. Successful fashions must be trendy enough to let wearers show off their status but conforming enough to enable them to feel comfortable in their own group. Fashion's continual changes compel the manufacturers and their workers to adapt their procedures. New styles require updated patterns, altered sewing techniques, and different assembly sequences.

The apparel industry is labor-intensive. Although computers and machines are used in the manufacturing process, these machines require competent operators to run them. A high-style party dress may pass through 30 pairs of hands before it is ready for the consumer. Apparel manufacturing employees can transform a great design idea into an attractive, wearable, profitable, finished product. They are the people who make fashion possible.

Your reading goal for this module is to find the answer to these questions:

1. How is the making of clothing today different than it was 100 years ago?
2. How large is the U.S. apparel industry?
3. What is the most profitable part of the apparel industry?
4. In what ways do fashion changes affect apparel workers?
5. Who changes a design idea into a finished piece of clothing?

adapt   (u DAPT) — to change to fit a new or different use

altered   (AWL turd) — changed; made partly but not completely different

annually   (AN yoo ul le) — each year; happening once each year. Something that is done annually is done once a year, or happens over the period of one year.

apparel   (u PAR ul) — clothing

approximately   (u PROK si mut le) — about; almost exactly

assembly   (u SEM ble) — the process of putting something together

basic   (BA sik) — fundamental; forming the base of something. Underwear, socks, and work clothes are basic apparel.

billion   (BIL yun) — the number one billion. A billion is equal to a thousand millions.

business   (BIZ nis) — the making, buying, or selling of goods or services

challenging   (CHAL en jing) — testing one's ability, or demanding skill

comfortable   (KUM fur tu bul) — at ease

compel   (kum PEL) — to force or make one do something

competent   (KOM pi tunt) — able to do what is needed

computers   (kum PYOO turz) — electronic machines that make calculations, store information, and control machinery

conforming   (kun FORM ing) — being like something else

constant   (KON stunt) — happening all the time, not stopping

consumers   (kon SOO murz) — those who use things up; those who buy things

continual   (kon TIN yoo al) — repeated often over a long time; going on and on

create   (kre AT) — to make, or cause to be

creating   (kre A ting) — making, or bringing into being

demand   (de MAND) — a strong need or desire

design   (de ZIN) — a plan or drawing of something that is to be made or done

different   (DIF e rent) — not the same kind

dressmakers (DRES ma kerz) — people who make dresses

employed (em PLOID) — used, or hired

employees (em PLOI ez) — people who work for someone else

enable (en A bul) — to make possible, or to give the ability to

fashion (FASH un) — a popular style, especially in clothes

fickle (FIK ul) — changing often; not constant or loyal

garments (GAR muntz) — items of clothing

high-style (hi stil) — of the latest fashion

home industry (hom IN du stre) — work or business done at home

industry (IN du stre) — a branch of business, trade, or manufacturing

labor intensive (la bur in TEN sive) — using a large number of workers

manufacture (man yoo FAK chur) — to make something by hand or machine

manufacturer (man yoo FAK chur er) — person or business that makes something

manufacturing (man yoo FAK chu ring) — making by hand or machine

mass-produced (mas pro DOOST) — made in large numbers

million (MIL yun) — the number one million

operators (OP u ra turz) — people who run machines

patterns (PAT urns) — guides for making things

portion (POR shun) — a part of something divided

procedures (pro SE jurs) — ways of doing things

process (PROS es) — a series of steps which lead to an expected result

product (PROD ukt) — a thing made by labor or work

profitable (PROF it tu bul) — providing a benefit, profit, or gain

recorded (ri KORD ed) — written down or kept

regardless (ri GARD lis) — without concern or care for

relatively (REL a tiv le) — when compared to other things

sequences (SE kwun ses) — from the word sequence. A sequence is the order in

which a set of things is done.

sewing (SO ing) — joining together with stitches

status (STA tus) — one's position in a group

stylish (STI lish) — having an up-to-date look

successful (suk SES ful) — turning out well; winning or gaining a desired goal

tailors (TA lurs) — people who make, mend, or alter clothing

techniques (tek NEKS) — methods or ways of doing things

transform (trans FORM) — to make a great change in form or looks

trendy (TREND e) — in the latest style

twentieth century (TWEN te ith SEN chu re) — the period of a hundred years from 1900 to 1999

updated (UP dat ed) — brought up to the present time

wearable (WAR u bul) — suitable or ready for wearing

wearers (WAR ers) — people who wear clothing

Vocabulary exercises - test items

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alter	fickle
assembly	garment
business	industry
compel	pattern
competent	portion
conform	record
continual	sequence
demand	status
employ	style
enable	transform

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In the automotive industry, polyester knit upholstery fabrics are in great demand because they are relatively inexpensive, sturdy, colorfast, easy to clean, and resistant to sunlight. Computer-controlled machines are used to rapidly produce these fabrics to customer specifications. Each high-speed knitting machine uses at least 5,300 needles to knit the fabric. Pattern wheels that control the individual needles can create any pattern desired by the customer.

After knitting, the fabric is put into large tubs on wheels called trucks and taken to be dyed in jet dye machines. A computer determines the precise dye formulas for the desired colors and also controls the piping of the dye to the appropriate machines. When the dye cycle is complete, special chemical finishes are added. The fabric then passes through huge ovens called tenter frames to dry the finishes and stabilize the cloth at desired widths.

The fabric surface is processed to create the desired "hand" or feel. Thin steel wires on rollers are used to nap or fluff the fabric surface. Shearing utilizes rotary knives to level the pile height, producing a velvety finish. Next, the fabric is either sueded, brushed, or polished. Sueding is done by scuffing the fabric surface with sandpaper to make a suede-like finish. Brushing lays the pile in the same direction. Heat and pressure produce a shiny polished effect.

After surface finishing is completed, the upholstery fabric is taken to the inspection department. There, inspectors grade the fabric and remove any that does not meet quality control standards. The fabric is "put up", or rolled on tubes, according to customer specifications as to type of fold, width, and number of yards per tube. The rolled fabric is then sent to the distribution area for packing and shipping to the automotive industry customer.

Your reading goal for this module is to find the answer to these questions:

1. Why is polyester knit fabric in great demand for use in cars?
2. How is fabric for cars seats dyed?
3. How are machines able to rapidly knit car seat fabric?
4. How can car seat fabric be made to look polished or like suede?
5. What is done before finished fabric is packed and shipped to a car manufacturer?

according (a KOR ding) — in agreement with

appropriate (u PRO pri It) — correct or proper

automotive (aw to MO tiv) — having to do with automobiles or cars

chemical (KEM I kul) — a substance such as an acid, bleach, or alcohol

colorfast (KUL er fast) — won't fade

complete (kom PLET) — finished or ended

completed (kom PLET ed) — finished or ended

computer (kom PU ter) — a machine which can process, store, and retrieve large amounts of information very quickly

control (kon TROL) — to direct or take charge of

controlled (kon TROLD) — directed, or taken charge of

controls (kon TROLZ) — directs, or takes charge of

create (kre AT) — to make, or cause to be

customer (KUS tum er) — a person or business who buys a product or service

cycle (SI kul) — a set of actions that take place over and over again. The _dye cycle_ includes all the steps that are done in order to dye fabric.

demand (di MAND) — a strong need or desire. If a product is "in demand," many people want to buy it.

department (de PART ment) — a division, section, or branch of a business, government, or other organization

desired (de ZIRD) — wished for strongly

determines (de TER minz) — finds out or decides

direction (di REK shun) — the way toward which something faces, points, or moves

distribution (dis tri BU shun) — sending out

effect (u FEKT) — something that is caused by something else

fabric (FAB rik) — woven or knit cloth

fabrics (FAB riks) — woven or knit cloth

finish (FIN ish) — a treatment that makes the fabric able to do things such as repel dirt or water or be flame resistant

finishes (FIN ish ez) — treatments that make fabric able to do things such as repel dirt or water or be flame resistant

finishing (FIN ish ing) — putting on treatments that make fabric able to do things such as repel dirt or water or be flame resistant

formulas (FOR mu luz) — recipes or statements that tell the content of something

height (HIT) — how tall or high something is

individual (in du VIJ oo ul) — single, or separate

industry (IN du stri) — a branch of business, trade, or manufacturing

inexpensive (in eks PEN siv) — costing little, or low-priced

inspection (in SPEK shun) — careful examination, looking for faults or errors

inspectors (in SPEK torz) — people who carefully examine something, looking for faults and errors

level (LEV ul) — even and smooth, or having the same height everywhere

machines (mu SHENZ) — things that are made to do work

nap (nap) — fluffy, raised surface on fabric.

needles (NE dulz) — thin rods used in knitting

pattern (PAT ern) — design
pattern wheels (PAT ern WELZ) — devices that make it possible to create different designs or patterns in knit fabri

pile (pil) — the nap of a fabric, or the raised fibers on the surface of the fabric

polished (POL isht) — smooth and glossy

polyester (pol I ES ter) — a manmade fiber that is used alone or blended with another fiber to make fabric

Upholstery - 3

precise (pri SIS) — exact or accurate

pressure (PRESH er) — pushing against, or putting weight against something

processed (PROS est) — put through a set of steps to get an expected result

produce (pro DOOS) — make or manufacture

producing (pro DOOS Ing) — making or manufacturing

quality (KWOL I te) — worth or value. Quality control standards are the guidelines against which the finished fabric is tested to see if it is good enough to sell.

rapidly (RAP id le) — fast, or in a quick way

relatively (REL u tiv le) — as compared with something else

resistant (re ZIS tant) — able to withstand the action or effect of something such as fire or sunlight

rotary knives (RO ter e NIVZ) — knives which turn in a circular way. Rotary knives work much like blades on a lawn mower.

scuffing (SKUF ing) — rubbing to wear away the surface

shearing (SHIR ing) — cutting or clipping. When fabric is sheared, the nap is cut or clipped.

shiny (SHI ne) — glossy and bright

special (SPESH ul) — not for general use, but made for a particular purpose

specifications (spes u fu KA shunz) — a listing of details describing what is wanted or required

stabilize (STA bu liz) — make something stay the same and not change

standards (STAN durdz) — something against which other things are compared. Quality control standards are the guidelines against which the finished fabric is tested to see if it is good enough to sell.

sturdy (STER de) — strong and long-lasting

sueded (SWA did) — having a napped finish that makes the fabric look like suede, which is a very soft leather

surface (SER fis) — the outside or top

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tenter frames (TEN ter FRAMZ) — frames on which cloth is stretched so that is can dry evenly, without stretching, as it passes through a drying unit

through (throo) — passing from one end or side to the other

upholstery (up HOL ster e) — the cloth covering put on furniture and also put inside cars on the seats, door panels, and ceiling liners

utilizes (U ti liz ez) — makes use of

velvety (VEL vu te) — smooth and soft like velvet

width (width) — the space or distance from side to side

widths (widths) — the spaces or distances from side to side

Vocabulary exercises - test Item

inexpensive	utilize
inspection	complete
precise	control
relatively	customer
scuff	department
special	direction
specifications	distribute
stabilize	effect
standard	formula
sturdy	individual

The TEXTdisc Math Check
Instructor Key

SCORING:

	a	b	c
Level A Test - Whole Numbers			
Set 1 - Addition of whole numbers	1221	1306	896
Set 2 - Addition of money	$14.40	$6.50	$110.88
Set 3 - Subtraction of whole numbers	258	27	278
Set 4 - Subtraction of money	$5.02	$2.52	$16.70
Set 5 - Multiplication of whole numbers	14202	7659	7470
Set 6 - Multiplication of money	$59.76	$40.04	$227.50
Set 7 - Division of whole numbers (without remainders)	12	15	13
Set 8 - Division of whole numbers (with remainders)	9 r7	4 r5	11 r4
Set 9 - Division of money	$.98	$.27	$4.55
Set 10 - Finding an average	8	18	10
Level B Test - Fractions			
Set 1 - Addition of fractions (proper fractions)	1 11/12	1 17/20	2 1/5
Set 2 - Addition of fractions (mixed numbers)	4 1/8	37 7/12	36
Set 3 - Subtraction of fractions (proper fractions)	5/8	9/16	8/21
Set 4 - Subtraction of fractions (mixed numbers)	4 1/2	27 5/6	2 7/8
Set 5 - Multiplication of fractions (proper fractions)	5/12	1/5	3/4
Set 6 - Multiplication of fractions (mixed numbers)	185	36	80 1/2
Set 7 - Division of fractions (proper fractions)	8/15	1 1/4	1 1/2
Set 8 - Division of fractions (mixed numbers)	2 1/18	4 4/5	2 2/3
Level C Test - Decimals			
Set 1 - Addition of decimals	115.102	38.108	116.112
Set 2 - Subtraction of decimals	616.9	16.035	82.666
Set 3 - Multiplication of decimals	13.2264	58.275	13.6855
Set 4 - Division of decimals	4.5	36	5.5
Set 5 - Rounding off decimals to nearest tenth	25.5	16.9	17.7
Set 6 - Rounding off decimals to nearest hundredth	16.01	23.25	18.17
Set 7 - Rounding off decimals to nearest thousandth	25.031	14.988	7.123
Set 8 - Changing fractions to decimals	4.625	16.125	14.1875
Level D Test - Percents			
Set 1 - Find part when whole and percent are known	6.216	.1575	2.5000 (or 2.5)
Set 2 - Find percent when whole and part are known	40%	32%	3.5%
Set 3 - Find whole when percent and part are known	160	225	425

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The TEXTdisc Math Check

Name:_____ Date:_____

Note: On money questions, give answers in money format. Ex: $19.50
Please circle all answers.

SET 1 Addition of whole numbers

468	342	507
+753	+964	+389

SET 2 Addition of money

$10.77	$2.98	$101.32
+ 3.63	+3.52	+ 9.56

SET 3 Subtraction of whole numbers

806	175	907
-548	-148	-629

SET 4 Subtraction of money

$10.00	$15.50	$115.00
- 4.98	-12.98	- 98.30

SET 5 Multiplication of whole numbers

526	207	498
x 27	x 37	x 15

SET 6 Multiplication of money

$4.98	$1.54	$17.50
x 12	x 26	x 13

ERIC

Level A - Whole Numbers - page 2

Note: When giving answers on division questions, remainders are acceptable.

SET 7 Division of whole numbers

$$27\overline{)324} \qquad 78\overline{)1170} \qquad 35\overline{)455}$$

SET 8 Division of whole numbers

$$78\overline{)709} \qquad 23\overline{)97} \qquad 65\overline{)719}$$

SET 9 Division of money

$$14\overline{)\$13.72} \qquad 36\overline{)\$9.72} \qquad 12\overline{)\$54.60}$$

SET 10 Finding an average

Find the average of:

14, 8, 3, and 7   11, 15, and 28   3, 13, 6, and 18

The TEXTdisc Math Check

Name:_____ Date:_____

Note: *Reduce all answers to lowest terms.*
        Please circle all answers.

SET 1 Addition of fractions

a. $\dfrac{2}{3} + \dfrac{6}{8} + \dfrac{1}{2} =$

b. $\dfrac{3}{5} + \dfrac{1}{2} + \dfrac{3}{4} =$

c. $\dfrac{9}{10} + \dfrac{4}{5} + \dfrac{1}{2} =$

SET 2 Addition of fractions

$$
\begin{array}{r}
1\frac{1}{2} \\
+\,2\frac{5}{8} \\
\hline
\end{array}
\qquad
\begin{array}{r}
9\frac{3}{4} \\
16\frac{1}{3} \\
+\,11\frac{1}{2} \\
\hline
\end{array}
\qquad
\begin{array}{r}
17\frac{2}{3} \\
5\frac{5}{6} \\
+\,12\frac{1}{2} \\
\hline
\end{array}
$$

SET 3 Subtraction of fractions

$$
\begin{array}{r}
\frac{3}{4} \\
-\,\frac{1}{8} \\
\hline
\end{array}
\qquad
\begin{array}{r}
\frac{15}{16} \\
-\,\frac{3}{8} \\
\hline
\end{array}
\qquad
\begin{array}{r}
\frac{2}{3} \\
-\,\frac{2}{7} \\
\hline
\end{array}
$$

SET 4 Subtraction of fractions

$$
\begin{array}{r}
12\frac{1}{6} \\
-\,7\frac{2}{3} \\
\hline
\end{array}
\qquad
\begin{array}{r}
44\frac{2}{3} \\
-\,16\frac{5}{6} \\
\hline
\end{array}
\qquad
\begin{array}{r}
9\frac{1}{2} \\
-\,6\frac{5}{8} \\
\hline
\end{array}
$$

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Level B - Fractions - page 2

Note: Reduce all answers to lowest terms.

SET 5   Multiplication of fractions

a. $\frac{5}{8} \times \frac{2}{3} =$

b. $\frac{3}{5} \times \frac{1}{3} =$

c. $\frac{7}{8} \times \frac{6}{7} =$

SET 6   Multiplication of fractions

a. $24\frac{2}{3} \times 7\frac{1}{2} =$

b. $5\frac{2}{5} \times 6\frac{2}{3} =$

c. $17\frac{1}{2} \times 4\frac{3}{5} =$

SET 7   Division of fractions

a. $\frac{1}{3} \div \frac{5}{8} =$

b. $\frac{5}{6} \div \frac{2}{3} =$

c. $\frac{9}{10} \div \frac{3}{5} =$

SET 8   Division of fractions

a. $4\frac{5}{8} \div 2\frac{1}{4} =$

b. $10\frac{4}{5} \div 2\frac{1}{4} =$

c. $6\frac{1}{3} \div 2\frac{3}{8} =$

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The TEXTdisc Math Check

Name:_____ Date:_____

Note: *Please circle all answers.*

SET 1 Addition of decimals

a. 13.1 + 102 + .002 =

b. 16 + 13.098 + 9.01 =

c. 1.01 + 113.1 + 2.002 =

SET 2 Subtraction of decimals

676 - 59.1 =   31.02 - 14.985 =   100 - 17.334 =

SET 3 Multiplication of decimals

13.2 x 1.002 =   9.25 x 6.3 =   27.1 x .505 =

SET 4 Division of decimals

42.75 ÷ 9.5 =   45 ÷ 1.25 =   4.125 ÷ .75 =

Level C - Decimals - page 2

SET 5 Round to the nearest tenth

25.48   16.85   17.742

SET 6 Round to the nearest hundredth

16.007   23.2536   18.16932

SET 7 Round to the nearest thousandth

25.0306   14.98765   7.123432

SET 8 Change a fraction to a decimal

$4\frac{5}{8} =$ $16\frac{1}{8} =$ $14\frac{3}{16} =$

The TEXTdisc Math Check

Name:_____ Date:_____

Note: *Please circle all answers.*

SET 1 Find part when whole and percent are known

a. 12% of 51.8 is _____

b. 3.5% of 4.5 is _____

c. 6.25% of 40 is _____

SET 2 Find percent when whole and part are known

a. What % of $6.25 is $2.50?

b. What % of 16.5 is 5.28?

c. What % of 24.5 is .8575?

SET 3 Find whole when percent and part are known

a. 24 is 15% of _____

b. 5.625 is 2.5% of _____

c. 23.375 is 5.5% of _____

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Section III

Third-party evaluation of the Workplace Literacy System project
performed by Literacy South on Project #V198A2006

National Demonstration
Workplace Literacy Project
Sara Lee Knit Products
Winston-Salem, NC

PHASE 2

Evaluation Report

Andrew F. Pates
Hanna Fingeret

Literacy South
Durham, NC

January 1994

ACKNOWLEDGMENTS

TABLE OF CONTENTS

INTRODUCTION

This evaluation report covers Phase 2 of the Workplace Literacy System Project at Sara Lee Knit Products in Winston-Salem, NC, from November 1992 to November 1993.

The Sara Lee Educational Development Center (SLED) was described in the evaluation report for Phase 1 of the Project,[1] which described the background and purposes of the Project, the organization of SLED and the main programs provided. No major changes in direction occurred in the operation of SLED during Phase 2 so this report does not repeat the discussion of the organization of SLED, the overall composition and numbers of the users, and the courses offered. Instead, certain aspects of SLED's working are looked at in more detail. These particularly concern the experience of the learners at SLED; the use of the interactive Text Disc developed by Interactive Knowledge Inc.; the outcomes of time spent at SLED for learners; and the impact of SLED for the company.

Issues Arising from the Phase 1 Report

The Phase 1 report made some recommendations about issues to be studied in a subsequent evaluation:

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1. *Tracking users.* Users of SLED should be tracked more closely over a period of at least a year, in terms of attendance, activity during presence in the Center, absence and reasons for it, and achievements in the activities being worked on.

2. *Dropouts* should be traced and interviewed to find out why they no longer are using SLED.

3. *Exit interviews* should be conducted by evaluators for people identified by SLED staff as completing courses of study.

4. *Non-starters and non-users* should be interviewed more extensively to find out why they are not using the facility.

5. *Curriculum* should be looked at in more depth, in particular to identify: the interaction of instructor-led and computer-based learning; the impact of different inputs; and to clarify the range of work-based instructional elements present and possible, and the relevant value and impact of each.

These suggestions were, however, contingent upon recommendations about developments in the program itself, all of which had not at this time been implemented. It was decided therefore in a meeting of all the parties involved, at

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[1]Pates, Andrew and Fingeret, Hanna. "Evaluation Report: National Demonstration Workplace Literacy Project, Sara Lee Knit Products, Winston-Salem, NC" Durham, NC: Literacy South, October, 1992.

the end of 1992, to concentrate on the outcomes of participating in SLED that could be documented.

Evaluation Objectives

The specific purposes of the evaluation were outlined in an Evaluation Plan[2] that was written subsequently, in January 1993:

FOR OUR PHASE 2 REPORT, we want to look at:

• The experience for learners of participating in the learning center.

• The impact of participating in SLED on learners' subsequent lives.

• The working of the GED and JES classes.

• Whether there are any measurable outcomes of the GED and JES classes and what these are.

• The extent and nature of CAI use in SLED.

• The developing profile of SLED users.

THE OUTCOMES will be:

• An analysis of the outcomes and impact on subsequent lives of former SLED students.

• An analysis of the experience of learning at SLED .

• An analysis of pre and post test scores .

• An analysis of the usage of computer aided instruction .

• An evaluation report .

The methods to be used in this work are described in the Appendix.

Developments at SLED Since 1992

The main developments at SLED during this period involved staff changes, the completion of the five modules of the Text Disc, and the expansion of the work of the Center to cover workers at the West Point Distribution facility (about 10% of the staff at that facility enrolled). Jane Barnhardt and Carolyn Jones joined the staff to replace Doris Kendrick and Roni Valenti, Jane teaching the Job Enhancement Skills (JES) class and providing administrative backup, Carolyn teaching the High School Equivalency Preparation (GED) class. To provide some

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[2] Pates, Andrew. "Sara Lee Workplace Literacy Project: Phase 2 Evaluation Plan." Durham, NC: Literacy South, January, 1993.

sense of the numbers of adults participating at any one time, there were 135 workers enrolled in the CAI system in February, 1993.

Summary of Findings for Phase 2

1. Work is a central fact in the lives of SLED learners. They take it very seriously, it affects everything that they do, and it determines whether or not they can do certain things, like engaging in educational activities. Learners are positive and thoughtful about ways of improving their work and their working lives. Learners value highly what SLED represents: it makes a statement about Sara Lee's commitment to them and it offers the opportunity to engage in education, something which is not easy for people working long, tiring shifts.

2. The most important single outcome for the learners was the development in their self-confidence, adaptability and commitment to engage in further new activities, in learning, work, and in their lives. This self-development was the foundation on which other outcomes developed.

The most useful skills learned have been generic rather than specific. The ability to communicate, to adapt and to learn new processes is more important than just learning the operations involved in one process.

3. The experience of learning at SLED contributed to both work performance and job mobility.

4. Computers have played a critical and central role in SLED. The integral use of computers has fostered computer literacy and, for some people, other more advanced computer skills. This feature of SLED has still more untapped potential. For this to be realized, SLED needs staff who are both computer confident and competent literacy teachers. The staff now working at SLED has this capability.

5. The Text Disc has been a useful addition, but has not been central to the curriculum at SLED. It might have much more power in a stand-alone context, or if it were central to the curriculum. For that to happen, many more units would be needed as well as additional work stations.

6. However, workplace contextual learning material is important -- it has been introduced in a variety of ways, including, but not limited to, the Text Disc. It can be inexpensive and does not need to focus on narrow job task analysis.

7. The staff at SLED are trusted by learners and make a considerable positive contribution to SLED's impact. They make SLED a facility that workers turn to for help and support, and a place where they feel open to taking the risks involved in learning as adults.

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8. The total SLED facility is seen by the workers as a benefit of working at SLKP.

9. SLED has played an important role in helping both the company and the workers handle a period of continuous change. The learners attitudes about the company and SLED at the end of this project period were different than the attitudes seen when the first interviews were conducted during Phase 1. SLED supports the company's efforts to create change at the plant and the evidence supports the thesis that the provision of workplace literacy can assist implementation of changes in company practices.

10. The commitment of the company has been essential, and will continue to be essential if SLED is to survive and continue to develop.

11. Workers who are learning new skills benefit from exposure to and involvement in a range of activities in which they can practice their new skills. It is also important that SLED facilitates access to a range of related activities that provide opportunities for learners to use the skills that they are developing in SLED.

12. The location of SLED as a free standing unit at SLKP has been important. It would have been different if it had been located in a training department. The links with Forsyth Technical Community College were important for SLED in its being able to establish an effective role. There was power in the work of SLED being seen as broad-based education rather than as narrow job training.

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THE SLED EXPERIENCE

"Deborah and them really gave me confidence in myself, you know. ... once I went to SLED, and they really worked with me, Doris, Debbie - Deborah, I call her Debbie, Deborah - Roni, she was there then. They just helped me, they gave me confidence in myself." [Grace, past JES student]

SLED is a large room without windows, ₴⌐⁺ ⁺o other offices and across a passage from the cafeteria, in the center of t̩ ⁌e Knit Products factory site on Stratford Road, Winston-Salem. The room t (though there is usually classical music playing quietly on a radio) and is not disturbed by noise from the plant. Along one side of the room are computers with the Computer Aided Instruction (CAI) programs at roomy work stations while the other side of the room is more open with several large tables where students can work in groups. Two members of staff have desks at the end of the room by the door; another has hers at the far end, where there are also some further computer stations. The three computers with the Text Disc are on the opposite side of the room from the main computer stations. The workplace literacy specialist, Deborah Gaddy, has her office outside this main room of the learning center. Opposite her room is an office used for one-on-one tutoring or for individuals to have some privacy when completing tests. The quiet and peace are especially notable because the Center is in the middle of a textile plant where the noise is such that you have to wear ear protectors in many areas.

The staff have jars of candy on their desks and coffee is always available. At any time, there will be one or two people working on the computers and there are nearly always people coming in and out. They are greeted by name and the atmosphere is friendly, welcoming and relaxed. The keynote of the SLED experience is that friendly relationship that enables some SLED users to call Deborah 'Debbie', that makes them think of the Center first of all in terms of its staff.

"I like my teachers. I'm on the math right now. And then I've done the reading part, I've finished all the basics. Couldn't ask for any better teachers than we got. I look forward to coming over here and seeing my teachers every day, sometimes I just come over here and sit down and talk to June during her lunch time. Just sit down and talk to her. They're friends." [Linda, student in JES class]

The success of SLED lies, however, not in the atmosphere that the staff succeed in creating but in how it is experienced by the users, the learners, and the impact that it has on them. In this, they are like all people engaged in adult education: they are people with lives - the majority of their lives - outside the educational facility. For adult education to work it must have a sufficient impact on the learner to be worth the time and trouble invested, contrasted with all the other issues they have to deal with. For SLED users, these other issues are considerable: some are to do with working at SLKP, some are to do with the issues of living and surviving in the United States in 1993.

This Chapter sets the scene for the rest of the Report by sharing some of the issues the learners are dealing with, as they relate to their time at SLED. It gives the flavor of the experience as well as letting the learners speak for themselves. These learners were the current students in the GED and JES classes and students who had completed their study in the same classes the previous year. They also include some learners using just the computer-based CAI system. The data from these learners is remarkably consistent; these adults have histories and experience, current problems to deal with, aspirations, awareness, motivation and the capacity to engage in struggle to survive and to improve their lives. There is not a single factor involved in why and how they use SLED, but an interrelated mix of issues that also define who they are.

The data extracts below frequently address several related themes. We have included extended excerpts from interview transcripts to illustrate these relationships. Students' names have been changed to protect confidentiality.

The dominant factor in these learners' lives is work. They share the experience of working in the same plant, many of them engaged in long (12 hour) shifts. Their working schedule dominates their lives totally, including, consequently, their capacity to use educational facilities.

> "We just finished up for the changeover and we had to work and I'm just totally bombed when I finish up a shift and today was my rest day. So I think my mind is trying to rest here. When I get through work, I have to like that first day, and I do very little. I have to rest and recuperate and let my body repair itself. I'll maybe pick up a little bit. Usually I call my mother and talk - do some talking on the phone and do those things that I don't have time to do when I'm working. Usually I try to take that first day and then I have so much backed up I need to do, I try to get that. When you work 12 hours from 7:00 to 7:00, it's extremely hard for me to do anything but get a meal and get ready to come back to work the next day. This week I had a little shopping I had to do of various things and both of my children were gone on trips and they come back in Tuesday night, and all we did then Tuesday night was talk with them about how their trip was. I have two or three places I stop on the way home and I was thinking about looking at a pair of shoes and all for work. And I have to go by the bank. We work like Thursday, Friday and Saturday last week, Monday, Tuesday, and Wednesday of this week, and I haven't had the chance to go to the bank." [Michelle, student in JES class]

Many of the SLKP employees are women, many with families and children; family activities and child-care responsibilities are a dominant concern when not working. The children may, in turn, prove to be a stimulus that engages them in learning, and may even provide inspiration, support, and role models for the parents.

> "Working and thinking that some day I'd like to go back to school but I just never did until my daughter was graduating in '91, and I got to thinking I don't have my diploma and my daughter's going to graduate. And she kind of encouraged me. She was always real smart in school and she kept saying 'yeah, I'll help you mommie, if you want to go back' and I was really afraid to because I was afraid that I would fail - and it had been a long time since I've been in school, and being in the job that I had, it was more or like a robot job, in which you didn't have to use your mind. And it was really an experience. So she told me to come back and try." [Karen, past GED student]

Children and families can also be a source of extra stress and anxiety, an understandable priority over studying.

> "I had a few home problems and between that and the GED and the work up here I just felt like it was more than I could handle at the time. I had some problems with my daughter and it's taken awhile to get her back on her feet - and I just pull all of my work toward that - when I finished my job here and you know, things are working out good there. That's why I sort of let this slide because we went to counseling and all that. I did everything in my power to help her get back on her feet. She's here now, we brought her back home. We brought her home and she's been clean for a year now. It's not the teachers or anything, I said I did have those few problems and it just seems like it's sort of hard for me to get back into it. Once you quit doing something - it's just very hard to get back into it." [Amy, past GED student]

Dealing with their own children is a source of reflection on their own childhood, and especially on their experience of schooling and education, both as motivating force in their child rearing and in their aspiration to improve their education.

> "I wanted more of an education. I quit in the seventh grade with a fifth grade education, I had a lot of problems when I was growing up and I really lost interest in school and in myself and everything around. But through aging, you learn how much you need these things, so I want to do better for myself. And I have my little girl and I want better for her and I want to have the education to be able to say I've experienced it and I want to help you with what I can and I'll be able to. So that's my main purpose. Just can't get enough time in. When my little girl goes back to school I'll be able to get more time in. I could come every day if I could but I'm the type of person that if I'm around people that have inspiration, then I can inspire with them, but where I'm at now in my department, I don't talk to people that much because I'm not inspired - I'm there making a living. The main thing that I liked about when I came to work here was that they did have the school, so I could try to make something of myself." [Judy, student in JES class]

The experience of schooling has a long lasting impact on most people and typically haunts people who did not do well at it.

> "I was going to be learning about the computer itself, but I see that there's more studying really in the computer than learning about the keys itself. But since I've got involved in it, I enjoy it. And I'm learning math again, language, and all that, it's been years since I've been in school. And Jane, she's helping me out with my math and I didn't learn fractions and all that stuff when I was going to school, and now she's helping. I found out I can do some math I didn't know nothing about before." [Pat, student in jES class]

Becoming engaged in a facility like SLED may present more demands on their time but it can also begin to provide an extra source of support directly and through its enhancement of confidence.

> "I seen the notice and then heard people talking about it. I enjoyed coming for a pretty good while, close to a year, learning and stuff. Just right now I got a lot of personal problems, you got to have your mind right on the work and stuff. So that was my main reason I quit coming. And as far as the learning part and stuff like that, I feel that it was good. The teachers were good. It made you feel better. It makes you feel better about yourself, you feel like you know a little bit more than what you did. In case I would ever have to get another job or want to get another job,

it would be nice to have. Without my GED, I wouldn't get a promotion." [Mary, past GED student]

It may be seen as a route to another job, at Sara Lee or elsewhere, and this widespread sense of the possibility of other jobs may be generalized as in the previous quote, or more focused:

"I was a knitter, I made cloth, I ran knitting machines (for twelve years). I'm allergic to dust, cotton dust, and I went to an allergist and I found out that was my main thing, the main reason I was trying to better myself. Knitting is such a physical, mental, oh, it's hard on you all the way around. I just felt like there would be opportunities when they started the printing department, they said there would be opportunities, you could move. And I figured well, I've got my GED, and I plan on taking more courses, and you can move in this department. Yes, this sounds like a good idea, so I moved." [Cathy, past GED student]

The aspiration to change or improve jobs implies participation in a continuum of education and training opportunities, of which SLED is only a beginning.

"What I more or less was doing, I was taking that business computer programming, I wanted something to where if I lost my job or something, I could have something to fall back on. And I didn't realize these classes here, you didn't get a degree, two year or four year degree. But it helped me to bring myself up to where I should have been, because I've been out of school so long." [Lois, past JES student]

Learners have frequently explored or tried other further education previously, and it is a recurring experience to find that SLED is the first occasion when they are successful.

"I work in the cutting department. I've been there, it's been about four years and nine months. And I run a machine that cuts panties, some tee shirts I cut at times. The reason for me wanting to come to school because I didn't get a chance to finish college so it gave me a chance to try to enhance my job skills as well as my educational background, that I wanted to fulfill. There was another time I tried to go to Forsyth Tech and at that particular time there was a problem with transportation, so therefore I cut loose on it. I started last year in August or September, about a year. And I've been enjoying it. It's helped me to apply a lot of - really refreshes a lot of things that I, once upon a time, used to know, that I had forgotten about, wasn't using on an everyday basis, just such as math, and that really i   eased my knowledge, but the teacher helping as well as being on the computer. I've made a lot of progress, and I'm willing to go farther. It has brought me out in a lot of ways. I'm on the newspaper staff, and I've input a lot of things that employees may have that need to be expressed, something that I felt like I probably wouldn't had before, because of being a little shy and not as outgoing." [Sally, student in JES class]

Clearly everyone who engages in further education will not succeed in using the education to secure immediate job advancement. Many of the SLED learners are realistic in this understanding and still value the experience of "completing" their education, though they may not come to that understanding immediately.

"If they're going to do it for themselves, if they haven't finished high-school, I would suggest yes. But if they think they're going to better, promoted job, I won't suggest it. And it's not just me, because there are some people that came here too, and they're in the same situation. So if they want to finish, I say yes, I would recommend it. If they get those high hopes like I did, then I would say you'd better don't think like that. If you want to improve yourself with more

education, I say it's great, somebody trying to improve in their life. And you want to study, this is a real good place to come. I would recommend anybody that for personal reasons. There's a lot of people think - I heard them - they haven't asked me, but I heard people say 'well I want to go there and finish school because I think I might get a better job, I get a chance to get awarded one'. I won't say nothing, I haven't said nothing to them. They haven't said it to me, but I overhead it a couple of times, people saying that." [Rudi, past GED student]

Completing their education is less important for many than refreshing, reviewing or catching up on skills that they think they never learned or that they feel they have lost through lack of use.

"It's been helping me out, it's helping me remember stuff I lost in school that I learned and it's come back now, and it's helped me with my reading and stuff. And the computer is good, because everything's going to computers and I need to learn that, stay up with everybody. Just really to get back in the swing of learning and doing things that I've forgotten, and there's things that I need to work on and now - I'm more settled down - as a matter of fact I learn more now since I'm more settled down, and it's more interesting to me, back in high-school, you really didn't want to go to school, but you had to. And now since you're out you go back and you're more interested in it because you want to learn the things that you didn't learn. I like it because I can do it after work or with the class I'm doing now, I can do it during work. It's really more convenient because I can get off work and study." [Chuck, student in JES class]

The opportunity to get experience with computers is an important part of this desire to extend their education. Computers were not part of their education but they understand how universal their impact is now.

The existence of SLED is a major motivating factor in getting learners at SLKP started. The support the company provides by paying for half their time in the GED and JES courses adds to the value of the experience and provides additional motivation, though this does not seem to be critical in determining whether or not they attend.

"When I saw that pamphlet, I said I am going to do this. I came twice a week, I came three times, they paid me for some of the time. I said even if I have to go on my own time, I'm going to do it. And I did. I really did. Whoever else that went, came through SLED, if they'd be patient, I'd think they would get something. I saw the little pamphlet about going to school, I said yeah, I'm going to take it. And I took it." [Grace, past JES student]

The individual learner's motivation is the driving force. This motivation needs to be considerable, however, because of the learners' past experience of failure, and their consequent very strong feelings of inadequacy.

"I heard it since the day before it started, and I never had the courage, since I didn't finish my high-school - I heard it and I seen people come and they talk about it and they was fine, and it really helps finish your high-school, get your GED diploma. But I never had the courage.... One time talked to the lady in charge here and she gave me everything, all the information I needed, but I didn't do it. So last year I finally said I'm going to have to go through it, that's how I started. I think it was in the Spring of 1992 when I started. I went in there and got the GED exams or test before Christmas. When I went to school I felt belittled because I felt I couldn't keep up with the rest of the class. Because I'd lost so much before I got there, it was ahead of me, you know what I'm saying? And with this, there's nobody there except for you,

and it's got the little things where you can mash if you can't pronounce the word and it goes to the meaning and it pronounces it for you and reads what the meaning is. And if you can't read, then you've got that. Well I can read, but it helps to break it down and you don't have to feel like somebody's watching me and I've got to hide you know? Because some people, I think that's why they don't go for an education, because they're so embarrassed of how little they do know. And they've just got to realize if you take the step on something as simple as that, it might be slow, but it's better than nothing." [Judy, student in JES class]

These feelings are reinforced by the social stigma attached to illiteracy, which exists among SLKP workers as everywhere else. Many of the learners have already tried to work on their basic skills as adults, failed, and SLED represents another attempt.

"And I tried back through a course that was not here, because they hadn't started here yet, it was through a church. And I failed the first time, and I knew that I had a lot of thinking to do that I had to really go back and learn my times table, and my spelling was terrible, and I was afraid that I would fail at it again. But, I thought, well, I'll try it again, and my husband, he was encouraging and so I came over here and these teachers really, really helped me a lot, Doris and Deborah and they're very special people, very special. And they made me feel special and made me feel like if I did fail, try it again. There's no crime against it - so they really encouraged me, and it's helped me a lot to think. I would guess I was really wasting my life, as a robot job not even reading. I wouldn't even read a magazine or anything. But now I went back to writing a little poetry that I used to do many years ago. And I can read books now and I can read the whole book, and remember what I read, and concentrate more, and it's really helped me a lot." [Karen, past GED student]

The experience of participating in SLED leads to learning language, math and computer skills, and it provides learners with the opportunity to come to terms with their low self-esteem in relation to education. Participation in a well-run educational program that focuses primarily on individual needs facilitates their self-development. Working together as a group provides mutual support and enables them to see that they are not unique in experiencing such problems.

"At first people here at Stratford was kind of hesitating about even going over here and signing up. Like they felt I'm going to look stupid or dumb because a lot of people have been out of school for years. I felt the same way. And after everybody got in there and they seen nobody's different from the other person, we're all willing to learn, it went along pretty good because we all worked together and the ones that didn't know, we helped each other, so that's the way it started classroom wise, and then we started working on computers and stuff. There's a couple of people I work with now, this one boy, he can't read that good and I've tried to talk him into coming over here and all it is, he don't want people to know. And I said well you don't have to let people know what you're coming over here and taking. Just go talk to the teacher and they'll help you. Because I know he's got his diploma, but when they did is they just pushed him through school just to get him on through school. But I've tried to get him to come over here and he feels just like we did, like I don't know if we can do it, it's going to be hard, we didn't know what we was getting into. But I'm saying, everybody had to help each other, and the teachers, we had great teachers here, and they were patient and willing to help us." [Lois, past JES student]

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This sharing also contributes to their learning.

> "I like the open discussion and the questions and that helped more than just looking in a book and trying to figure something out." [Karen, past GED student]

SLED acts as a facilitator by:

• being flexible in the face of uncertain and demanding work schedules:

> "It runs up to November and then I guess I'll sign up again. But it's good, but sometimes it interferes with our work schedules because days that we've had to work a whole day and they really need me on the job, that's one, you know one of the things they don't want to let you go because they need you on the job that day. But you can always come in the next day and make it up, or the day you're not working." [Chuck, student in JES class]

• having an impact on their work:

> "Since coming here and study, they take you, teach you very well. The teachers are real good. And you learn, and they help you at work too. Because since you can see can you do something like this, maybe you can do better at work. But it helps a lot." [Rudi, past GED student]

• providing a sense of enjoyment, revealing that there are areas where the learner can not just cope but can be fulfilled:

> "I was taking math which I really enjoyed that, and, let's see we had some English, that was all right, but I really liked the math. I think there was some spelling, and like we had to look up in the dictionary and find the meaning of certain words and we wrote a check or learned how to write checks or something like that. And I did a little bit on the computer. I did some math on the computer. I enjoyed it." [Sandy, past JES student]

• providing individually focused instruction:

> "I ran into - especially in the geometry parts, and the algebra and stuff like that, I found it a little easier working with the teacher. Because she would sit down with you and explain with you. You know, how it's done and how to work the problems out. I am not a very good writer. When it comes to essays, I can talk, but when it comes to putting it down paper, my mind just goes blank, what to say next, what to do next. But - that was my worst subject I suppose." [Amy, past GED student]

• having accessible staff who are proactive in their relationships with the learners:

> "I see her passing (Deborah), I see her, I go to the awards ceremonies they have in the conference room, when they have somebody graduating and give out the awards, and I see her there. And she comes by to see me at work and she is the nicest person I believe I've ever met. She is so genuine, caring. I feel just right at home, I can come right on in." [Cathy, past GED student]

• allowing the learners to determine the speed of their progress:

> "The teachers here, they don't tend to look for faults, they just look for what they can do to help you or encourage you. When I'm able to get my GED, the teacher's already said that she

feels that I might be able to pass it, but in my mind, I want to know things that, I know what I know and I know what I want to know. And I don't want to take the test until in my mind I'm fulfilled. So that there's no guessing. I know what I'm saying and know that I'm ready to go to that next step. I'm tougher on myself than other people would be. I feel that if I give 100%, then I can't get no more out of it, and that's what I'm going for, is 100%." [Judy, student in JES class]

• being flexible in helping learners work in ways that are comfortable to them, such as helping one learner to take his GED in Spanish:

"Since I was studying all this time in English, it took me by surprise because I haven't practiced my Spanish in a long time, and I was kind of shaky at first, afraid - because, like I say, I just wanted to do the essay in Spanish. But then, I started reading and I just picked it up and I'd remember. Everything that I learned here, I saw when I was in school. And I remembered everything, everything just come back. And it was not hard for me to change from English to Spanish , it was not hard to do, since I studied a lot when I was home, back home. And I think that might have something to do with it. The reason was that, like I said, my writing was pretty bad, it's not too good. And so I heard that they got it, they have it in Spanish, so I decided I'll ask them if I can take it in Spanish, just the essay. So they ordered. I had to do the pretest in English, because everything was done in English. And they said go ahead and do it in Spanish and see how you do, so if you don't pass it, go ahead and do it in English. First time I did right. They said it was pretty good, over three hundred and ... I don't know, they said it was good. (laughter)" [Rudi, past GED student]

• having staff who understand the commitment being made by the learners:

"Doris came, sometimes five days a week because she didn't start working - she worked from four until midnight. Then she'd get some sleep and then come in to SLED about 10:00 in the morning, study until 3:00 pm, then go to work from 4:00 pm to midnight. She was amazing. That was exciting to see somebody so I see good things for Doris. I think that they've certainly recognized over at distribution what she's attained and what her abilities are. That's exciting." [Jane Barnhardt, SLED instructor]

All of these factors working together represent the experience of participation in SLED.

"I saw the literature on it and I know that I needed to improve some skills, reading skills and mathematical skills and, just spelling skills, some literature skills, I needed improvement in all my skills, I needed an update - an enhancement on it. I mean it's working, like algebra, I never took algebra before and I enjoy it, and it really helps me. I was expecting it to be a headache but it's really enjoyable once you start it, getting into it is really enjoyable. I haven't finished, I used to be on 12 hours but they took me off of the 12 hour shift and my workload has not allowed me to be up here as I would desire to be. She has us do essays on things that we've done in our past, or I had to do an essay on how do we feel about things, and helping like keep financial records. They're working on the computer learning what other people's job, on that other program, the Text Disc, learning that what's involved in other people's job and seeing how your job is affected by it. Learning your algebra and the skills of typing, learning the proper grammar, punctuations on all those things. I think that we have a good staff up here and the teachers definitely, Deborah and Carol, Jane, they support their people and they encourage their people when people think that they can't do it, they really encourage them and show them that they can. And I see a lot of people that come in and they didn't think they was able to do this and do that, and by their encouragement and by them sticking with them

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you know, they've learned to know that they can do it. I just thank God for them being here."
[Peter, student in JES class]

It is important to reiterate that these characteristics of SLED are critical because they respond to the large number of factors inhibiting the participants' capacity to learn.

Educational facilities outside SLKP certainly do not tailor their facilities for people working 12 hour shifts:

"It was difficult because my children were small. I didn't have the time. And then when they got big enough that I could, I was working a 12 hour shift, and the community colleges have classes on Tuesdays and Wednesdays, like at 6:00, or 9:00 in the morning. And I was either working the first three or the last three. I couldn't attend both classes. You can't do it. That's the thing about community college, you'll see the signs about GED classes, well there is a lot of corporations that work 12 hours now. Like you work first of the week for like four weeks, the last of the week about four weeks. There's no way, you can't do it. That's why it was so convenient when they came here." [Cathy, past GED student]

The shifts are a major constraint on workers' ability to get access to the SLED facility, and the need to work and earn whenever and wherever possible is everyone's dominant concern.

"I keep saying I'm coming back, I'm coming back, I'm coming back, which was like okay - it would've been like when we was working the half a day - we would get off at 1:00, and I would always say well I'm going for resign up, which I did, I did sign up, but I just never did come back up. Because what had happened was we would get off say at 1:00, and then see I would just work all the way to 7:00, because it would be overtime for me and, right after I came out of the hospital then I had to go back in the hospital that February for another operation, and I just, got behind on money and stuff so I was just trying to make all the money that I could. So I just never back over here because of all the overtime I could grab, I was just grabbing. That's basically what happened as to why, but I was - I told I think it was Deborah, I did sign back up, and I had intended on coming but when I had to back into the hospital, my bills got behind so I just started grabbing overtime and I just never made it back, but I enjoyed it. Especially the math was a challenge. We had a wonderful math teacher, Roni, oh, she was great, you know. But I just never got back." [Sandy, past JES student]

Learners bring a capacity and willingness to engage in struggle that is probably the ultimate key to the success of adult education facilities like SLED.

SLED helps adults understand that learning as an adult can be rewarding and is ongoing.

"Thursday I took the classroom part and some on computer and stuff. Everything they offered here in the classroom and I had finished all everyone of them, and they said well I didn't need to come back over here, I was kind of disappointed in that. But then they started up this other course with Lotus and word processing stuff like that, and the management can only take it at first, and then I started in that and I just got started, and they started this other thing at work called MIQ, Method for Improving Quality. So that took me from the classroom, I mean from working on the computer here, so I've not finished the word processing Lotus yet. But I was telling Deborah, I thought she was coming over to jump on me for not coming back to school, and she said 'No, well I wondered, but no, this is more important, you do this', she said 'Boy,

they've got plans for you'. But I was surprised at what they had to offer here in the SLED, for everybody, because working 12 hour shifts, you can't go back to school if you wanted to." [Lois, past JES student]

"I've been on three of the computers, and I'm on the third one now and it's on vocabularies. And my main thing right now is being able to pick up on my reading, and right now, what I was working on before I came here was on, I was doing some spelling on some words that I probably should have knew back in the fifth or sixth grade, I didn't know. And to me, it's exciting. You get so excited you start telling everybody." [Judy, student in JES class]

"I'm going to get some tutoring for English, I'm having a terrible time. I talk on the phone a lot. And I'm not sure that I'm saying the right thing at the right time. So, I'm going to come back. I don't want to just get on the phone and sound so countrified, so I'm going to let her help me with my English. ... I'm going to let Jane tutor me for awhile and then I'm going to go back and see can I get a degree." [Grace, past JES student]

"I stopped for now. Because I want to do something else, but I'm planning to. Right now I'm thinking about coming back and I was thinking about taking English. See I'm not writing pretty good English, I can write, but I want to be better, learn it real good, so I'm trying to come back again, and try it, and see if I can do something else." [Rudi, past GED student]

Having allowed the learners to set the scene, to give the flavor of their experience, the rest of the report looks at the impact of the work of SLED in different areas.

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COMPUTERS AT SLED

The Facility

The computer learning facility at SLED includes 17 computer stations, three of which are devoted to the Text Disc; ten to BASE (Basic Academic Skills for Employment); and four to the CCC (Computer Curriculum Corporation) Computer Aided Instruction courses. The CCC curriculum was described in the Phase 1 Report. The Text Disc has in many ways been an add-on, though it was seen as a key part of the project, and is discussed separately in the next Chapter.

"One is the Text Disc, what it does is teaching you about other jobs and it's teaching you to search and find information also. And the BASE, what the BASE is doing, it's taking you back and giving you a refresher course in all the things that you did when you was in high-school or whatever. It's refreshening your memory and showing you, it shows you what areas you need work in. And also over on the other computer over there, I forget what you call that one - but the one that teaches you algebra and the one that teaches you how to set up graphs and all that, it's really good because it carries you and then it takes you back and causes you to review the things that you went through and shows you what you're strong in and what you're weak in also. It helps you to learn, and it really helps you to teach yourself. And that's a key thing in it, learning to teach yourself. I like them, I mean I just like them all." [Peter, student in JES class]

Computers as Learning Tools

Computers are used as the main medium of instruction for all the classes.

"I did a lot. Either you pick out your book or go onto the computer. But when I first started, the computer was the main that I was into and learning, get to learn and get to know one another, things like that. And as the program is real good, I like it. Because it's not just teach you English and math and all that stuff, but you get to know a computer. Because I was taking a word processor, English as a second language, and it was good, it would help a lot. I did like it, they're not hard to learn, just if you want to do it, it won't be a problem. The books comes mostly when the teacher was here, like on Tuesdays and Thursday we come to class, and we pick out the books. And then when you want to come on your own time, the computer was the main source, or main thing that I use." [Rudi, past GED student]

The instruction is individualized with the subject and level determined by the instructors on the basis of tests the students complete on entry.

"They are all in some form or another signed on to a course in computer-assisted instruction, and Doris gives them time during class to work on that, and she also gives specific assignments in the BASE program that targets individual requests, like if one person wants to work on decimals, then she will make assignments. And we make individualized discs so that the program's kind of tailor made to their request." [Deborah Gaddy, SLED Manager]

The instructors also work in a support role, helping when the learners get stuck.

"Because of all the variety of computer programs that I have available, each student has his or her own program of need. I am free to move them around if I see that they're achieving at a certain level, and they can move on. For instance, I have one student who has been working on

the BASE program, became quite confident and he's gone on to work on algebra, which he's never had in school. And he knows that I'm here when he gets stuck. And there are times when he and I sit down and work together to make things a little clearer to him than what he's doing on the computer. So I work with him that way." [Jane Barnhardt, SLED instructor]

Because of the small numbers involved, students can call on instructors as needed, but the individualization of the computer-based learning also means that learners can work at SLED whenever they have time. This joint use of computer and individual instruction is at the core of the SLED approach to teaching.

"We had the GED on the computer where you could go through the different courses that would help you, when you did go through the different tests, as you progress, to get you prepared for the GED. The reading, math, science and things like that, and if I had run into problems that I needed help with, the help was there, it was up to me to ask for it. When the teachers are here we have classes, or they did have the classes from 5:30 to 8:30 in the evenings, Tuesdays and Thursdays. When I was coming, I came during the classes. And I would come over some during my spare time and study or work on the computer or whatever." [Amy, past GED student]

GED

The GED courses are based on the CCC GED modules with the BASE used as backup. In practice, they also have a diagnostic function.

"GED class is supposed to be a review. The people in it are supposed to have had pretty good grades all the way through maybe 9th, 10th, 11th, high-school. They're supposed to be at least on the 9th grade level. That's the ideal. In most cases, it's not the actuality. And in most cases, especially in the math, it's not the review they need. They need to learn the math for the first time. The GED program on the CCC is a review. Now it's good for the science, the social studies and arts and literature. We don't even cover those subjects in the regular GED classes through Forsyth Tech. We say if you want to get them, you need to get the books and just review through. Most of the times we have found if your math, your graph reading skills and your reading skills are okay, you can do those three parts without a lot of trouble. So if you are on the grade level you're supposed to be as a GED student, you can sit down and review with the computers and you should be fine. Many times what happens is that the students start on the math review and we need to take them off of that and do small group and the BASE program because the math on that is much more specific, explains it a lot better. " [Jane Barnhardt, SLED instructor]

JES

The JES class is also based on the CCC programs, especially the "Essentials for Living and Working", and the BASE. Since the JES class is time- rather than outcome-based, there is less pressure to stick with the one program. They have also been using the Text Disc.

"In the JES class, the students are almost always on the computers. And they may be doing several things - at one time we had them working on the CCC, the Life Skills and Work Skill program - but since we got the two Text Discs, we've been asked by the program, to try to get them through that. So I would ask most of them either to spend time on the Text Disc or to work on the BASE program going through all the skills there. I'm here to help them with anything

they need. Here again, I get more questions on the math. Often I'll take a student individually and we'll go back over, sit down and go back over it. Yesterday, one gentleman had gone through addition and subtraction of decimals, fine, no problem, got to multiplication and just could not figure out where that decimal went. It was just something I needed to sit down and go over with him. He'd forgotten. And then he could move on. So I'm there when things get tough. The programs are good and we seem to get good results from them." [Jane Barnhardt, SLED instructor]

CAI

The Computer Aided Instruction is totally individualized so learners come and work when they have time. The majority of them work on math and computer modules.

"When they originally set it up, they started about the time they were starting all this renovations and expansions in the plant, they were bringing all this new equipment and everything, it was modern, most of it run by computers. So I thought it would be to my benefit to learn about the computers so I would know how to run the new machinery. And so I've been taking the computer program courses. And I finished the Basic, Pascal, Cobol, Logic and some algebra topics - what's the name for them - that I took while she was getting me all this on CDs. That's the first time I ever seen you know a CD used with computers. They didn't get but just so many as they went along. So I took some of these other courses while I was waiting on these programming courses to come in. Now I'm doing the Lotus, and I finished up, and there are books to go along with it, reference books and books you have to use, that tells you - the computer tells you something and then the book tells you something. They had a hard time getting the books. But they got all that worked out so now they got them pretty much here when you get ready to use them. I enjoy taking it, I'm going to keep on, as long as they got something - as long as they have something for me to learn, I don't know how many courses they got left, I'm hoping it will get me a better job. So far it hasn't worked out that way." [Ron, past CAI student]

Developments

During the past year, the instructors have begun developing curriculum material around the computer modules.

"When I started teaching here, we were emphasizing the BASE and using one of the CCC programs, Essentials in Living and Working. And then we got the new Text Disc, so that was a change. Now I see people asking for computer training and I have taken WordPerfect and Lotus and worked out some instructional sheets and some discs of sample programs to enable them to use the sample, the tutorials in the books. Those programs, the files, are on the hard disc, but they could never remember to save to their discs, so they were causing havoc in the hard disc, so that's why I gave each one of them a floppy disc. They have their own disc. So that's what I see as an outgrowth." [Jane Barnhardt, SLED instructor]

The computer capability has also begun to be used for innovative work in writing.

"The creative writing has been fun, having a goal of being able to submit it to the magazine, Not by Myself. Any time they write and we submit it, I also give them a typed copy of their

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work. I think that's just kind of a special way of validating what they've done. It looks good, it's printed. They enjoy having it, taking it home, sharing it with their family.

I type their writings with their mistakes. They now know how to go in and correct their errors using WordPerfect, and they know how to use spellcheck. The spellcheck has been fabulous for my students that are learning disabled. Often, if they can't spell a word, spellcheck will give them a lot of choices, and they can actually spot the correct word. They've learned some of the features of WordPerfect in addition to finding a lot of easier ways to correct a paper. I can remember having to copy papers over in college, in high-school, because we didn't have computers then. And that was tedious and it's not necessary." [Jane Barnhardt, SLED instructor]

Other curriculum materials are developed as well. For example, one of the instructors reports that on one occasion she brought a newspaper story about management appointments being made at Sara Lee to class. This generated a high degree of involvement and interest. It was work-related, the content was accessible and it did not cost much. This kind of discussion complements work on the computers.

Computer Literacy

Comfort with computers, losing the fear of them, being willing to try them, is the foundation of computer literacy (as in fact with print literacy).

[Using a computer is] really easier than I thought it would be. It was a terrifying experience to start with. And a lot of people you know, that I have talked to since then would say 'Oh I would be so terrified to even sit down in front of a computer', but it's not that bad, I mean if I can do it, anybody could do it." [Karen, past GED student]

Expectations of difficulty are the first hurdle to be overcome.

"I was terrified then, I didn't even know where the *enter* was. I went one year in school, did typing, but that was - you know, many moons ago. And you forget most of that, a lot. But they was real patient and that really kept me coming back." [Karen, 8/12/93]

"Well this is the first time that I had anything to do with computers. I remember the first time I ever seen them. It really amazed me. I ain't never thought nothing about, the more I seen a computer, the more I would like to learn about it." Linda, student in JES class]

But familiarity creates ease and a willingness to try other computers.

"I messed with them a little bit. They had a few out there on the floor, it's a system that was designed specifically for Sara Lee to keep track of all the lots, from the time that the rolls has got up and sewed together and bleached and dyed and finished and cut and sewed and sent to the customer. One time when I started I was on, still on the dye line running dye machines, and I got a utility man's job, and I had to mess with it a little bit. We were on 12 hour shifts and they went for a year, they went back off 12 hour shifts to 8 hour shifts, so I had to go back to running dye machines and went back on 12 hour shifts, I just stayed on the machines. More or less they left me, they didn't put me back on it. So I got involved doing a little bit there and then just other places, just asking questions. I knew a little bit." [Ron, past CAI student]

This in turn leads to the capacity to address computer needs on the job.

"I'd like to get a better job. That's one of the reasons, to study so I can learn more and help me get a better job. I figure everything's computers and I've learned the computers and that's a head start right there." [Chuck, student in JES class]

Computers are a big reason for learners coming to SLED. They know that computers have been introduced extensively in the modernization that the SLKP plant has been undergoing, and that they are now used in most jobs at SLKP and elsewhere. Computer skills are understood as being among the basic skills needed for survival in the workplace.

"My machine did have two computers, but it's got one now, so, the Width, the Width Monitor System, the Stitch Counter, it counts the stitches and it's sort of basic, it's got a list of things that it does, and all you have to do is punch in what you want to see, and you know, it puts it up on the screen. And it was pretty neat to learn that. At first it was sort of scary because I've never been doing any computers but after I started, it was pretty easy. Or easier than I thought it'd be." [Chuck, student in JES class]

"Mainly I wanted to learn more about operating computers. I knew basically nothing about them. And I just want to learn how to operate computers, how to get into them and use them and that was mainly the reason. The type we have on the machine we just press the section and you use your read out. As to the operations on the machine, I have one at home but I have, lately, anyway, I've had very little time to use it. I'm hoping that I will get more time. Everything's going to computer and I wanted to get some skills; when I don't have time to go to a class, maybe I'll have time to work at home and brush up on what I need to know. And I had hopes it would help me. If I've caught a chance at another position or to improve on the one I was in or whatever. Because everything keeps going so high tech, you know?" [Michelle, student in JES class]

For some, the familiarity with computers has actually facilitated job change.

"I've been here 13 years. Started out, spinner upstairs, and then they done away with that, and ended up downstairs in spinning. Done away with that. And I've been in cutting ever since. I'm a ticket defect handler. I don't work on the machines, I work with the computer. That's what brought me over here. I never been on a computer before. And I thought well I need some experience, when I accepted the job, I knew it had to do with a computer. I get work ready, prepared for the layup people and the cutters and then I have to feed back to the computer everything that they do. I deal with numbers, dozens, and stuff like that. It's not better pay. It's just an active job. More brain work to it." [Pat, student in JES class]

They want to learn about computers even if the courses at SLED don't have a direct relationship to the computer applications in their present jobs. It may lead to a new job.

"Well, first of all, I took the computer, the lessons on the computer, and that made me get a better job, so, I really liked that." [Grace, past JES student]

"Well practically all our machines are computerized over there now. But now like what they taught us here in the classroom depending on, it was more or less for if you wanted a office job or well we use computers out on the floor too, it just dependent on what jobs you had. Like mine, what I took here in the classroom didn't really help me on the machine that I'm running

because to me, I think mine's the easiest machine out there to run! (laughter) But there's a lot of machines over there, if you didn't know nothing about a computer, if you ain't never seen it you couldn't run it, it would take you a long while to learn how to do it. What we was taught in the classroom, I felt like it helped me, but I'm saying it, it more or less helped people that wanted office jobs or management or stuff like that. But they've got plenty of stuff." [Lois, past JES student]

It may lead to the possibility of further training.

"Everything you do, especially with Sara Lee, it doesn't hurt to know your word processing, and they signed me up for a Lotus course through Forsyth Tech, the plant manager did. It, can help you just get further in your company. If you just stop with the GED, you'll only get so far and that's as far as you'll get. But if you try to keep going, you can better yourself." [Cathy, past GED student]

It also leads to the possibility of (and appetite for) further training at SLED.

"So after this MIQ class, I'll probably just come back over here and finish what I was working on the word processing stuff in Lotus. And - because people that works in our office here now, comes over here and takes this stuff, I mean, it's required. Because a lot of them ain't had it." [Lois, past JES student]

Impact On the Community College

Forsyth Technical Community College is one of the partners sponsoring SLED. Staff at the College have watched SLED carefully and, as a result, have changed the program at the College.

"As a result of that project over there, we have implemented a literacy computer assisted instruction lab on this campus, which is not a free standing computer lab, but we integrate it into our live classroom teaching with a traditional teacher. It's been very successful for us here. So I would say that overall through that process, because Sara Lee had the money, and we were able to get computers on site, I really learned from that experience how to use computers in a literacy program. We've had a 14 station lab in place on this campus for one entire year, we're into our second year. And we use integrated learning system software on the computer system which at certain points, directs the student and the instructor to other resources away from the computer, and it really is multi-dimensional and interdisciplinary and interactive, and we found that we're very successful, so long as we let the computer be a refresher and a supplement to the regular classroom instruction. And teachers still want their students and students want that teacher but the computer is a reinforcement. The thing that makes this system so good is that we can pull reports on each student and see what they are doing well and where they need help, and that really, when you're working with part time instructors, that really gives very good directions to a part time instructor who doesn't have a lot of time to spend. And it does facilitate individualizing instruction." [Jerri Cathey, Associate Dean of Literacy, Forsyth TCC]

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Organizational Issues

The main issue concerning the computers is the need to develop a system needed to use them to full effect.

"Deborah had the CCC people come in and do two different trainings, and I sat through one of those trainings. And I felt like the capability was certainly in that system. But I think you really had to get in there and really play with it to learn it and I don't think we ever really took the time to explore the full capability of what we had over there." [Jerri Cathey, Associate Dean of Literacy, Forsyth TCC]

This includes developing an integrated curriculum based on the computer facilities and the management of records. The curriculum is being developed around the actual experience of using the computer facilities. However, the lack of a system manager means that there are no easily accessible automated records of learner activity. To generate records, each file has to be opened manually and the records compiled piecemeal. In practice, this is a sufficiently large task that it does not get done.

Findings

1. The SLED staff are beginning to develop curricula which include the computer capacity, but which are based on need and familiarity. This is different from the usual approach to workplace curriculum development which starts with task analysis for the learner's job (and which the staff at SLED were not really able to accomplish). This model is grounded in the concerns of the learners and has the potential to develop into a real learner based approach to workplace literacy curriculum development.

2. The development of a new computer based learning facility is a new experience for everyone involved and there are many more outcomes than can be covered without a separate study.

3. Computer literacy is the basis for developing other computer skills, and in creating the opportunity for SLED users to become familiar and at ease with computers, SLED is providing a starting point for multiple strands of further learning. As such, the selection of people to attend SLED should not be too narrowly defined in terms of just levels in reading, writing and math, but should include the desire to learn about these, and about computers.

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THE TEXT DISC

The data in this Chapter comes from interviews with the students who used the Text Disc, and with the instructors; the user records; and experience of using the program by the evaluator.

The Text Disc consists of five modules concerned with reading and writing and one math module. The five literacy modules cover:
1. Preparing cotton fibers for spinning
2. Spinning of wool and yarn
3. Knitting fabric
4. Weaving fabric
5. Fabric finishing and color application

In each literacy module, the learner works through the same five steps, each of which is broken down into actions (Figure 1).

Step 1: Before you Read the Article

Act 1: Think about what you want to learn

Step 2: Reading the Article

Act 1: Read the article
Act 2: Learn about the vocabulary words
Act 3: Take the vocabulary test

Step 3: Understanding the Article

Act 1: Identify paragraph topics
Act 2: Make an outline
Act 3: Identify where to look for answers

Step 4: Finding Information in the Article

Act 1: Scan for words
Act 2: Scan for answers
Act 3: Scan for more answers

Step 5: After You Read the Article

Act 1: Summarize the article
Act 2: Answer true/false questions
Act 3: Answer fill-in-the blank questions
Act 4: Answer questions from step 1

Figure 1: Steps in Text Disc Literacy Modules

The math module covers whole numbers, fractions, decimals and percentages, and is not work related.

Work Based Content

The Text Disc is intended to provide industry specific literacy material. In this aim, it gets mixed reviews. It is seen positively because of its attempt to deal with the real world of the textile industry.

"The course that was on the computer was like each one of our departments - dying and finishing, cutting, safety, and they had knitting. Although I've been here at Sara Lee for years, I didn't know nothing about dying and finishing or knitting. It took us I think five hours to take it and it took you through each little step, each process. I wonder if I want a job over in the dye house? Well I didn't know if I wanted a job over there or not, because I didn't know what it consists of, I didn't even know if I could do it or not. Which nobody knows till they do it, but I'm saying I just don't know nothing about anything else but the cutting department. So we brought that question up. Well then this guy ended up coming down here and setting a course up about it. And it turned out pretty good, a lot of people took it. And I was the first one that finished that one too." [Lois, past JES student]

However, because the learners work in the industry, they have practical experience which they compare with the information being offered them. This may result in critical feedback, which is not necessarily negative: it means that the learners are engaging critically with the material.

"I think they find it fairly interesting. Some of them have never worked in more than one or two areas of the textile industry. I think it's good for them to know the total program. And of course they've been waiting for cutting and sewing. I had a call today to try to find some more material for that program. I have a lot of students in cutting. They find errors to the point that we do it differently here. Now, whether they're textile factual errors, I don't know. But the students will say 'We just don't do it here', and 'You do this before you do that'. And I think that's good. I feel like they're showing an interest when they have something like that." [Jane Barnhardt, SLED instructor]

The learners are rooted in their area and the Text Disc offers them the opportunity to see their work in a wider context.

"It was definitely important. And in fact, there's a lot of things, even though I had worked here going on five years, have worked up from knitting and a lot of things I wasn't aware of, and that was many years back. And they didn't tell us as much about the company, and this, they help reading those topics on the different jobs, I love that." [Sally, student in JES class]

"I like what I'm doing now. Learning stuff about computers and typing and all. And the other stuff on that one in particular, about that textile stuff, I wasn't particularly interested in it, because it don't really relate like in particular to the type of work I've done in here. It was like different types of weaving, and it included some of it and then various things, and what I've got to do of it, I didn't think related at all to what we are involved in in our work. Especially since I'm in the finishing part now instead of knitting. But I don't think they've ever had any weaving or anything like that here." [Michelle, student in JES class]

"Now, we used to have that, when our work came, it was a bail of cotton, it came in off the train, right here. And I was fortunate enough to watch the process in the starting up of it when the bail is broke open. And the two particular kinds they laid open, and shot up on the floor, waited and mixed in between and balanced and then carded and then rolled and then made into yarn. And I saw it over in the Text Disc, and that was great, that I could see it done, and then go over here in this machine, it really described it pretty good, very good from what I saw. I think it was here for about, well when I saw it, it was about two or three years. And I went through that whole reading course on that, I finished that up. And it got to the knitting. I never knew that in knitting, there was so many processes, in different kinds of knitting, some of the guys that I worked with earlier in the years, they were talking about knitting, and I didn't really understand what they was meaning when they said knitting, and the Text Disc described against the Jersey knit that you know, we do over there in tee-shirt materials, I thought that was real good, and the dying, finishing and weaving, and we have nothing to do with weaving but it's good to know what it was. There's a lot of your denim products in that, in weaving, but in dying, finishing, I've got to watch that too, and that process, it's just spellbinding, the quantities and the amount that keeps a company like this afloat. And my job is to supply them with steam, air and the air conditioning if possible. I find that very fulfilling, and fortunate to see all of that in the process." [George, student in JES class]

There is confusion in people's minds about the purpose of the Text Disc; they seem to think it's more to do with teaching about the industry than teaching language and math. The idea that it is vehicle for teaching contextualized language is not widely touched upon.

Some students, however, mention the language and vocabulary skills presented in the Text Disc, although it is not clear whether they think this is important to their becoming better workers at SLKP.

"It's real interesting because it's like jobs that you do or jobs that are done here at the plant that you never seen or never done, and it's interesting because you can learn about something that's being done to clock before you even get in. Or yarn, and have it made before you finish it. It's interesting. I've been working on it, I'm not for sure where I'm at in it, but I've done went through four lessons, interesting. I really like the Text Disc better because it's easier to sort of follow and work with, and it's really interesting to me how the programs work and the things that I'm studying on it. It shows machines, it's doing what the job's doing and the machine that does it and how the steps are done to finish the product. I'm going to plan on finishing that. And the Text Disc, too much reading in it about jobs and the machines that do the fabric and how the fabric's done. You learn a lot of new words in that because there are like terms of finishing and cottons. I've never really heard the words before. No, not with my job, but with others is. Before the stage the fabric gets to me, there's a lot of words that they use and you've heard them but you didn't really know exactly what they were talking about. The Text Disc you could learn what they mean and what they're talking about." [Chuck, student in JES class]

Literacy Content

Learners have little feedback to offer on the language instruction content: at most they comment on a particular activity that they enjoy.

"On the Text Disc, in knitting, I'm in the knitting part ... pretty good, some parts in there where you do a summary, you get to type." [Pat, student in JES class]

Conversely, the instructors report on parts that the learners do not enjoy.

"I tell you the part they don't like, and this is pretty typical, is the summary, they have to hand write it. But that's really typical of any students. It's more fun to punch buttons than write." [Jane Barnhardt, SLED instructor]

The principal criticism however is that the level is too high for the learners.

"I still feel like the Text Disc is very difficult for some people who just have low ability." [Deborah Gaddy, SLED Manager]

"I sat down and played with it several times and I thought it was quite excellent. It was slick and it was well done and my main concern was that I felt that it really was geared toward maybe the upper basic skill student, and not the non-reader, the lower level. I felt like there was a lot you had to know to be able to interact with it, although I thought it was very well done and presented. I think that's something for the textile industry to be especially proud of. I just felt like it might not gear down low enough for some of those very, very basic, basic skill students, even though there were graphics and pointers and directives and everything in there, it just felt like it was almost too much, I think you have to clear the screen and be very simple and very gradual in building a concept. I felt like it really was geared toward higher functioning. I also thought it was a beautiful job, and I think that demonstration workplace project needs to occur. But I felt like that it was a very expensive process. I was concerned about the amount of money involved (in relation to) serving people." [Jerri Cathey, Associate Dean of Literacy, Forsyth TCC]

How People Liked It

Most users expressed positive attitudes about the Text Disc.

"I hope you talk to Judy a little bit about it. She has found her place on that Text Disc. She is very comfortable. Judy's education stopped at the seventh grade and I don't know what happened, but it's something she gets very tearied when she tries to even talk about it. She's very bright and she's worked on these but she is just, she can lose herself on that Text Disc. The way it's set up, it's comfortable for her. Because she missed years of textbook learning. So maybe that's one of the reasons. But she's delighted with the computer." [Deborah Gaddy, SLED Manager]

Some users found it easier to use than the other systems.

"I thought it was very interesting and I enjoyed working with it as well. Not maybe as much as BASE, but - it was fun. Well, I think that one was a little more easier compared to BASE." [Sally, student in JES class]

And one learner, who worked through most of the Text Disc course, (and who got very high marks), appreciated the interactive format.

"I like that more personal touch, like it's speaking to you, and I like the graphics, I like that. And I wish all of them was like that. I put it this way, I wish more of them would be like that. That Text Disc is really, it's way ahead of it's time. I'd like to go into Text Disc more, but I've started on that other one, I'm trying to get out of it, is what I'm trying to do, I'm trying to get out of the BASE so I can get back to the Text Disc and I've jumped into the WordPerfect now and trying to get my stories in. And trying to juggle all of them together. I'm working on it, but it's

going to take time, but I hope the Text Disc is here for awhile. I hope it's here to stay. And if they can modify it a little more, it would be even better." [George, student in JES class]

"It's helped me up here. I feel, it makes me feel better about myself, what I am learning. And then too, learning all about the mill, your knitting and all, I didn't know a thing about and I've been learning that too. And I've really enjoyed it, the Text Disc. When I got to the math on the other module, I thought Wow! (laughter) So I haven't been on that one for awhile, since I've been learning about this math, but I need to get back to that too." [Pat, student in JES class]

Issues Concerning the Software

As an interactive system, the software is different from the programs the learners are familiar with on the other computers at SLED. By the time they come to work on the Text Disc, the learners often already are used to another way of working on computers, and the Text Disc's differences create some user resistance:

"Maybe it's just that they like BASE better, that it's more efficient. But let me say also that I think that the Text Disc can be challenging to some of them, in ways that maybe they don't want to deal with. Which is arranging things in logical order. It's easier to be on the BASE and push A, B, C or D and then if it's a mistake, it just comes up and you reread it." [Jane Barnhardt, SLED instructor]

The format and procedures used by the Text Disc are confusing sometimes.

"It's difficult to establish a point of reference when you're in that program. It's kind of like coming to a crossroads out in Kansas somewhere, and every point that you look it's all the same, looks alike. I think it was done for consistency so you would know to go through the same steps each module. But even in my telling - not only telling them, but illustrating that this is what you see on the screen and this is how you can tell where you are and what you're working on - it still is like coming up out of water or resurfacing, you've had so much focus and then you come up and you still don't realize that you've got this much more to go. (laughter) You feel like you've completed something, but you haven't really you've got so much more to go. I think it's quite like looking at computer book structured DOS. You can't tell whether you're in the parent directory, one of the tree directories - subdirectory, or the file. It's where am I along this way, it all looks the same. The subdirectory menu sort of likes like the directory, it's set up like it." [SLED instructor]

Additionally, the Text Disc feels slow compared with the computer programs that the learners are used to.

"When you look at something on the CCC, it moves so much faster. And all of these people have history with CCC, so they expect quick response time." [Jane Barnhardt, SLED instructor]

This is an interesting issue that impacts on the question of computer literacy raised in the previous Chapter. As the learners have become computer literate at SLED, we would consequently expect them to be adaptable in the face of other software and systems. Some of the users liked the interactive way the Text Disc worked, but the data suggests that others don't need that degree of structure. We don't have enough data to be able to tell whether this means that the learners have become settled already with one way of doing things on a computer and

they don't want to engage in something more demanding or, alternatively, that they have developed a critical factor and they are making judgments between systems. The data does, however, suggest that this is an area that needs some more focused research by systems developers.

As with the other computer systems, it is difficult to access the records, as it is necessary to go into a particular lesson before getting the detailed record. There is no separate mechanism for accessing the records.

"And even when they pull up their file, it's just for that particular module. It would be real nice if there was a record that they could pull up that would show where they are, show the whole picture. Because if they've gone through and they've completed four modules and they're in the fifth, and they're on the last leg of the thing, when they pull off their records and they've just started it, then it looks like they haven't done anything." [Jane Barnhardt, SLED instructor]

There were technical problems with the system, and these were dealt with promptly. However, it undermined the autonomy of the learners in working through the modules.

"Now we've run through a lot, crossed a lot of glitches in the programs, and that's been frustrating to the students. That's why I need to be there so they don't spend time trying to make it work when it won't. Pages won't turn on the reading part, however KM has been more than helpful. And if I have any problem and call her, she comes back with solutions to try, so I feel like I have good support there, when we hit a problem. She's delightful to work with." [Jane Barnhardt, SLED instructor]

Fitting It Into the Curriculum

As mentioned in the previous Chapter, the Text Disc was added this year to the existing computer aided instruction. Because of the need to get the facility working, and because of the time it took for the Text Disc to be available, SLED had already invested in other computers and systems which had become the standard before the Text Disc was operational. With the number of learners at SLED, it could never be possible for the Text Disc to be the main method of instruction, especially with only three terminals (two for part of the year). For logistical reasons, therefore, it is not the main part of the computer based learning, but an additional and different piece. Consequently, it seems to be used only because staff members make an explicit effort to have students use it.

"The text discs, they're using it fairly intensively?

They are because they've been asked to." [Jane Barnhardt, SLED instructor]

Most of the students do not spontaneously use the Text Disc.

"I just couldn't find a place that I thought that it would really relate. And so we're back to our regular curriculum, as far as computer assisted instruction. What I've tried to do is to keep a student on the Text Disc during the whole class, at least. Now they can change about if they wanted to, and if I don't suggest, then most of them will go to BASE. Sometimes even when I ask if they would like to go on the Text Disc, I get 'No', because they see BASE as something they

can finish if they want to finish. I think Text is so involved, they don't really see them finishing it, except with a very few students that have been able to come out on their own time. Judy was telling me today she was through, but she didn't realize she was only on the first module. I think we've gone over that and I know Deborah especially talked with the group, even after they were into it, as to what the real structure was. It was never-ending." [Jane Barnhardt, SLED instructor]

The JES students, the main users of the Text Disc, are limited by the time that they are at SLED. With three terminals, there are strict limits on the time that could be spent working on it. However, it is notable that CAI students did not choose to use the Text Disc and that in two months from July to September, only two JES students used the Text Disc at all.

What the Records Say

The learning records were copied from the Text Disc files on July 14. A further copy of the records was sent to the evaluator on September 16. Between these two dates, only two people had done further work on the Text Disc.

The records covered 21 users of whom none had completed the program. A breakdown of the level of activity on the Text Disc is contained in **Table 1**.

	JES	GED	CAI	Total
Registered	16	2	3	21
Not started	2	0	1	3
Work in:				
1 module	5*	1	1**	7
2 modules	2	0	0	2
3 modules	2	1	1***	4
4 modules	0	0	0	0
5 modules	1	0	0	1
6 modules	4	0	0	4
Completed	0	0	0	0

Table 1: Text Disc Activity

Notes
* 2 dropped out of SLED shortly after enrolling in the Text Disc

** math module only
*** repeated the modules on two separate computers

For each field of activity, the learning records show:
- A score (as a percentage)
- The time spent on the activity
- The date when the activity was completed.

The sample of learners completing their work with the Text Disc is too small to do any useful statistical analysis but a few observations can be offered.
- Among the six learners who completed three to six modules, there were some interesting patterns of activity. For example, more than one avoided the writing activities and one jumped around and did not work on the activities sequentially.
- Among the seven learners working on only one module, only one completed that module. Three logged on only once, presumably for an introductory session.
- There did not appear to be any relationship between time spent on a module and the level of score attained. High scores were achieved by people who worked through the models very slowly and very quickly.

Findings

1. The users like the Text Disc and appreciate the way it is rooted in their industry.

2. If people already have well developed language skills, they will work through it quickly and get a high score; if not, they will work more slowly but may still get a high score.

3. Most learners at SLED started on other systems first, and they continue to use those systems more often than the TEXT DISC.

4. Many users work through a few activities and stop. They don't always say that they have stopped and may, in fact, not know that they haven't finished. Only a small number get near to finishing the Text Disc program.

6. The curriculum at SLED has not integrated the TEXT DISC. It may be more successful in a setting in which it is more fully integrated into the curriculum.

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THE IMPACT FOR INDIVIDUALS

The first Chapter explored the centrality of the learners, their experience and motivation, in the working of SLED. In this Chapter, we look at some personal outcomes that they achieved. The next Chapter looks at work related outcomes and the impact of SLED for SLKP, though, since work is so central to the lives of SLED users, the discussion in this Chapter is still heavily influenced by work.

The impact for individual learners varies widely. The main personal outcomes, however, concern education: learners broaden the activities they are involved in and increase their self-confidence. Learners felt that, as a result, they became more effective with their families, with their work and with their colleagues at SLED. They also often were able to move into a support (and even leadership) role for other people.

Education

The educational outcomes involve skill development, opening up further educational opportunities, and reaching previously unattained educational goals. Additionally, people achieved computer literacy, as discussed in Chapter 2.

Educational Goals

Achieving a previously unaccomplished educational goal is a valuable outcome in its own right. It provides completion in an important area of life that is seen in society as a threshold or gateway to full participation in adult life, and a lack of which seriously damages people's sense of worth and equality.

> "I got my GED through SLED, I quit school when I was in high-school, when I was in 10th grade. It only took me I think two months, two or three months, to graduate. But it helped me because I took all college credit courses in school. All my brothers and sisters went to college and I didn't. I was planning on it but I didn't. And I just thought it was wonderful. It was the best thing that ever happened because it makes you feel better about yourself." [Cathy, past GED student]

English

Learners experienced a variety of outcomes concerned with improvements in their literacy, language and communication skills. For Rudi as a native Spanish speaker, that involved greater ease in his overall use of English, including his comfort in speaking English. (He also passed his GED with a very high grade.)

> "Just the English that I learn, the English, and it helps me better now, when I'm talking, and I can read it better and understand it. I mean I read it okay before I came here, but when I come here, I learn everything, and everything that I haven't learned nowhere else, like spelling, seeing what a word means." [Rudi, past GED student]

Development of writing and communication skills had practical applications for George, already an accomplished writer.

> "My communication skills help me out tremendously over there. In writing I have to leave notes to the next guy I follow and it does help out on that. ... In writing, I do as I'm talking to you , about the different situations that I run into, learning to deal with each one of them, I don't have too many problems with nobody. The supervisors, the staff, all the way down, to us, I'm learning to communicate with them pretty well, I think I am, at least I haven't heard anybody complain, have you?" [George, student in JES class]

Chuck felt a sense of being better educated in his language through having worked on areas like grammar and spelling that are seen by many as difficult and mainly possessed by other people, and yet in some way essential to being completely educated. The act of working on these parts of literacy confers some self-esteem.

> "Benefited with my reading. I can do a lot more now and feel more confident about it because I've been doing more and it's benefited me that way. And then the learning from the tests I've been taking and the things that I've learned with the tests, with the BASE, we usually read: I have read pages of letters and correct spelling and punctuation. I'm working on BASE right now, and it's testing us and right now, it's on language and commas and punctuations and stuff like that. " [Chuck, student in JES class]

For some, like Sally, the SLED experience made reading a greater part of her life, and empowered her in relation to other people.

> "It has brought me out a lot, to voice my opinions or to say things that I feel, it has enabled me to go on and do the things that I can do. We have classroom study, we do a lot of reading, and asking the question, 'What's Been Read?' and we discuss things, in the newsletters, or anything that we read be it a story or a newsletter. Within a group we discuss it and add our opinions. It's really a lot of fun, and the teachers there definitely make you feel comfortable enough to voice your opinion on different topics. I read more than I used to read, more or less for pleasure, when I do have the time. I like reading more on politics, compared to what I used to, I didn't read too much on politics before, I've been reading a lot of politics recently, but most of the books that I really love is mysteries, and romance of course." [Sally, student in JES class]

Participation also helped learners develop the capacity to support their children's learning.

> "And the first [computer] I was working on was the ones against the wall on that side and the course, it was a good course, but it needed to come up a little bit on it. But I was kind of just enjoying it but I seen that I wasn't as far as I need to be in it. But the one I'm now is, it's giving me more what I've been wanting. I think that I'm where my little girl is right now, that like when I got home, I got that 'Hooked on Phonics', she's trying to learn to read to where she can feel good about it and I want to work on her sounds with her. And she just lights up as much as I do. Whenever I mentioned it, she was like 'All right, mom's going to do something with me'. But see that, where I missed out on this when I was younger, I'm getting it now, and I can also give it to her at the same time, and we'll both be learning something in the process of it. It's made a difference in me in anything that I use. It makes me like, since I started on this particular computer, as to the other two computers I was working on, I went to the library, and I've got three books at the house. And I'm reading now, and my little girl, encouraging her to do

it, plus they got the computers there, so I'm encouraging her to do that. It's making me more aware of what there is." [Judy, student in JES class]

Math

SLED learners' experiences with math were remarkably similar to their experiences with English and writing.

Math skill development had an impact at work.

"So after you went through the school and stuff, you felt like well you have accomplished something because it helped a lot when we went and go to work, the way we have to - because we work in percentages, and we're constantly adding something every day over there and measuring stuff, so a lot of people didn't even know how to use a ruler, read a ruler, so in a lot of ways it helped us over there." [Lois, past JES student]

It also helped overcome the sense of being uneducated and enabled learners to help their children. In addition, learners addressed algebra, which seems to have the status in math that grammar and spelling have in English: a hurdle to be overcome before you can access the full potential of life.

"I graduated from high-school in '70, and I was planning on going back to school if I could ever get a 8 hour job - and I wanted to refresh myself in math skills and I was really basically interested in the math more so than anything - to find a better job, maybe even right here in this facility here, the Stratford Road plant. I wanted to better myself really. The math it helped, just like when I took the math in school okay, and I refresh myself in that math. I was able to help my youngest son, because a lot of it I had forgotten, I really had forgotten, not using everyday, I just forgot it. And it was a great help with me helping my younger son, with fractions and stuff that I had just forgot totally. I really wanted to refresh myself with algebra, but I didn't come back, so I never did go into that, but she did tell me that they would get to it. Let's say like I ever planned to attend Forsyth Tech or whatever, it's a help to me, I feel like it would be. Especially pass their tests; they give you a test. I wanted to go into nursing, was thinking about nursing and you had to take this test I guess in order to see where you at, could you go directly into your classes, or do you have to take pre-tech classes." [Sandy, past JES student]

For Ron, learning math meant that he was able to start helping other learners.

"As far as programming portions I've got a good general idea now how to program a computer. I mean I may not do as good as some people that's been doing it for a long time, but at least I'd know what they was talking about. I was learning the Logic, numerical or math, it's helped improve my math skills, which is something I never was really good at. But I kept working on it, working at it. And after these two courses, I think I'm pretty good at it. I think it will (help) if I ever change jobs, go somewhere else that requires good math skills. Deborah's had me to help, there's people you know that's taking these courses now that I've already finished, I'm kind of tutoring, things like that." [Ron, past CAI student]

Improved math skills are of course also a real passport in that they are essential if learners want to have access to further education.

"If Peter were to decide to go get additional education at Forsyth Tech, most of the courses over there require that he take some algebra before he starts into them. Now they have that course there, here he would take what they call now high-school pre-algebra, or some algebra. So he wouldn't hit Forsyth Tech cold. Plus it just gives him the satisfaction of knowing that he's actually had some algebra. What I hear from the students more than anything else, is 'We feel better about ourselves'. That's my goal for them." [Jane Barnhardt, SLED instructor]

Further Education

Continuing their education is an important goal for many SLED learners. Time at SLED is one part of realizing an aspiration to be a lifelong learner, something that is urged on us as necessary for both individuals and work organizations. This may be expressed in terms of personal ambition or the desire for mobility.

"I've been thinking about it, but I'm not sure right now what I want to do, but I'd like to learn some electronics, or something else, something that can get me out of here, and what I am right now." [Rudi, past GED student]

"I don't know how much time I can get into the field that I would love to get into such as sociology or psychology. But I will during this Fall, go to Forsyth Tech for some of those real estate classes that they offer. Because I would like to have my own business on the side as well as working here, just an extra job. I really love working for the company, I don't have anything against it. I feel the commitment here, and yet I will want to venture out, that's why I said start first in my own business and see what goes from there. I feel a sense of commitment to the company as well as I feel like hopefully they have a commitment to me. The reason why, at this point now I like to work here is I enjoy the particular job that I do. It's interesting, it's not too hard, we might have our problems, but take them in stride. I can appreciate it. There's a possibility, I would hope to be able to move up in the company. I wouldn't mind something in the computer line." [Sally, student in JES class]

"I was going to Forsyth Tech before we went on these 12 hours - when we was working 8 hours, and I was taking business computer programming. I had to quit. Well I didn't quit, I finished a quarter but I didn't go back because we went on these 12 hours. I thought well I enroll in this, you know, and then Deborah told me, she kept telling me 'Lois you know all this, you don't need to come over here'. I said 'No Deborah, you always learn something to learn'. Like they got word processing, Lotus now, I hadn't took that, but that's what I was going to take." [Lois, past JES student]

The experience of further education can be difficult, however.

"The first one I took was math. Which was really terrible to me. Because it was all different the way they taught me here. And I passed, but that was it, just passed, just by the skin. But I want to get able to go and do more than pass because I'm a perfectionist. If I can't have things, just right, I don't really want to do it, and when I go back at the last of the month, I'm just taking my typing class. I found out I'm going to need some of that too, but I'm going to take English. Roni had taught us the same mathematics that they taught me. But it's like I was a first grade and this was college work. And it confused me, it really did. And then I had a complex too because I was the oldest one in the class, and I said well maybe, if I ask something,

I'll seem real dumb, and I guess I should've asked questions but I didn't. But I'm going to go back. But Forsyth Tech wasn't bad entering in, it's just that math just really got to me. I thought maybe when I go to Forsyth Tech there'll be somebody my age. But everybody was much younger than me, and it looked like they breezed through it. And I was just kind of mulling through it. I'm going to have to take a brush up on that." [Grace, past JES student]

There are ways in which SLED spoils as well as facilitates learners. Because it is such a supportive environment, one which tries to value learners and work closely around their needs, it both offers a feasible channel for education while at the same time shielding learners from the realities of the outside world. This is not a criticism, as it is one key to success, but it can mean that there is an extra shock for learners when they do re-engage in outside further education.

"I've checked with Forsyth Tech, and they can't work around my schedule any kind of way by me working a 12 hour shift. They can't work around my schedule, so I was just - believing that maybe even in the plant one day, maybe I could get a 8 hour job where I could go to school at night or whatever. So right now, I'm just stuck. Basically, the 8 hour jobs will be like non-exempt jobs, maybe working in the office or doing something like that. And that's the only job where you could come in and maybe work, I guess at 8:00 and get off at 4:00, whatever. Because the way I'm working now, I come in at 7:00 and I get off at 7:00. That's 12 hours, I checked with Forsyth Tech, and there's no way they could even work around my schedule." [Sandy, past JES student]

This suggests another area in which SLED could work with its learners. As well as helping them get access to other further education by preparing them educationally, giving them experience in test taking, and referring them to appropriate points, it could be appropriate for SLED to work with its learners on the implications of further education, in the same way that knowing how to use banking services is part of the literacy involved when teaching people how to write checks.

Money is another area in which further education is a problem to SLED learners. SLED cannot help directly, but it could facilitate learning about sources of financial aid for further education.

"I want to keep bettering myself, I want to take - if it was up to me, and I had the money, I would take four years off work and I would go to college, but I don't, so I can't. So this is what I'm going to do." [Cathy, past GED student]

"There's a lot of people that work here that dropped out of school, once they got the GED, which is the high-school equivalency, a lot of people just went through that and got a diploma now. I'm sure they probably feel a lot better about theirselves because they got a diploma, they finished their education, high-school education anyway. Some of them are still taking these other courses. And some of them are going to Forsyth Tech and taking college courses, which they couldn't have done if they hadn't have got their GED, so it really is a good thing. Deborah's mentioned several times I ought to go to Forsyth Tech and take that business computer programming course they got over there, you get a degree when you finish that. Which is basically the same thing they got here, but it's a little more advanced, it teaches you a whole lot more. This here is just an introductory, whet your appetite, get you interested in it, and then you can go take the big course, which I may do, if I can scrape up the money. They got a financial help thing - I probably will have to go talk to them about that. They reimburse you

for what you spend. My problem is, I'm going to need the money, I probably need the money before I start. Living by myself just one income, it takes everything I got now just to make ends meet." [Ron, past CAI student]

A further implication is that workplace literacy schemes like SLED have a potential to teach people beyond basics. As you meet the demand for basic skills instruction, other demands are generated. Some of these could be met in a facility like SLED, by itself or in partnership with the college.

"I don't think I'd be able to go back to Forsyth Tech - they send me brochures all the time and I go through and try to find something that fits my schedule that I could take. And I can't. The only way, and we've got girls now here that does, but they work night time. Well how in the world can you work 12 hours at night and go to school? See I tried to do it working 8 - I was there, but I didn't feel like I was there completely. I wasn't putting all of me into it, and I didn't feel I was doing my best. I carried an 'A' all the way through, but still, I felt like I could've done better. My work wise and my presentations in front of classes and stuff, because I was half asleep every morning. I'd get off at 8:00 in the morning and go to school at 12:00, after working 8 hours that night, I mean I was a zombie. So we went on these 12 hours, I thought there ain't no way, there's no way I'm going to work 12 hours at night and go to school. But there's girls here that does it. But see they're a lot younger than me. They're in their early twenties." [Lois, past JES student]

Life Broadened: Learners Get Involved in Other Things

SLED learners become active in other activities. To some extent this may be because SLED learners are self selected: people who have the commitment and drive to address their educational needs, despite the difficulties they face, also have the potential to engage in other activities. But the time at SLED develops the confidence to engage in other public activities and facilitates their engagement in them.

"I don't see a lot of it because I'm not where I can see what's happening out on the floor. Peter, for instance, has a lot of writing ability, plus he has a very deep religious belief. He was the one that I asked to write the invocation and benediction for our recognition ceremony. To have him do it and then present it, actually in our program, that was very special. I think that was a way of using his learning in something that's important to him, and that's important in his personal life, his religious life and so forth." [Jane Barnhardt, SLED instructor]

Engagement in extra activity seems to happen in clusters for people who are experiencing the power of self-confidence.

"They tell me they feel better about themselves. As I get to know them, they're more outgoing with me. But I don't know whether that is just because we're getting to know each other better or because they're feeling better about themselves. Doris, who is the woman who came over from West Point Distribution, was working as a temporary. Now that's a full time job, but at low pay. She very much needed to be on full time. She was taking care of a husband who's on disability, and, at that time, she had responsibility for a grandson. She needed to get her GED. They told her she needed to get the GED before she could actually be a full time regular worker. Watching her personality change, her self-confidence, has been exciting. About three weeks after she'd been working with us, they told her they would go ahead and put her on full time as

long as she kept coming. Since then, she has been asked to be on the Safety Committee and has taken a course to become a certified forklift driver." [Jane Barnhardt, SLED instructor]

Grace got involved in organizing the March of Dimes.

"I got to be the co-chairman of the March of Dimes. Each plant, they get peoples from each plant to help organize it, like who going to walk, and really base line is the money, that's all, how much money can each plant raise. But we done like $1,200, I don't think that's bad considering Stratford had never done that much before. And that was a lot of work too. Me and another girl, she working benefits clerk, so we did it. And then I started walking, I didn't walk but two and a half miles but after they started there was about 11 from Stratford Road to walk, and I hated for them to start off by themselves so I just walked, it was something good, I'd like to try it again. But it takes a lot of time. I've got to try and see everybody and some of these folks around here, it's just like pulling - they don't want to cooperate in nothing, now that's the truth. 'No, I don't want to do that.' So, it was kind of a lot of work, and I couldn't do that, do my job, and go to school, so I said well, 'I like to be good, it just makes me sick to make a mistake and I know I'm human you know, but I can't hardly stand that, I can't so, I just try to do one thing at a time'." [Grace, past JES student]

Cathy got involved in the Sara Lee Olympic Committee:

"I went to Atlanta to be on the Olympic Committee. They had this high tech computer thing. It was 25 of us, they had 25 computers and they had a program that all of us could answer the questions and we could write. They would ask us our ideas and I learned by typing, I can type 60 words a minute, and I couldn't type before. And I learned that in a year. But anyway, they had these 25 computers, and they said they were just starting it like that. And everybody types out their suggestions and then it comes to the computer and they have it up on the screen, they project it up, and it's anonymous. It helped me understand the program. I didn't have to ask any questions, and some of the top executives with Sara Lee did. (laughter) I could just go right ahead and do it and they were having to ask questions how to work the computers, but I already knew it - it made me feel good.

There's people from every division, and you have to be chosen by somebody from human resources, and I was chosen, God knows I don't know why, but I was. When I got down there, you just wouldn't believe the educational background all these people had. But I held my head up high, I hung right in there with them. It was an experience, we were planning things that we could do to make the employees feel more involved and that would help the Olympics and would help the customers and help Sara Lee make money, that's what it boils down to. And they used some of my suggestions, about how to do it.

I've grown and changed a lot. I think it helped me to go to Atlanta to be on the Olympic Committee, because I'm an aggressive person anyway, they know that, they know I'll put my two cents in. I wouldn't have been chosen two or three years ago, I don't think. Like when your child says 'I don't feel like going to school today, my head hurts, cough, cough', I say 'If you don't have a fever, you're going', like that. I talk with their teachers, and I can relate better because I do have more self-confidence, I don't have to go in classrooms and say 'Well I'm a high-school dropout, I don't have any business here even talking you know, shame, shame on me'." [Cathy, past GED student]

Some involvement may be generated by SLED. For example, three SLED learners participated on the editorial group for a magazine of student writing,

Not by Myself, produced by Literacy South in Durham.

> "That was experience I have never had before. And it was a good experience. Lois and I did. And the first time we went, they were so scared that we wouldn't like it. So when we got down there, it just shocked me to hear that these people held jobs, good paying jobs and couldn't read, knowing just what their job consist of. And it was something, it was just something. And then when we read the writings, the people's writing, it was out of this sight, it just was out of sight. And I really enjoyed it, I really did. I was hoping we could go back again. But Lois and I both enjoyed it." [Grace, past JES student]

> "I was involved in publishing that book, I was an editor on the board, advisory board. We went to Durham and another lady here at Stratford, that was a lot of help because it gave us self-esteem and we could, get up in front of the people here that we work with, our management, supervisors and stuff and felt comfortable because we got up in groups down there. And so here at work they made a big foodoo about that magazine because it turned out pretty good." [Lois, past JES student]

A number of the learners subsequently contributed pieces to the SLKP Newsletter "The Stratford Insight", including a report on their being involved in this evaluation and some of their creative writing. And learners became involved in lead roles in other SLED activities.

> "At this point, we're getting ready to test all of the people over there. There are 200 workers at the distribution center. I went over there last week to work with their supervisor, to talk with each of the groups. And he specifically asked Doris to come early to be available to answer questions. It was also neat because the next day was the GED graduation, and I could say something to everybody about that. So he had her there for two of the three meetings. Deborah is going to test over there, and when she does the afternoon testing, which would mean Doris would be working, he is taking Doris off of production to assist Deborah with the testing. That really validates what he feels about Doris's growth in our program. I've just watched a woman grow a lot - it's been real exciting to see her. Even her appearance is livelier, a lot more colorful." [Jane Barnhardt, SLED instructor]

But even without engaging in high profile or public activities, the learners grow.

> "More confidence in myself. I talk to people more. Knowing how to deal with people, dealing with people, it's easier now than it was before. I use to call somebody, I couldn't deal with them, now I can just deal with them. I couldn't even deal with nobody." [Linda, student in JES class]

Discussion

"Betterment" is a widely used concept and it is seen as closely tied to education. Betterment is not, however, just about self-image or a better job; it is about self-respect, personal capacity-building, and autonomy.

A lot of good things have happened to people who have been through SLED but it is not a simple case of cause and effect. SLED may be the first positive educational experience, the one that triggers others, or it may be used by people who have started moving in their lives already. SLED is, however, a key item in

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a cluster of successful experiences for the participants and, for some, it is the main experience.

The development of social skills and personal confidence through interaction with SLED enables people to realize more of their potential. They facilitate other positive behavioral outcomes such as better work performance, more efficient learning, greater involvement in the company and its mission, and fuller participation with families and society.

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Impact on Work Performance

It is difficult to correlate overall individual changes in job performance with one particular factor such as attendance at an educational activity. People may report that their work has or hasn't been affected by their time at SLED, but that data is tenuous unless supported by multiple observations or levels of data not available in a study like this.

Some examples are available, however, in which the impact of several SLED learners working in one area can be seen, and in which work-related change is happening. For example:

> "The training managers and the production managers at West Point have seen little or no error in work since we started this class. So, even though they can't put any numbers on it, they were seeing quite a bit of error before we started, and it's as if we are having an impact, so to speak, on their production." [Deborah Gaddy, SLED Manager]

Most often, large numbers of people from one department are not attending SLED together. However, during the previous year, a new Printing Department had been set up with a new manager, brought in from outside the company. The manager recruited heavily from SLED graduates when staffing the department. The experience was revealing.

> "Generally, when you're starting a new department, not only when you're starting a new department, when you get to meet new people, you get to sit down and you talk to them, you see what their concerns are, you see what their personal goals are, and what motivates them. And a lot of them have gone through the SLED program and they did excellent and they were very good employees. And I was lucky to have them and be able to pick them to work with me. Some of them went to a better job, of course, and some of them are still with me, and promoted within the department. What I strive for is for them to have a better education and in the long run it's going to help them out, see what motivates them a little bit. A lot of them, you have to give them that kind a extra push, so we've been working on that slowly. But the people there we got from SLED, at the beginning, they were sort of self-motivated, they were excellent. That helped the department a great, great deal, due to that they did good in the program, they were good employees, plus they helped, they motivate everyone else that wasn't in the program. So that was really good.
>
> No one here knew anything about printing, there wasn't a printing department. No one knew about printing. It's a new operation, new machinery. And we just started, trained, and the training lasted two weeks. The third week we were producing first quality, that was excellent. So we've been doing well, everyone believed that it would take us two or three months. And we had it producing in three weeks. It took a lot of effort from them, because they wanted to do a good job, and they really put all 100% into it. And the majority of them came from the SLED program, and they felt good about it. And there's some that are going to the SLED program also, now.
>
> These are knitters that have been here 14 years, maybe 15 years. So, it was surprising to other managers that they wanted to go to printing, very surprising. But like everyone says, you're here, and you want to better yourself, you want to go to other things if the opportunity arises. I

always tell them that anyway I can, I'll help them, you know. I don't want to keep them in my department if they can better themselves.

I knew that some of them had come from SLED. There was so many there I didn't know which ones. Some of them you can see better than other ones, as far as expression, as far as knowledge, as far as what they wanted to do. And a lot of them were very, very sure of themselves. And that had a lot to do with it. I didn't say well this group was in SLED, I want to choose this group because they're special. No, it just so happens that everyone that I chose, the majority of them were SLED, they were in the SLED program, which I didn't know that they were. I only knew a few. But it worked out good, it worked out really good." [Ricardo Martinez, Manager, Printing and Finishing Departments]

One important element in this situation was the mutual trust and support between the SLED learners and the department manager. (His success at that time can be seen in his being asked subsequently to manage a second department in addition to the printing department.) This example points to SLED as having particular potential to make an impact in areas in which the plant is changing, and where staff with flexibility, motivation and commitment are needed.

A separate example of the possibility of the SLED experience having links with quality is in Lois becoming involved in the SLKP quality initiative, the MIQ:

"The classes I took here in the classroom, it helped a lot, with different things that we do. It's helped me a lot here at work, with the job communication, different methods, the way we do our work, it's helped a lot. (The MIQ), that's to do with improving quality here at work and that was our biggest problem, or complaint is our quality, and we're always working on quality, but the class I'm in is all - there's the plant manager, the production manager, supervisors - that's all that's in there, except for like four or five employees. And I couldn't believe I ended up in this class, I thought it was going to be all employees. So I feel like it's a chance for me to prove if I'm stupid or smart, I can prove myself. Because we get up and do projects, and we have homework and we do things up in front of the class and we work in teams so I'm glad I took it. At first, I thought 'Oh Lord, what am I getting into', but it's showing us methods in a way to improve our quality here at Stratford and we've used some of it already. And so we had to take seven weeks of that, and that was something else too. I mean that was stuff we've never heard of, never seen of, never took in school, but it's pretty easy, because we got two teachers in there. Deborah - she came over one day and see me while I was working and I told her why I haven't been over here working on the computer and she said 'Oh this MIQ is more important than this, you finish that first', because that was seven weeks, and it was something that you had to go to. So I'm not through, I still am going to come back over here and work in the computer classes and stuff some more, as long as they let me." [Lois, past JES student]

This supports the experience from other workplace literacy initiatives where involvement in a workplace literacy program has facilitated employee participation in team development and the introduction of new approaches to managing the plant.

Work-Specific Skills

Performance can be seen at another level in the way different basic skills have an impact on performance of the job. Here, there are varying views and experiences of the impact of skills learned at SLED.

In relation to math, there are occasions where it has mattered:

"Andy: What about in your actual job, does it make any difference ?

Somewhat, more or less in the mathematical way, we do have to multiply dozens and so it helps out in that respect." [Sally, student in JES class]

With computer applications, it may or may not matter:

"Has it helped with your job, I mean, with the computer?

Well - no, not really. Not what I do." [Pat, student in JES class]

"We have a computer that's on our machines. They have placed computers on them but that's not complicated at all if you can read, you know what to punch in. Basically, that's really the only thing that I've taken. It's really not related to my job at all. Maybe some of the jobs, but not mine. At least I don't see anything." [Sandy, past JES student]

Improvements in computer literacy and confidence in working with computers have been noted in Chapter 2.

Literacy skills are important for communicating on the job:

[In my job] we have computers on it and if there's something wrong with it, it reads up on a computer and we have to read it, and then you don't mess with the buttons it's all right, but if you mess with the buttons then you've got to tell the fixer, and then you have to write down on paper so you can get paid for your down time, what it was for. So, yeah, it's helped me. It makes things more interesting, because of how good it makes you feel when you are learning something." [Judy, student in JES class]

They also help develop confidence for continuing learning on the job.

"Since I found out that I'll be working till I'm 70 years old, that's food for thought, it's so many twists and turns that this job is turning into. I remember when the job first started, you only had the boiler room by itself. And management came in, put us out into the plant, and now we are steadily growing, the plant is, and the facility is growing, and all the equipment is growing, but the people is not, so learning to do more and more. And with the systems that they have, this class really helps out. In fact it was on one of these new drive systems they have digital readouts, and some of the things you're going to have to really know what you're doing before you even touch them to get them back to the automatic system. And then they have a readout of what's wrong with it. The class really helps me out on those. And we're starting to get more and more of them." [George, student in JES class]

Literacy demands on the job appear to be connected to changes in job requirements. SLED seems to have an impact on developing workers' potential

for continuing to learn on the job, facilitating continuing change in the company.

> "As far as capabilities of the people out there, we don't want operators operating machines. I want operators that are operating the machines that are going to go beyond that. We have new machines that are very, very sophisticated. We have packages that we're going to be installing on these machines which are going to be, that individual is going to have to have some knowledge of PC, knowledge of charts, percentages, and so, all this increases their ability to learning. Because not everybody knows how to work with percentages. And even if they haven't come through the SLED program, it's a good way of starting. Because when you do that, it motivates them and they say well wait a minute, I don't know much about percentages, I don't know much about graphs, I don't know much about computers, well, we've got the SLED program, why don't I go over there and learn a little bit about it and make my life easier. So that's what we try to do, that's what I try to do with them." [Ricardo Martinez, Manager, Printing and Finishing Departments]

> "Now she's been promoted, another position, a higher position, she's going to be a lead person. And she's had the opportunity to move to another department, a better paying job. But she sees that here that she has the ability to better herself not only as far as position or money, but as far as ability to learn more and more things in the department. SLED has helped, I believe, a lot of people I have because you got another one which is a color mixer, he was in the SLED program. He had his GED, and a lot of people didn't have confidence in him. When I took him, people said don't take him because he's not a good employee, or he's not a bright person. I could have said no but I sat down, I spoke to him. I liked the way he was, I liked his ideas, and I wanted to give him a chance. And he's been with me ever since he was hired with me, ever since, it's been approximately a year now. And he's doing an excellent job. And he's doing things that normally it takes for instance a lot of math, a lot of calculation, a lot of self-judgment as far as colors are concerned, so he's been doing excellent. He's the one that supposedly wasn't a good employee." [Ricardo Martinez, Manager, Printing and Finishing Departments]

Mobility

Mobility may mean moving to another job; it also can mean having the potential to move, while deciding not to move at present.

Some SLED staff used their SLED experience to help facilitate a job move. Grace provides an interesting case. She spoke with us near the beginning of the study, early in 1992, when she was unhappy with her situation. Things have moved on for her dramatically since then. As her case is so instructive, we present it at some length.

> "I just really don't have too much of a gripe after I finished SLED; but before, I was really unhappy. I guess I was unhappy with what I was doing, unhappy with my supervisor, just unhappy period.

> I was an inspector, I was an in process inspector. I checked the cloth when it first come through the door after it finished - you know after it get from finishing. And I did that until after I graduated. And I am doing the job which I'm doing now, which I never thought I could do it. There was a lady on maternity leave, and they asked me would I come and do it, so I got the job. I do production tickets for the girls like in Panama or Mexico, they get paid by them. When I first went over there, I just created all tickets for them. Now I'm putting their operations and how much they get paid and everything. I'm doing all that. I've got confidence enough to do it.

But since I was making the tickets, I asked them to show me how to do it. They did and I'm doing all of that. I run four printers ... and I never in my life thought I would have done that.

At first it was just temporary until the girl came back from maternity leave. I got over there and just turned it around. Beforehand there was - 'You can't', in other words, let me say it like this, 'You can't do the work, you can't get the work out the door unless you got the tickets on it'. So when I first got over there, I changed all that. I just concentrated on just that, and it just turned around. Of course I have my days now, when the system go down, tickets run out or something like that. But if everything is in proportion, it runs pretty smoothly.

I got more money. I got personal time. Well I already had sick time, but I got personal time. It was just a better move. Before, I had inspected so long, I could just look at the cloth, it wasn't no big effort to say 'Hey, this is bad, this is good'. But this was really a challenge.

I've been at Sara Lee for 15 years. And I had been an inspector about 4 of those years. I had been a training instructor. But I had been an inspector and I had just really got burned out on it and I wanted a change and this was a change.

I really like what I'm doing right now. I might get washed up like I did with the inspector, but so far it's a challenge. Every day it's something new, and not maybe every day but at least every week, you run across something brand new. I'm kind of happy right now with where I am. If something else come up, I'd go for it, I might not get it, but I'd try, I really will. I'm about as close to the office as I want to get right now. I still communicate with the peoples on the floor, I have to. So I'm pretty well satisfied where I am. I could be a supervisor, but that's a lot of headache, because I was a training inspector for about a year, and they liked to have drove me crazy, I'm pretty well satisfied, pretty well.

I really wasn't happy when I talked to [you during the beginning of this project] because I had got washed up and everybody hadn't been with the company as long as me and none of that stuff. And then after I got out of that, I'm pretty well satisfied. I could do worse I think. But I got a real good supervisor, that's the other thing.

I'm too old, I think to go anywhere else. I don't have but nine more years to work and I can retire. If I get to squeaking enough, they usually listen to me, I don't know why, but I try not to complain, but if I start complaining, somebody listens, so I figure I can hang in here nine more years." [Grace, past JES student]

Grace was quoted earlier in the report as being involved in several things - being March of Dimes chairman, being on the editorial board of *Not by Myself*, and this is a good example of the clustering effect suggested in the previous chapter, that people who are involved in change may well be involved in several things at once. In this case, it seems as if the individual learner has made the change rather than it being linked to a major company initiative. But she needed persistence and self-confidence.

Cathy's case in printing is similar, though here she was taking advantage of a context in which change was the norm.

"One day she came up to me, says 'Ricardo, I feel bored'. I said 'Fine, let's see what we can do for you, let me see how I can help you'. I know what she wanted, and basically she got part of what she wanted, which is not only more money but a job where she can use the skills better. Now in cutting she's going to be there and she's going to be using those skills that she learned in

SLED, be working more with computers, working more with numbers, working with production, working with records, so she's going to be more involved in the operation, which is excellent." [Ricardo Martinez, Manager, Printing and Finishing Departments]

"It makes you more confident in yourself and I put in for a supervisor's job in my new department, I went from one department to a new department, when they started the print, rotary print fabric. In one year I started out, they hired me as a loader, that's the lowest paying job there. And in two weeks I was an operator. And now I'm a printer, which is like a supervisor. And it makes me feel good I can move on up. And what really made me feel good is eventually they're going to have four supervisors. And they started out with one. And I applied for it and it was an honor to get to be the supervisor. Out of 20 people, other supervisors that are in the company applied for it, and people that really had a lot of education and were really smart, I came in second. I thought that was good, they're going to have to have three more so I feel like I'll have the next one. (laughter) I expect it by the way they're prepping me now. It's good to move up like that, in a year, that's a lot. And my boss, he's fantastic. He selected a lot of his employees that had graduated from SLED. That's the first thing he did, he came over here and said I want your people. (laughter) Fresh blood, because he wasn't in the company politics, he came here fresh, and he does things his way. But I love him, I learned a lot. Just have a lot more self-confidence." [Cathy, past GED student]

This sort of capacity for movement is not, however, restricted to the printing department.

"I've been here for 15 years, and I came into the spinning department, making of yarn, and it was a dirty job, but somebody had to do it, I had to quit school when I was 16 and got married, and come over here to get a job and worked pretty hard throughout the years doing hard labor. I'm a lab technician now, and I have a good job, day time job, I'm not working the night shift anymore, and I've come a long way in a real short period of time really. I went from spinning to the supply. They took the machines out and I guess that's when it got me to thinking that I really needed to cultivate my brain a little bit. I did need to do something else. I was good at what I did. It just wasn't a thinking thing to do. That was about six years ago. It started then, thinking, I guess everything just fell in place, and when they had the program here, it just fell right where I needed it. I was down there working with a computer a little bit, so that kind of kept me interested.

I'm over here in the lab, this is the lab department. I've been working on it for about a year, trying to get the job, this was a new job opening, and I bid on it, I knew about it, that it was coming up, and I worked pretty hard to get it. If it hadn't have been for the Center, I don't know where I would have..., probably another robot job. I had to learn to start thinking again. I didn't realize I had really got that numb, really, in my brain - it was about to dwindle away. It was a great experience. Pays better. Got better benefits. It's just helped a tremendous much. But I know I can prosper now, where I didn't think I could before." [Karen, past GED student]

Some were, however, frustrated because they received no promotion.

"I've been working for Sara Lee for almost 14 years and I'm working the dying line or dying and finishing ... we put the coloring into the material, we put the die in it, and you know, different shades. I really have been working for everything, since when they bring the cotton, I use to make the yarn, now I moved to the dying line, dying and finishing. It don't help much in getting promoted to another job. I'm kind of discouraged now because I thought if I finish it, if I have my diploma, I might have a chance, even better, because I have a lot of seniority over a lot of people there. But they're still getting the jobs. Some of them don't even have - they quit school

a long time before I did, and they're getting the jobs anyways, so I think, that kind of discouraged me in that sense there.

I've been discouraged, right now - they awarded some jobs to somebody else, there's a lot of people that have been upset about that. Because it wasn't just me that took that big blow, but a lot of people there, that have a lot of seniority, even more than I have, they didn't get it either. I'm thinking about doing something, I don't know, if I don't get promoted." [Rudi, past GED student]

"I work in the die house on the dye line, running dye machines right now. That would be in dye bleach. It will be 14 years first of August. They're in the process with all them dye machines on one computer control system. And they just built a new room where all the main computer and everything will be in, and they got a person in there to put the programs for each machine, that tells the machine what to do. I wanted that job, but I didn't get it. I don't know what else is going to come up. It's different things - a little bit of seniority and other qualifications, I don't know exactly why, I guess they decided this person was better than I was. You have to have experience on the dye machines. I don't know what the boss man based it on, they use different things I reckon. I'd like to stay here (at Sara Lee), being that I've put 14 years in, I'd hate to lose all that seniority. You know they're still renovating and adding on - like I said, I don't know what's going to come up. I just have to wait and see." [Ron, past CAI student]

There are not opportunities available for everyone who participates in SLED to change to another job or be promoted. Many SLED participants realize this. They come to SLED to improve their lives now; they value benefits and long service and they derive satisfaction from their present jobs.

"I can't say that it would or it wouldn't help me on my job, I'm sure it would - it would give me an advancement, like if I wanted to go on another job, because it certainly does require it, that I do get it. I don't know what I would go to, I'm very happy where I am now. I have a good supervisor. In years to come maybe it would mean a better paying job, who knows. At my age, I suppose it would be sort of hard for me to have to go somewhere else and get another - get something like I'm doing now - without it. I just feel real fortunate - where I am. But I think a high-school education would be wonderful." [Amy, past GED student]

[I'll stay at Sara Lee] until I retire I hope. Sara Lee's a good company to work for. Well, one thing about it, we can get our stuff for half price, where somebody else goes out, they have to pay full price for it. And then we got good insurance, real good benefits, I think." [Linda, student in JES class]

Some people may move laterally or to a lesser paying job, because of better conditions or to lessen stress.

"In maintenance we have all utilities and everything, combined with the power of the company, of the lights, the steam, the air, the compressed air and the air conditioning, and things of that nature. I kind of like the job that I do now, I kind of hate it at times, it's a pressure cooker at times, a lot of pressure on you when something goes wrong, and it's like the domino effect. For instance, if boilers go down, you got production going down, and you got production going down, you got a lot of supervisors wanting to know why and a lot of things they wouldn't understand about it. You can tell them there's a time limit and they have to learn to cope with that. And I have to learn to deal with that. Doing the job for about seven years, I'm going to tell you the first two or three years it was kinda rough, it was all like pins and needles. But it gradually has gotten better and better, one step at a time, one step at a time.

For about eight years I ran a set of knitting machines, I knitted. It was quite good, before total automation came in. The job itself was based on what we could do, and it seemed like it was set on what we could do. And I don't know, what should I say, cost effective maneuvers had to be brought in, so we were on piece work; and so piece work got a little more strenuous, the job that we were doing got to be more and more hectic and I noticed a different variation in my pay, I won't say which way. So I left out of knitting, but I always did enjoy it. I was just fascinated to watch those needles, and jobs that they would perform, you ever see that process? And I thought it was quite rewarding, to be able to produce something. Cost-cutting methods and ways had to be instigated, quality got so demanding and there was no compensation for it. So I wanted a change of scenery. I took a cut in pay too, to go to maintenance. But I still feel like it was the right move to make. I've got adjusted to what I make here, it's not so much the amount, it's just that, believe it or not, this is less pressure than it is in knitting. Even dealing with those particular points I was telling you, knitting has gotten so job intense, people are not eating right and not taking their breaks, they're too conscious of the machines stopping. It comes down to when the machine stops, the money stops. And that's the only thing that goes through your mind once you've knitted for so long, and you won't spend much time doing anything. I tell you, I put it this way, I learned how to digest my food after about two years and another two years I learned how to walk on my heels instead of toes." [George, student in JES class]

Some workers do not want to move because of the money they earn. Lois is happy to stay and gets much of her satisfaction from her other activities, such as involvement in MIQ, editorial board of *Not by Myself*, and so on.

"I'm a trim cutter. But I've been here 16 years and I got my high-school diploma but when they started this school here, I thought this is a good chance for me to get some schooling, because where I am is 12 hour shifts. The reason I'm doing the same job, I had opportunities to go to the other jobs, but if I take any other job here, I'd have to take a big cut, and that's hard to do. But there's been a couple people, quite a bit of people that was in my classroom, that was going through this school, that has changed jobs. They've took a cut in pay, but I guess that's what you'll have to do to - what I'm saying is office jobs or anything like that. See I'm on production work, and what you do is what you get paid. So naturally, you're going to make more than the people that works in the office, you see? But a lot of people they've got jobs that they wanted although it was a cut in pay. But I don't know if I can do it. Because I'd have to take a big cut. I like the job I'm doing, because I did a job for three and a half years and it was about to kill me. I mean it was making good money but it was about to kill me physically. So now I got a pretty good job what I'm doing, earning wise plus what I have to do. It's work but everything you do is work, I'm just saying it's not as hard as what I use to do. But I'm the kind of person I don't know what I want to do. I know I ain't an office person, because they've took me in the office a couple of times to let me work in the office and I couldn't do it. I couldn't just sit there and work - I'm too hyper I think. I've got to be doing something. After you're with a company so long, you hate to quit or go do something else. And I told Deborah when I first come in the classroom, they asked us all what we wanted to do, what kind of job we'd like to have. So I'm pretty happy with what I do here at Stratford." [Lois, past JES student]

Some people attend SLED just be to make the job they have more secure.

"I just transferred up here and now I'm doing this up here knitting. I like it, it's what you call a real job, you definitely have to work for every penny you get. ... He asked about my schooling, and I told him that I only had what my education was. And he said that he would prefer that I did get an education. I said if I come up here, I definitely would want to enroll in it. And I worked night shift about eight months and I didn't enroll then because it was just hard enough working. So after, whenever I got on day shift, I come right down here and got in it. And I've loved it ever since. It's bringing back a part of me that was taken away when I was little, it

makes me feel good inside. So I'm enjoying it, like I said, I just want to get more time to do it. So that I can go on and I think that everybody has a purpose, and I feel like my purpose is to help others, but I need to help myself before I can help others. So that's what I'm looking forward to, eventually getting there." [Judy, student in JES class]

Others are just beginning to think about SLED and their jobs.

"Andy: Do you think you're going to get a chance to change jobs at all?

I would like to think so. At this point I don't know of anything. I really haven't got to attend that much. This has been going on for so long, I haven't got to attend enough to feel like that I've really learned as much as I probably need to know. I'm more or less still in the beginning stages in all the computer work. Like I didn't know how to type, and I'm still working on that along with the other things." [Michelle, student in JES class]

How People Get Promoted

Some of this discussion of people who hadn't got the promotion they wanted raises the question of what is needed for promotion and whether education and qualifications matter. Again, there are mixed views.

From the perspective of some workers, the promotion process is whimsical, reflecting the supervisors' personal preference. Seniority is seen as not being that important, even though it is part of the official process at the plant. The role of participation in SLED as a factor in promotion is not clear, but involvement in SLED is still valued for its own sake.

"I didn't know how Sara Lee conducted their staffing here. Each Sara Lee division has on some occasions a different way of hiring. And we have what they call a job bid roster, you have to do it by seniority. So it was very interesting because I had probably a hundred or two hundred names that I had to speak with, people I have to speak with and interview. It took me around two and a half months just to talk to everyone and make my final decisions, who I wanted, and so it was hard in that aspect, very hard. I didn't know anyone here, at Stratford Road. All I had was basically the supervisor's word on what kind of employee that was and the performance and abilities. Plus their personnel records. So I had to kind of evaluate every single one of them and that was real hard for me. It's hard because sometimes you are fair and sometimes you're not." [Ricardo Martinez, Manager, Printing and Finishing Departments]

"I'm a knitter, machine operator. I think I've been with the company, this past October, 21 years. Right now, they're giving jobs to who they want to have them. So I don't even know how that would even go. They just giving jobs to who they want to have them. That's the way I look at it. If they like you they'll..., if they don't care too much for you, you'll be where you're at. They just give jobs to who - that's the only way I can say it - to who they want to have them. It's more like a favoritism thing to me. No seniority. They can just do away with that because it does not matter. You could be here 50 years or 6 months. It does not matter. They give it to who they want to have it. Trying to better yourself does not matter. If they don't want you to have it, you will not get it. That's just my own personal opinion - the only thing I can say is that - it seems to me they just giving to who they want to have them. I'm not the only one to say it either. There's a whole, whole, whole lot of people saying it. Management, they just give the jobs to who they want to have them. And it makes no different about coming here taking these classes, because I feel like anybody that take them is not just to waste your time, it is to better yourself, that's the way, you know. Because I could think of a whole lot, I could have thought

of a lot of more things that I could do besides sitting up in a classroom. So far if you say well, I took a course in whatever, I don't know if that would even, this would even count." [Sandy, past JES student]

The company appears to like flexible and committed individuals, and we've already seen the importance of individual worker initiative in securing promotions.

"I think it's really up to the supervisor, to let you move or let you stay. Because they can hurt you or either help you. Before I got the job, there was another job that my supervisor had and she gave it to another girl, she hadn't even touched SLED, she hadn't even been in SLED or nothing, you know what I'm saying? So she got the job. And then I went to talk to somebody about it. I talked to Deborah, because I was really upset about it. I talked to Deborah and then I went and talked to our personnel manager. And he was upset that she had did this, but he didn't say what he was going to do, he just told me to hold on and then I got the job I got now. I knew that I could do the job that the girl got. But we know how things work. If you've been here long enough, you know how it works. So I knew she would never come back on the floor. So then I start talking. And I didn't have to talk to him but one time. And then they got the job - I got the job I have now." [Grace, past JES student]

Some learners see their personal circumstances and characteristics reflected in promotion decisions.

"As a matter of fact, I had signed up for a supervisor's job two years ago. And everybody just knew I was going to get it. Well, my personal life at home is what messed me up. That's what I found out, the reason I didn't get the job, because I noticed a person got it that had less seniority than me. And I thought this ain't right. I had a lot of trouble over the years with my daughter. I've got a daughter 18 years old. And it kept me upset and worried. I still came to work everyday, I still done the job well, they was pleased with it, but nerve wise, I couldn't have been a supervisor. I'd probably end up strangling somebody the first week, I just couldn't - but that messed me up on that because I had been here longer than three of the supervisors, we've got now." [Lois, past JES student]

"I was trying to look good, I wasn't exactly what they call brown nosing, but I was keeping my attendance up, and doing a good job at everything I did and getting the people to trust me, as a person or doing the job, that they would really like for me to do. I came over here to interview for the job, I came in, I was dressed up and he said 'You don't have to dress up for me Donna', you know I had worked around him for 15 years, he'd worked in the lab and I had worked in spinning and I would take work to him to test and stuff like that. And he said 'You don't have to impress me, you've impressed me for 15 years'. And I said, 'I appreciate that'. I just worked hard, really mentally, and all my jobs too, to be good at what I did. You bid on a job and they try to go by job seniority, but if they've got somebody that the attendance are better or they could depend on better or has more job qualifications, there's a number of few things that they put together and they decide." [Karen, past GED student]

Education and qualifications are also understood as being one of the factors considered.

"They were looking for someone that didn't even work for Sara Lee, cutting experience, except they had to like a four year degree and stuff like that. Before, they didn't look at all that. That's another reason I was going to Forsyth Tech to get a two year or four year degree in business computer programming. I was going to take anything just so I can have something to fall

on. Because now that's what they look at. And they have, in the past, come through and just let people go that's been here for years that don't have a degree, or any college, or anything like that. Although they've done the job for years. That's one thing I don't understand about this company. I've seen people hired that had the experience but didn't have that piece of paper, and they wouldn't hire them. Then I've seen people that has the piece of paper, but they don't know nothing. I've seen that here. And that bothers me." [Lois, past JES student]

"I'm sure that they look at your education too, but I don't know if it would hold me back or not, I really don't, I'm sure they'd like to see me get it, but they've never talked to me about it or it's never been discussed. They push education, I know they're behind it and they do back it 100 percent." [Amy, past GED student]

"I think it's learning and I also think it's the faithfulness and the commitment to the job, and it's your character, that has a lot to do with it." [Peter, student in JES class]

In earlier interviews there were suggestions that race and gender affected promotion at that time. Workers don't appear to think this is the case now, although the plant probably is in a state of transition on this issue.

"I don't think it's race, I really don't think it's sex. I think if they like you, they like you, that's it, regardless of what you is - or how you do it, if they like you, they like you. And if they don't, if you ever do anything to rub them wrong, they might say well 'No, she's okay, but...'. I feel like if I earned it and if another person don't come to work half as much as me or don't do nothing - if that person gets it, I feel like somebody should give me an explanation. And they know I feel this way, so. They just kind of deal with me, you know what I'm saying?" [Grace, past JES student]

"Over here, in this plant, old, young, white, black, Hispanic, everybody gets together and talks. Upper management here gets along very well, that's my personal opinion. As far as working together, we do it in a positive way I feel. And that is a good, good sign. Of course, there's a lot of people that have been here many years in this plant and getting them to change, getting them to be where you would like them to be at, changing the procedures, changing the methods of 14, 20 years ago, is hard, very hard." [Ricardo Martinez, Manager, Printing and Finishing Departments]

"I'm the first (woman) printer that my boss has ever had, and he's been in printing 20 years. Well it's called printer, but what it is is like a supervisory person. I'm on the night shift so there's no other supervisors, so I am supervisor. I'm the first one he's had, and he's been in printing 20 years. First woman. So I guess that counts for something. Things are changing, but it is harder, you know it's harder for a woman to get somewhere, because most of the people that are doing the promotions and things are men. I think it was a combination of the learning center had a lot to do with it because it had a lot to do with me, it changed me. I'm a changed person, my husband said, 'Gosh, you're not the girl I married'. I said 'Well I'm growing'. It was a little of both. Other women are getting a chance, very slow, very slow. I think out of 16 supervisors, we have one, two, three, we have maybe four women. The last two of them were in the last year.

"I have to program my computer printer, like if you're going to run a style, you have to put the program in there. And I can do more to that machine that anybody in the whole department. I had to teach the new supervisor, which was first, how to do it. And he's a male, and he's not been with the company as long as I have. That's why I say, it's really harder for a woman. He was a male and he hadn't been in the company so long." [Cathy, past GED student]

The life of SLED coincided with a period of major changes at SLKP. These have included the change of ownership from Hanes to Sara Lee; periods of layoff and restarting; changes from 12-hour shifts to 8-hour shifts and back again to 12-hour shifts; changes in the actual work done at the plant, with consequential large scale building work, the introduction of new equipment and the starting of new departments; the replacement of some production equipment with more modern, automated, computer-controlled equipment, and changes in management personnel.

> "I can't paint a rosy picture and when I first I came now, I thought it was incredibly mild, the situation was relaxed, just before the machines turned faster gears, they put in new automated machines and turned them fast and make more cloth, I expect that'd be best, but somewhere down the line they left out the operators of the machine in ending of all that, all by design. But I was mad at that." [George, student in JES class]

> "Management hasn't changed much, but the job, the place, the place haven't changed. New, well them bringing new equipment, new machinery, new everything, and you get to work harder, harder, every day they put something new, something else. So, it's been a big change." [Rudi, past GED student]

The impact of SLED cannot be understood in isolation from these changes.

> "Even the part time instructors have said to me 'We're told that there's a workforce of 400 people over here, but we never see any numbers like that'. I really think that the disadvantage is that any time an industry asks for basic skills training to come into the plant, it's because they are in transition, and they are looking at a downturn and they are looking at layoffs, and they don't ever tell you that, but by golly, it happens time after time. And so, it was just absolute turmoil and five different plant managers, we never knew who we were dealing with. We were never able to get the information to really recruit as effectively as we probably should have." [Jerri Cathey, Associate Dean of Literacy, Forsyth TCC]

Any situation of major change can lead to problems with communications, and this appears to have been happening at the Stratford Road plant. During all these changes, SLED developed an interesting role of providing a place of stability, neutral ground, a place where people could reflect in safety on what was happening around them.

> "I think even some of the upper echelons were really confused. As it turned out, and Deborah made this point, the SLED program was the most stable thing in that plant for three years. For that reason, it did become rather popular. People saw it as an avenue for improvement. So she did establish a base there that a lot of people did respond to." [Jerri Cathey, Associate Dean of Literacy, Forsyth TCC]

This was reinforced by the fact that SLED was the only central training facility, as this plant had never had a separate training department.

> "I think that the workers when SLED went in, were still at that old opinion that they were somewhat suspicious of what the company was going to do to them. Deborah really convinced them that it really was a benefit." [Jerri Cathey, Associate Dean of Literacy, Forsyth TCC]

"The way they have arranged that, and... the general manager explained this to me, this is the only facility, Sara Lee Knit Products, facility that doesn't have an identified training manager. What he's done is to take his new production managers for each department, and he has assigned them the responsibilities for the training, which happens on the floor, which is not any different than the way it happened before." [Deborah Gaddy, SLED Manager]

"It's an advantage, you know, it's a real, real big advantage. I'll say this because very, very few companies have a program internally where they can help employees. We don't have it in Puerto Rico, we didn't have it in Fruit of the Loom. Just other companies where I've been to where I've seen, they don't have the program. And it's an advantage to the company, as much as it is for the individual. So I see it as a positive, as a positive sign. That's why I support it, that's why I like it." [Ricardo Martinez, Manager, Printing and Finishing Departments]

SLED's role in helping workers to develop their confidence and effectiveness extends therefore, to a role of providing a focus for dealing with change at SLKP.

SLED as a Company Benefit

Since SLED has been in operation, it has come to be seen as one of the benefits of working for the company; it is seen as part of the company's package of benefits for the workforce.

"I'm going to go as far as I can go, whenever I see that there's somewhere else that I need to be, then that's where I want to do. I just wish that other companies had what we've got here, because that's sad to me that the company cares for the employee and they're not trying to keep them in one spot. And that in itself makes me feel better about working for the company. I love it. I don't love my job as good as I use to, but they got this, this is a big, this is the biggest benefit they got to me, because you have to go to Forsyth Tech and pay to park and then pay for each course and your books and all this is furnished. So I've got no complaints at all. I think an employee feel lots better working for a company that's offering them whatever they can get out of it, as long as they just take the opportunity to reach out and take a hold. So, I feel like I'm working for someone as big as R.J. Reynolds. That's big for me, because I'm just a little country girl." [Judy, student in JES class]

It is understood as benefiting the company too:

"I just feel that the SLED program is good, something for our benefit, everyone's benefit here at the plant, and I understand there's other people that come in here also. And maybe there's other plants that need to do the same thing." [Ricardo Martinez, Manager, Printing and Finishing Departments]

The company is seen as being committed to SLED:

"All the equipment, with the exception of the three Text Disc machines, those are all Sara Lee. The furniture, except maybe a couple of tables that belong to Forsyth Tech. So all that, we've just gone to Jim Bailey and asked and it's appeared. It's just a different world." [Jane Barnhardt, SLED instructor]

In the Fall, however, there was still apprehension about how deep seated this commitment would be.

"I do have a question to ask. Will SLED always be here? Well she should, I would think, because now, my opinion, there was peoples here that was doing these jobs, couldn't read their names, they didn't even know how to use a tape measure or anything. So I think she should fund it. If it means that peoples from West Point, all those folks come here to school, it's not only helping them, it's helping her too. Because if you can't read a ruler, you can't measure cloth. And if you can't read a pattern, you can't cut nothing out. I think, she should fund it. And I'm saying this for me. I'll tell them to the top, the same thing. I think they need to fund it, I really do. Because it's helping them. If you cut 26 inch cloth, and that cloth is 27 inches, they can't cut it. So I think she should fund it. Because it won't only help the peoples, it will help her too, in the long run." [Grace, past JES student]

"I just hope you keep the program going, I hope they can. Because I'm sure it's helped the company a lot, to get the people over here - so they can learn." [Karen, past GED student]

"I couldn't go to sleep yesterday, when I left here this morning, I had been up 25 hours. I went home and I slept five hours and I set my clock so I could come and talk with you, and I don't have to be back to work till 6:30. I wanted this interview, I wanted to talk to you. I heard it was in jeopardy, you know, because of the federal funding. And I hate that. I hope Sara Lee continues with it, and it does get funded. We know they have the money, but I'd like not to just keep the computers, I'd like to keep the people too." [Cathy, past GED student]

"I just don't want them to do away with the Center. It's a good thing, really. And I enjoyed coming over here. And enjoyed the teachers. If you have any questions, they're always there to answer. They're real good to work with you." [Pat, student in JES class]

Findings

1. **Work performance** can be seen in different ways:
- SLED seems to improve individual effectiveness on the job.
- SLED appears to make a positive contribution when groups of workers from a single area of the plant are involved.
- SLED helps individuals improve some skills that are related to job task performance as well as skills that do not necessarily have an immediate application to their jobs.
- SLED appears to contribute to the improvement in the effectiveness of the overall work force.

2. **Mobility** is enhanced by the experience of working at SLED.
- Some people achieve the job changes that they want.
- Some increase their satisfaction with their present jobs.
- Some people don't achieve promotions and are unhappy about it. People having this experience are frequently unsure of the criteria actually used in promoting people.
- People who learn with SLED have a heightened confidence in their ability to make job and career changes.

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3. **Change** has been part of the culture at SLKP. SLED has helped many workers to handle these changes and has helped participants become better able to deal with change.

4. **SLED is valued** by the staff and management and is seen by workers as a benefit of working at SLKP.

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SUMMARY OF FINDINGS FOR PHASE 2

1. **Work is a central fact in the lives of SLED learners.** They take it very seriously, it affects everything that they do, and it determines whether or not they can do certain things, like engaging in educational activities. Learners are positive and thoughtful about ways of improving their work and their working lives. Learners value highly what SLED represents: it makes a statement about Sara Lee's commitment to them it offers the opportunity to engage in education, something which is not easy for people working long, tiring shifts.

2. **The most important single outcome for the learners** was the development in their self-confidence, adaptability and commitment to engage in further new activities, in learning, work, and in their lives. This self-development was the foundation on which other outcomes developed.

   The most useful skills learned have been generic rather than specific. The ability to communicate, to adapt and to learn new processes is more important than just learning the operations involved in one process.

3. **The experience of learning at SLED** contributed to both work performance and job mobility.

4. **Computers have played a critical and central role in SLED.** The integral use of computers has fostered computer literacy and, for some people, other more advanced computer skills. This feature of SLED has still more untapped potential. For this to be realized, SLED needs staff who are both computer confident and competent literacy teachers. The staff now working at SLED has this capability.

5. **The Text Disc has been a useful addition, but has not been central** to the curriculum at SLED. It might have much more power in a stand-alone context, or if it were central to the curriculum. For that to happen, many more units would be needed as well as additional work stations.

6. **However, workplace contextual learning material is important** -- it has been introduced in a variety of ways, including, but not limited to, the Text Disc. It can be inexpensive and does not need to focus on narrow job task analysis.

7. **The staff at SLED are trusted by learners and make a considerable positive contribution to SLED's impact.** They make SLED a facility that workers turn to for help and support, and a place where they feel open to taking the risks involved in learning as adults.

8. **The total SLED facility is seen by the workers as a benefit** of working at SLKP.

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9. SLED has played an important role in helping both the company and the workers handle a period of continuous change. The learners attitudes about the company and SLED at the end of this project period were different than the attitudes seen when the first interviews were conducted during Phase 1. SLED supports the company's efforts to create change at the plant and the evidence supports the thesis that the provision of workplace literacy can assist implementation of changes in company practices.

10. The commitment of the company has been essential, and will continue to be essential if SLED is to survive and continue to develop.

11. Workers who are learning new skills benefit from exposure to and involvement in a range of activities in which they can practice their new skills. It is also important that SLED facilitates access to a range of related activities that provide opportunities for learners to use the skills that they are developing in SLED.

12. The location of SLED as a free standing unit at SLKP has been important. It would have been different if it had been located in a training department. The links with Forsyth Technical Community College were important for SLED in its being able to establish an effective role. There was power in the work of SLED being seen as broad-based education rather than as narrow job training.

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APPENDIX: METHODOLOGY

Approaches Used

In the Introduction, we explained that this evaluation of Phase 2 of the project was more focused than the evaluation of Phase 1. Consequently, we worked in more depth with a smaller sample of learners, and didn't try to track the entire population of participants.

The Evaluation Plan (January 1993) included an outline of the research methods that had been planned:

THE SPECIFIC DATA that we will need to collect and review to effect this report are:

• Individual interviews with people who have left SLED, to include people from the GED, JES and CAI courses, including both people who have "graduated" and those who haven't, and also including some who completed GED/JES courses and are continuing with CAI, to find out:

- what they did;

- what the experience was like;

- how they feel about it subsequently;

- what has happened to them since leaving SLED in work, education and personal lives, and whether they feel any of this was connected with their participation;

- and whether they have used anything specific of the things they learned at SLED in any part of their lives.

• Group interviews with current JES and GED learners, who have been in the program some time, to find out what it is like, what the experience is like for them, and what the connections are with their work.

• Pre and post test scores for JES and GED students using CASAS and TABE, at the beginning of their learning and after two quarters.

• Learning records about CAI users and usage covering dates used, including starting and finishing, modules covered and achievements.

• The same demographic data as collated in Phase 1, for all the learners covered in these pieces.

THE TASKS to be undertaken are:

• Conducting individual interviews with people who have left SLED.

• Conducting group interviews with current GED and JES students.

• Reviewing the CASAS and TABE scores from the pre and post testing . For this to happen, SLED will need to conduct pre and post testing using CASAS and TABE, with GED and JES students, when the students begin, and at the end of their second quarter, or when they finish, or when they leave, whichever is sooner.

• Assisting SLED if necessary in developing better management information and record keeping, that will record, *on computer:*

- who is logging on when;

- what units they are working on;

- when they started a unit;

- when they completed a unit;

- what the outcome of their work on the unit was.

• Reviewing the data on use of computer aided instruction .

• Interviews with staff about what has happened in the Center during this period .

• If possible, interviews with Management, in particular the manager of the Printing Department who chose his staff from SLED graduates, and the manager of the Department that had the metric math course

• If demographic data for the whole plant is available from the Personnel Department, that would enable us to say something more meaningful about the users of the learning center.

The Sample for Interviews

In total, 23 people were interviewed individually, including:

- Nine current JES students (in August 1993)
- Nine past students (in May, July and August 1993)
- Three members of SLED staff
- The Associate Dean of Literacy at Forsyth Technical Community College
- The Manager of the Printing Department at SLKP

Additionally:

- 11 current GED students were interviewed as a group in February 1993, and again in August 1993.
- The JES students were interviewed as a group in April 1993.

A sample of twelve former students was selected for interviews to match the profile of students at SLED recorded in the Phase 1 report. This group included:

- Eight females and four males.

- Five African American adults, six white adults and one Hispanic adult
- Five adults aged 26-35; five aged 36-50; and two aged 51-65.
- Five graduates, one continuing student, and six workers who stopped attending SLED at this point without appearing to have met their goals (but who might be intending to restart)
- Six GED students, three JES students, three CAI students. Of these, seven were engaged in GED or JES <u>and</u> CAI.

Three of these students had been interviewed by at the beginning of Phase 1 of this project. Three more former students did not attend for interviews that had been scheduled.

The data from all the interviews was transcribed and analyzed inductively for patterns, taking into account the issues that the Evaluation Plan had selected for study.

Test Results

The staff at SLED tested the GED and JES students as arranged. The results do not, however, offer useful data for analysis.

For example, we had ten sets of pre and post test CASAS scores for JES students; the times between the first and second tests varied widely in this sample. The students all showed an improvement, but in view of the small size of the sample and the wide variations in the time between the two tests, the scores can not be statistically analyzed to provide valid conclusions. Furthermore, in view of the individualized approach to learning, there is not a common learning experience to which score improvements can be attributed. Therefore, this piece of the analysis was not pursued.

It is important to note that testing takes a lot of time and that in a time-limited situation such as that at SLED, it is a very demanding process. The most useful purpose for testing is to help the staff in their diagnostic work, to assess whether learners are ready for particular tasks (such as taking the GED) or for practice in taking tests.

Computer Learning Records

The SLED staff spent a lot of time working on the student records on the CAI system to provide the information for this evaluation. However, there was still no system manager which would collate the information; all the records have to be downloaded individually, and then put together manually for analysis. The amount of work involved would have been too much to be practicable and this piece was not, therefore, pursued.

The Text Disc records also had to be collated manually. This was seen as worthwhile because of the limited number of records involved and the central role the Text Disc had in the project.

Demographic Data

Demographic data for the entire plant are still unavailable. Therefore, we are not able to analyze the relationship between the characteristics of the workers involved in SLED and the characteristics of the larger population at the plant.

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