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ABSTRACT

This document contains four evaluations of Project ALERT (Adult Literacy Enhanced & Redefined through Training), a workplace literacy partnership of Wayne State University, the Detroit Public Schools, and several city organizations, unions, and manufacturers in the automobile industry that was formed to meet employees' job-specific basic skills application needs in manufacturing and service operations, through the development of whole language curriculum and training. The reports are "External Evaluator's Final Report" by Jorie W. Philippi and "Year Two Report, January 1997," "Report on Site Visits, March 1996," and "Formative Evaluation Report, August 1995" (Larry Mikulecky, Paul Lloyd). Extensive onsite investigations and job analysis resulted in development of customized whole language, interactive multimedia, and learner-centered training. During the 3-year project 78 courses in communications skills, mathematics, and job-specific skills were presented to 683 employees. Philippi's evaluation using a modified Context-Input-Process-Product (CIPP) model found that there was a good deal of consensus about program goals among the partners and the participants, with the only area of divergence being that some participants expected to acquire a broader range of skills than the courses addressed. The curriculum materials were determined to be very good, especially the multimedia CD-ROMs, although not as many workplace examples were used as intended. Deadlines for the project were met, and participants mastered course work. Although employees and supervisors reported transfer of training and improvement in work productivity, not enough data were collected to determine the validity of these reported outcomes. (KC)

WORKPLACE EDUCATION

PROJECT ALERT

External Evaluators

Reports

Wayne State University
College of Education

External Reviewer Reports:

- Final Report
- Year 2 Report
- March 1996 (Interim Report)
- August 1995 (Interim Report)

Project ALERT

(Adult Literacy Enhanced & Redefined through Training)
Grant No. USED V198A40082-96

A US Department of Education
National Workplace Literacy Demonstration Project

EXTERNAL EVALUATOR'S FINAL REPORT

Prepared by

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Performance Plus Learning Consultants, Inc.

August, 1998

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Introduction

Background –

The Wayne State University College of Education and Labor Studies Center (WSU) in partnership with the Chrysler Detroit Axle Plant and UAW Local 961, the UAW-Chrysler National Training Center, the Davis Tool & Engineering Company and UAW Local 174, the City Management Corporation, and the Detroit Public Schools, was funded initially by a 36-month grant award from the U.S. Department of Education National Workplace Literacy Program to research, develop, deliver, and foster institutionalization of functionally contextual workplace literacy curricula and training programs to up-grade the basic skills and increase the productivity of manufacturing workers. The program operated as a national workplace literacy demonstration project from November, 1994, through May, 1998 including a seven-month no-cost extension. The purpose of the demonstration was to determine the effectiveness of the partners' proposed workplace applications of basic skills training model.

The need for this project grew from a recognition by WSU and its partners of the changing job requirements in the manufacturing community for both large and small operations, especially in the areas of basic literacy and English proficiency for its workers. The industry/service partners employ a total of approximately 2500 workers. Surveys conducted prior to the grant period (1988 and 1994) indicated that 20-25 percent of the Detroit area manufacturing workforce was functionally illiterate and that for many of the workers, English was not their native language. Each of the partnering companies and labor organizations expressed specific needs, as well. For Chrysler Detroit Axle Gear Division and UAW Local 961, there were plans to increase overall use of computer-numeric controlled machinery in production; for the City Disposal Systems division of City Management Corporation, there were needs for additional qualified refuse removal truck drivers and for increased worker communication and computer capabilities; for Davis Tool & Engineering Company and UAW Local 174, there were needs for skill upgrades to qualify front line workers as apprentices in skilled trades and for increased levels of mathematics to facilitate use of Statistical Process Control methods.

Prior to applying for this U.S. Department of Education National Workplace Literacy Demonstration Project grant, the partners had begun discussions with WSU to

foster the sharing of information and to clearly define manufacturing/service employee needs and requests (see above) and agency responses. These careful explorations to define needs and possibilities resulted in the partnering of WSU with the industries/services listed above, along with the UAW-Chrysler National Training Center and Detroit Public Schools, to apply for federal grant monies for provision of customized workplace basic skills training programs. Representatives from each organization met with WSU staff to ensure that the customized programs would directly relate to the skills needed for their operations and would responded to the needs of the targeted incumbent worker participants. To this end, the education/manufacturing/service/labor organization partnership members were committed to gathering additional data for performing a "front-end analysis" in order to assess the applied basic skills needs of targeted employee-participants. They also determined program goals, scope of related content areas, length of sessions, schedules, recruitment, piloting, and implementation plans. This cooperative relationship continued throughout the funding cycle.

The developers of the Project ALERT needs- assessment instruments and instructional materials, (*i.e.*, the WSU and Detroit Public Schools faculty members that comprised a professional staff of curriculum consultants and professors with numerous advanced degrees and many years of experience in writing and teaching), then custom-designed, created, delivered, and monitored program pilots for more than a dozen different workplace-related subjects. Complete participant assessment procedures and strong, whole language (functionally contextual) workplace applied basic skills training programs, along with traditional and commercially developed literacy training programs, were subsequently implemented and refined during the grant period. Wayne State University, as grant fiscal manager, contracted with Performance Plus Learning Consultants, Inc. (PPLC) to serve as a third-party evaluator after the conclusion of project operations.

Purpose of the Evaluation: Wayne State University College of Education and Labor Studies Center has requested this third-party evaluation of their U.S. Department of Education National Workplace Literacy Demonstration Project to assess: 1.), the extent to which the project's goals and objectives have been accomplished; and, 2.), the extent to which program development, implementation, expansion, and institutionalization proceeded as planned. Specifically, the evaluation objectives to be investigated, based on

the project purpose, goals and objectives published in the proposal for funding (*Proposal*, March, 1994, pp. 16-17), were:

Project purpose: To provide for an innovative institutionalized workplace literacy program that will increase the skills of employees and improve the productivity of the organization and the quality of its products.

Goal 1: To design develop, and implement innovative workplace literacy programs that are tailored to the organization, the skills and cultural background of participants.

Objective 1: To conduct a comprehensive pre-design analysis of jobs, employees, and organizations to gather data requisite to the design of effective literacy training.

Objective 2: To collaboratively design and develop workplace literacy programs that are responsive to the unique needs of the organizations, jobs, and employees.

Objective 3: To design and develop a range of culturally sensitive instructional methods and materials that are both technology and non-technology oriented.

Objective 4: To design resource-rich classrooms that support traditional and technology-based instruction.

Objective 5: To recruit participants, implement the site-specific programs, and provide for reinforcement and transfer of training to the workplace.

Goal 2: To conduct project evaluation and program impact research.

Goal 3: To disseminate the program, program products, and research findings.

Goal 4: To promote program institutionalization and diffusion.

Description of the Project to be Evaluated: The Project ALERT Workplace Literacy Project consisted of a workplace literacy training partnership formed between WSU, the Detroit Public Schools, City Management Corporation, the UAW-Chrysler National Training Center, Chrysler Detroit Axle and UAW Local 961, and Davis Tool & Engineering Company and UAW Local 174. According to the published description of the program, the design of the project was structured to meet employees' job-specific basic skills application needs in manufacturing and service operations, through the development of whole language (functionally contextual) curriculum and training. Extensive on-site investigations and job analysis conducted by project staff resulted in the gathering of organizational training and job materials and scenarios, as well as observation, worker and supervisor interviews, and in-depth analysis of applied basic skills used in job task performance. This information was then used for development of a customized whole language, interactive multi-media, and learner-centered training programs and instructional models tailored to meet the various organizational needs. A brief description of the programs follows:

The programs consisted of workplace literacy interventions at four locations in proximity to the three partnering organizations and to small businesses in the geographical vicinity of the federally-funded Detroit East Empowerment Zone.: on-site classrooms at Chrysler Detroit Axle, an on-site classroom at Davis Tool, a trailer at the City Disposal Department site for City Management Corporation, and space at the UAW-Chrysler Wayne Family and Community Learning Center. Initial efforts focused on consistent needs assessment procedures, which were developed, piloted at Davis Tool, then modified to fit the needs of the other locations. More than 75 interviews were conducted with hourly employees, union officials, supervisors and managers from participating organizations, as well as observations of shop floor operations. Based on these literacy task analyses conducted at each location at the onset of this grant, three types of training were designed/purchased and implemented at specific sites: whole language oriented, interactive multi-media, and learner-centered instruction. Courses were piloted, then delivered throughout the grant funding period as 1.5-3.0 hour units of instruction, one or two times per week. A total of 78 course offerings were presented during project operations, to a total of 683 employee participants.

The following courses were developed and delivered:

Interpersonal Communication and Problem Solving

Apprenticeship Prep

Technology for the Workplace

Numbers at Work

SPC-Prep (Statistical Process Control)

Effective Communication

Math for Machine Operators

Manufacturing Process Flow (CD-ROM)

Gear Talk (CD-ROM)

Effective Communication on Computer

New Reading Disk (CD-ROM)

Purchased or licensed training included:

Quality Fundamentals and Data Skills (PLATO)

Workplace Basics from PLATO (PLATO via Internet)

Reading Improvement (PLATO)

Commercial Driver's License Prep (Pennsylvania State University)

Staff-developed module print materials were desk-top published and laser printed with careful attention to uniformity of format, layout design, graphics, and high quality reproduction. Additionally, instructional CD-ROMs were created for use in Computer-

Based Training (CBT). Participant materials and instructor guidelines, which also contained customized pre- and post-tests, were provided; and revisions were made to each course or session, based on feedback received from instructors, union officials, managers, workers, and the first external evaluators.

Method

Design: This external evaluation of the Workplace Literacy Demonstration Project of WSU and its partners employed a modified version of the Context-Input-Process-Product (CIPP) model, (Stufflebeam & Guba, 1971). The CIPP model has been used to evaluate numerous workplace literacy programs across the country for the past 10 years. It provides feedback for project stakeholders as data collected is analyzed to develop summative reports at the end of specified cycles of program operation. This method of evaluation was chosen by the evaluator as the most suitable tool for investigating the evaluation objectives, (see pg. 5), because it examines project effectiveness through structured analysis of the cohesiveness of project goals, components, and operations, independent from comparisons to outside standards or other programs. This premise works well within the emerging field of workplace literacy, as well as with demonstration projects, because of the uniqueness of each individual program that is developed.

The CIPP model was used to analyze:

- Context, *i.e.*, the shared program goals and philosophy of key personnel and participants;
- Input, *i.e.*, resources, including personnel, materials, time, and facilities;
- Process, *i.e.*, congruence of program development, operations, and observed instructional delivery with project goals and research on instructional effectiveness; and,
- Product, *i.e.*, indicators of program effectiveness and potential for program expansion and/or replication.

It is important to note that, due to geographical, staffing, and time line considerations, the on-site data collection and project monitoring was conducted by the WSU project staff and reported to the evaluator via telephone, written, or electronic communications from the Project Director. Forms and procedures for use in data

collection across sites were developed and revised by the WSU project staff and their partners.

Participants: The participants in the project were 683 employees of the project industry/service partners. Demographic data were made available to the external evaluator for 329 participants at Chrysler Detroit Axle, Davis Tool, and City Disposal Systems. A brief description of the available composite average participant profile (n - 329) is as follows:

Composite Average Participant Profile

Thirty-nine year old, African-American male US citizen with a high school diploma whose first language is English.

More detailed demographic information about participants is displayed in *Figure 1* below. For additional detail, please refer to Appendices.

Figure 1: Demographic Characteristics of Participants (n = 329)

Age:		**Ethnicity:**		**Gender:**	
20-29 years old	14.6%	White	33.7%	Male	82.1%
30-39 years old	33.7%	Black	58.4%	Female	17.9%
40-49 years old	33.1%	Asian	0.9%		
50-59 years old	17.9%	Indian	..1.2%		
60-69 years old	0.6%	Other	5.8%		

Born in US?		**English spoken at home?**	
Yes	92.7%	Yes	96.0%
No	7.3%	No	4.0%

Education Level:

No schooling	**1-5 yrs.**	**6-8 yrs.**	**9 yrs.**	**10 yrs.**	**11 yrs.**
0.9%	2.7%	1.8%	4.3%	4.3%	4.6%

12 yrs. or more	**HS diploma**	**GED**	**Some college**	**College degree**	**Trade school**
76.3%	58.7%	12.8%	30.1%	14.6%	17.6

Instruments - Data for this evaluation were gathered via pre-and post-program participant surveys and structured interviews with participants and supervisors/managers, trainers, administrators, and program personnel. Additionally, data were gathered from detailed analysis by the external evaluator of program documentation, instructional materials, and participants' work (*i.e.*, pre-and post-assessment records).

Procedure - Following initial telephone conversations with the Project Director to establish evaluation objectives, the evaluator conducted the activities listed below.

1. Telephone consultation with the Project Director, Dale Brandenburg, to discuss project goals, progress, evaluation activities, availability of data and detailed explanations of project operations.

2. Meetings with Dale Brandenburg: Cleveland, OH, late winter, 1997; and Milwaukee, WI, late spring, 1997.

3. Meeting with Irene Sinclair, the Project Coordinator, Cleveland, OH, late winter, 1997.

4. Off-site analysis of materials and data collected from site.

5. Final External Evaluation Report submitted to Project Director, August, 1998.

Results

Project Context:

To what extent are goals and philosophy of the project shared by key project personnel and participants?

This section of the evaluation is a comparison of the project goals and priorities as reported in project descriptions and interviews with key project personnel, including:

- project director;
- business partner supervisors;
- project coordinator; and,
- participants.

These viewpoints about project goals were analyzed for consensus and divergence, using the following probes as guidelines for data collection and interview questions:

1. How have the goals of program instruction been defined?
2. Is there a clear written statement to which all participants, instructors, and key program personnel subscribe?
3. What beliefs about workplace literacy are promoted by the program?
4. Are those beliefs documented and accepted by those who are a part of the program?
5. Are those beliefs supported by current theory and research?
6. Is there a clear statement of program objectives that delineates how instruction is to occur at different phases of the workplace literacy program?
7. Is the workplace literacy program, as defined, compatible with the needs and characteristics of the participants and of the company it serves?

1. *How have the goals of program instruction been defined?* The published project goals and purposes are contained in the grant proposal (March, 1995), submitted to

the US Department of Education. They were developed cooperatively following communication between Wayne State University and its partners prior to applying for grant monies. Stated goals in the proposal were:

Goal 1: To design develop, and implement innovative workplace literacy programs that are tailored to the organization, the skills and cultural background of participants.

Objective 1: To conduct a comprehensive pre-design analysis of jobs, employees, and organizations to gather data requisite to the design of effective literacy training.

Objective 2: To collaboratively design and develop workplace literacy programs that are responsive to the unique needs of the organizations, jobs, and employees.

Objective 3: To design and develop a range of culturally sensitive instructional methods and materials that are both technology and non-technology oriented.

Objective 4: To design resource-rich classrooms that support traditional and technology-based instruction.

Objective 5: To recruit participants, implement the site-specific programs, and provide for reinforcement and transfer of training to the workplace.

Goal 2: To conduct project evaluation and program impact research.

Goal 3: To disseminate the program, program products, and research findings.

Goal 4: To promote program institutionalization and diffusion.

2. *Is there a clear written statement to which all participants, instructors, and key program personnel subscribe?* The published goals of the project listed in the program

program proposal serve this function. Interviews with key program personnel evidenced that they subscribed to these goals. Interviews were conducted with Dale Brandenburg, the Project Director, in person and over the telephone (1997-1998), and with Irene Sinclair, the Project Coordinator, in person (1997). Both of these key members of the Wayne State University Project ALERT staff provided descriptions of Project ALERT and its goals and objectives which closely matched those contained in the proposal. Dr. Brandenburg's comments provided evidence that project operations had been designed and executed for the specific purposes of achieving the project goals and objectives. Ms. Sinclair's comments provided evidence that all daily project activities, including curriculum development and delivery, also were undertaken to support the project goals and objectives. Off-site review of data from 108 learner pre-program expectation surveys collected by the project staff indicated that 44% of Project ALERT participant learning goals specifically mentioned instructional topics contained in the courses for which they had enrolled.

3. *What beliefs about workplace literacy are promoted by the program?* Based upon the published goal statements, documented project activities (*i.e.*, needs assessment, curriculum development and delivery, recruitment, and data collection queries) and the responses of key project personnel, there is evidence that the following beliefs about workplace literacy were being promoted by the program:

    - program should meet needs identified by employer and employees
    - use of a functional context (or whole language) approach in development of instruction
    - outcomes measured as impact on job performance and identified job needs

4. *Are those beliefs documented and accepted by those who are a part of the program?* Based on documentation and discussion of program activities, there is evidence that the program beliefs listed under Question 3. above are accepted by those who are a part of the program staff. Additional data was collected throughout the program to determine participant beliefs and their acceptance of program beliefs. Eighty-seven percent of participant responses on the Learner Expectation Post-Program Survey reported that they had learned or almost learned

what they had expected to in the courses and 98% reported that they would recommend the program to coworkers or staff. On a scale of 1 to 5, with 5 being the highest, in post-program 6-month follow-up surveys, participants rated the courses on average as 3.63 and rated themselves as better workers on average as 3.46. (Please see Product topic in this section for a more detailed description.)

5. *Are those beliefs supported by current theory and research?* The program beliefs are supported by current cognitive psychology and learning theories and research, indicating that transfer of learning from training situations to job performance is greatest when training context most nearly matches that of actual job situations. This program uses the results of literacy task analyses (needs assessment) as the context in which targeted skills for instruction are embedded, thereby allowing participants to experience skill learning and practice in context, and thus promote greatest impact of training on subsequent performance of skills in job tasks and everyday life tasks.

   The program content and instructional objectives initially stemmed directly from information gathered from workers and supervisors at Axle, City, and Davis locations. Analysis of responses to those needs assessment/structured interview questions indicated that the instruction produced for use during the project was directly related to those skills desired for performance of critical job tasks.

6. *Is there a clear statement of program objectives that delineates how instruction is to occur at different phases of the workplace literacy program?* Program instructions delineating how instruction is to occur at different phases of the project were clearly outlined in the project proposal, with steps, activities, and objectives listed for each year of planned program operations.

7. *Is the workplace literacy program, as defined, compatible with the needs and characteristics of the participants and of the company it serves?* The information gathered from company employees, union representatives, and supervisors at each site at the onset of project operations are reflected in the curriculum materials that were developed. Program shareholder reactions to the courses developed and implemented were very positive and indicate acceptance and approval of both the

content and format of instructional materials in correspondence with company, worker, and union program goals.

Goals of training participants were collected in individual interviews during site visits and on pre-program and post-program surveys administered by project staff for each course conducted. On pre-program surveys, participants responded to the question, *"Specifically, what would you like to improve?"* Selected data, provided to the external evaluator, are listed below. The responses include a range of participant expectations for the courses. For a complete list of post-course survey responses detailing what each respondent felt they actually gained from the training, please see the Product section of this report and the Appendices.

Participant Goals for *Project ALERT* Courses

Course	Participants' Learning Expectations
SPC I	Math, test taking
SPC I	All
SPC I	Everything
ECC	I would like to be computer literate.
ECC	Learn more about the computer.
ECC	Understand more about computers.
ECC	A general knowledge of computers.
ECC	Knowing how to buy a computer—keeping up with daughter who is interested in computers.
ECC	Math, reading, and computer skills.
ECC	How to turn it on.
ECC	Just learn
ECC	Learn how to work the computer-operating Windows and write papers on the computer
ECC	Completely computer literate
ECC	Reading and computers
ECC	Completely computer literate
ECC	Computer skills and the basic functions.
ECC	Computer knowledge
ECC	My understanding about computers
ECC	My ability to communicate with others.
ECC	Formatting spread sheets, editing, and making files.
ECC	Math—out of school too long
ECC	Learning to set up my own programs.
ECC	I'd like to know more about the computer because I have one at home.
ECC	There is always room for more learning, so anything and everything.

ECC	Any skills or anything that can improve myself as a person and with other people in my other education areas.
ECC	Basic knowledge or functions of the computer
ECC	Having basic knowledge of computers so I can get advanced training.
ECC	Story problems, algebra, business math, and computer functions
ECC	Spelling skills and building my vocabulary
ECC	Learning major programs, how to upgrade, and faxing with computers
ECC	Improvement in the advantage computer skills and reading and writing
ECC	Knowledge of computers
ECC	Learn the basic use of the computer.
ECC	Learn basic computer skills and learn to use the Internet
ECC	Access library information from the computers; basic computer skills
ECC	Knowledge of computers, overall usage
ECC	Computers and math skills
ECC	Knowledge and skill of computers
ECC	Computer skills
ECC	Understanding of computers
ECC	Improve basic functions of a computer
ECC	Operating a computer, including finding information and maneuvering
ECC	To learn the ins and outs of a computer
ECC	Knowledge and ability to comprehend and operate phases of the computer
ECC	Computer skills
IPC	All of the above skills
IPC	I would like to improve my communication skills
IPC	I would like to learn to work with computers
IPC	I would like to improve my algebra and math skills and computer skills
IPC	Basic computer knowledge
IPC	Math improvement
IPC	Communication
IPC	Spread sheets
IPC	Math, problem solving, interacting with others
IPC	Communication skills with coworkers
IPC	Communication skills, reading/ writing improvement
IPC	Computer literacy, communication skills
IPC	Computer skills, math improvement
IPC	Recognizing and accepting changes
IPC	Basic and advanced knowledge of skills in computers and design
IPC	Math
IPC	Learn more about how classmates resolve their problems
IPC	Communication skills
IPC	Math computations, basic computer skills, and writing improvement
IPC	Improve myself
IPC	Public speaking with large groups and ways to better resolve problems in a professional manner.
IPC	Relate job ideas and concepts to employer and manager
IPC	My math skills and test taking skills
IPC	Upon completion of this course, I'd like to become a better listener.
IPC	Listening better and expressing myself better

IPC	Learn how to communicate with people who I have a difference with and that I don't
IPC	Communication skills, and computer skills
IPC	To listen clearly and communicate better.
IPC	I would like to communicate with people better.
IPC	How to deal with snobbish people—those who think they are better than others
IPC	Being better at communicating by talking and listening
IPC	My computer and algebra skills
IPC	I would like to complete my Associates in Applied Science in Information Systems
IPC	Computer skills
IPC	Communication and writing skills
IPC	Reading and writing
IPC	Basic overall improvement
IPC	Better ways of communicating with others
IPC	How to communicate with a person that is very upset—what, how, and when to say something
IPC	To be more considerate of others and their opinions
IPC	Computer skills because I don't have any
PreCNC	In college, I did not do well in calculus
PreCNC	Understanding of CNC programs and their functions
PreCNC	Computer skills
PreCNC	Basic skills and orientation in computer language
PreCNC	Math is where I most need to improve
PreCNC	Reading and writing
PreCNC	Identifying angles
PreCNC	Math
PreCNC	Become a better speller so that I can utilize my computer skills
PreCNC	Problem solving with computer, math basics, and feeling more comfortable with computers
PreCNC	CNC programming
PreCNC	Math and computers
PreCNC	Would like to be more computer literate
PreCNC	Math, reading, and computer skills
PreCNC	Math
CNC	Math, computers
CNC	Computer usage, reading and writing
CNC	All of the above
CNC	Test taking skills
CNC	Computer and communication skills
CNC	Math, reading, writing, computer, and communication skills
CNC	Algebra, geometry, percents, and decimals
CNC	I need more computer knowledge.

PPLC analyzed goal statements from the project director, project coordinator, supervisors, and employee participants. For a discussion of areas of convergence and divergence, please see the evaluation section, "Summary of Results," under Discussion.

PPLC next investigated the input of resources to the project, which is addressed in the next section of the evaluation.

Project Input:

What resources were available to the project during development and implementation and to what extent were they used effectively?

This section of the evaluation addresses major resources of the project. It includes program instructional materials, design and appropriateness for the targeted participant population; key personnel qualifications and the match between published project duties; and facilities. It also examines the content and processes used for instructor training. The data presented in this section were analyzed for strengths and weaknesses, using the following probes to guide the investigation interview questions and data collection:

1. Are the workplace literacy program materials consistent with its stated philosophy and goals?
2. Are adequate materials available for all phases of the workplace literacy program?
3. Do the workplace literacy materials and instructional techniques accommodate the literacy levels of the program participants?
4. Are instructors adequately trained to implement all phases of the workplace literacy program?
5. Are effective support services readily available to participants who need them?
6. Is the learning facility planned and equipped to support the workplace literacy program?
7. Is the workplace literacy program record-keeping system complete, simple, and efficient?
8. Are the expertise, training, and experience of key program personnel being utilized appropriately in the development and implementation of program activities for which they have responsibility?

1. *Are the workplace literacy program materials consistent with its stated philosophy and goals?* The instructional materials developed by project staff were based upon the results of the needs assessment process conducted with partnering organization. Additional commercially developed materials integrated into instruction were also

selected based upon the results of these needs assessments (*i.e.*, the Commercial Driver's License course for City workers). Two courses, considered representative of the stand-up training and computer-based training materials developed by the Project ALERT staff, were made available to the external evaluator for review. The review resulted in the following:

SPC-Prep - Instructor's Guide – a spiral bound paperback, consisting of 147 pages, printed single-side. Introductory materials (22 pages) include –

- Course overview
- Rationale for curriculum approach
- Implementation information, containing information on the needs of adult learners, setting the classroom learning environment, suggestions for working with various learning styles, and delivery tips
- Lexicon of terms describing various educational activities
- Instructor role and responsibilities
- Course objectives
- Description of session components and formatting
- Planning and scheduling for instructional unit delivery

The course is divided into two sections, SPC-Prep 1 (80 pages) and SPC-Prep 2 (34 pages) and includes "previews" or pretests, which also serve as posttests, plus scoring guides (without answers), for each part. The first part of the course is designed to be delivered in 24 hours of instruction; the second part, in 12-15 hours. No specific time is suggested for delivery of any one instructional unit.

Materials for each session include a formatted 1-2 page set of directions for learning activities, followed by copies of participant materials for the specific session. The directions for each session contain a statement of the focus of the session and/or its desired outcome; a list of materials required for delivery of instruction; suggested activities to activate learners' prior knowledge of the topic; description of an exercise or exercises focusing on specific computational or math awareness skills; a brief statement of how the skill relates to workplace tasks or to

everyday life activities; and, a space for written instructor evaluation of the session success.

Topics for instruction are-

"SPC-Prep 1"-

- Math Memories
- Keeping Track of Learning
- Introduction to Math Operations
- Place Value
- Whole Number Practice
- Rounding Off Numbers
- Finding the Average or Mean
- Introduction to Decimals
- Math Operations with Decimals
- Basic Operations Using Decimals
- Rounding Decimals
- Positive and Negative Numbers—Signed Numbers
- Number Lines
- Rules for Working with Positive and Negative Numbers
- Addition and Subtraction with Positive and Negative Numbers
- Rule for Adding 3 or More Signed Numbers
- Multiplication and Division Rules with Signed Numbers
- Introduction to Fractions
- Basic Operations with Fractions
- Common Denominators
- Basic Operations with Mixed Fractions
- Changing Fractions to Decimals
- Changing Fractions to Decimals and Percents
- Finding the Percentage of a Whole Number

"SPC-Prep 2"-

- Keeping Track of Learning
- The Need for Quality
- Changes in the Approach to Quality through History

- Quality in the Workplace
- Introduction to Statistics
- Statistical Terms
- What is Statistical Process Control?
- Recognize, Use and Understand SPC-Related Terminology
- Introduction to Tables, Charts, and Graphs
- Types of Graphs
- Acceptable Range
- QW 9000: What Can Customers Expect from a Supplier's Quality System?

None of the sessions contained actual workplace materials or scenarios from the partnering organization(s) for illustration or practice of skills addressed during instruction. The only mention of the workplace was in word problems framing operations with mixed fractions, and these were either unrealistic or imagined, rather than actual workplace uses of the skills. For example,

> *"The factory needed new security fencing around the plant. The land around the factory measured 3 7/10 miles on each of its four sides. How many miles of security fencing is needed to replace the old fencing?"* [It is highly unlikely that security fencing would not be installed by an outside firm, rather than class employee participants.]

> *"If an oil drip pan weighed 10 ½ pounds, how many could you cut from 840 pounds of steel? (Do not be concerned about scrap pieces.)"* [It is highly unlikely that a worker responsible for cutting or stamping parts from a sheet of steel would be concerned with weight, rather than with sheet dimensions, part dimensions, kerf dimensions from cuts, AND with layout resulting in the least amount of scrap.]

A word list for SPC-Prep 1 terms, a glossary for SPC, and a bibliography of sources, from which some of the instructional materials were adapted, were also included in the *Instructor's Guide*.

SPC-Prep 1 -Participant's Manual – a paper, pocket-folder binding 60 pages of participant materials for use during instruction. In addition to topic-specific worksheets for practice exercises, the manual contains:

- Introduction to the course
- Course goals [instructional objectives]
- Directions for using the *Participant's Manual*
- Form for self-evaluation of learning to be used with each session (1 copy)

Math for Machine Operators: GET IT IN GEAR! -Instructor's Guide- spiral bound paperback, consisting of 131 pages, printed single-side. Introductory section (36 pages) contains:

- Overview of course purpose, objectives, and time requirements
- Course description
- Scope and sequence chart for units of instruction
- Suggestions for interacting with participants
- Suggestions for using assessment to individualize instruction
- Techniques (for participants) to use for studying mathematics
- Decision-making guidelines for use of calculators by participants
- Implementation information, containing information on the needs of adult learners, setting the classroom learning environment, suggestions for working with various learning styles, and delivery tips
- Lexicon of terms describing various educational activities
- Instructor role and responsibilities
- Course objectives
- Description of session components and formatting
- Planning and scheduling for instructional unit delivery
- List of recommended resources for supplemental materials

The course utilizes two instructional methods—stand-up training with paper/pencil materials and computer multi-media instruction accessed from a CD-ROM. It is designed for integrated instructor-led delivery within 40 hours, (two

2-hour sessions for 10 weeks), but also has the flexibility of being used as independent self-instruction by participants. The *Instructor's Guide* includes "previews" or pretests, which also serve as posttests, plus an answer key.

Materials for each session include a formatted 2-4 page set of directions for learning activities, followed by copies of participant materials for the specific session. The directions for each session contain a unit and session title, description of session goal and objectives, a list of prerequisite skills; reference to the portion of the CD to be used for the session; a list of materials required for delivery of instruction; suggestions for delivery of instruction; reference to a commercially published topic-specific general math pretest/posttest source; a statement of the targeted participants' purpose for learning the topic; description of paper/pencil and computer exercises focusing on specific math skills; suggestions for evaluating participant learning; commercially published resource materials; and an exercise or suggested exercise(s) in commercially published math workbooks for homework assignments.

Topics for instruction are-

- Whole numbers
- Place Value, Rounding, Addition, Subtraction
- Multiplying and Dividing
- Multiplication Tables
- Exponents and Square Roots, Order of Operation
- Decimal Numbers
- Decimal Place Value
- Reading and Writing Decimal Numbers
- Rounding Decimal Numbers
- Adding and Subtracting Decimal Numbers
- Multiplying Decimals
- Dividing Decimal Numbers
- Positive and Negative Numbers
- Adding and Subtracting Positive and Negative Numbers
- Multiplying and Dividing Positive and Negative Numbers

- Percents
- Converting Decimals and Percents, Percent Calculations
- Measurement and Statistics
- Average (Mean), Mode, Median, and Range
- Geometry
- Angles
- Circles
- Cartesian Coordinate System
- Metric System
- Magnitude

By design, the course was generic in its content, using only one workplace example in the paper/pencil materials, a Sample Hofler Report for CNC equipment displaying machine corrections to be entered into a computer. The general approach to math used by machine operators was chosen to provide greater flexibility for use of the course in a variety of small to medium manufacturing environments (*Instructor's Guide*, pg. 7).

A glossary for math for machine operators was also included in the *Instructor's Guide*, along with a list of references used in developing the course contents.

Math for Machine Operators: GET IT IN GEAR! - CD-ROM for Participants-
An IBM-compatible CD-ROM, operating in a Windows 95 environment, minimally requiring 16 MB of ram, a 256-color monitor set to 600x800 resolution, a mouse, a keyboard, a 4x CD-ROM drive, and a 486 processor with sound card and speakers.

The CD-ROM manual lists 9 lessons:

- Decimals and Integers
- Adding Decimals
- Subtracting Decimals
- Adding and Subtracting Positive and Negative Decimals
- Understanding Averages and Ranges
- Reading and Writing Decimals

- Understanding the Metric System
- Understanding Magnitude of Small *vs.* Large Numbers
- Understanding the Cartesian Coordinate System

Additionally, during review, the external evaluator determined that the CD-ROM contains a tenth session, entitled "Combining Integers." By design, the graphics are generic, (*Instructor's Guide*, page 7), rather than workplace specific, although approximately one third of the graphics are workplace-related. Video clips are utilized in some sessions as visual vehicles for relating session contents to users' prior experience. One session is completely workplace related, using a CNC machine computer screen displaying a Hofler Report into which the user is required to enter calculated machine corrections. Lessons contain 20-25 screens with links to additional support screens. Average readability of the text on those screens selected for sampling by the external evaluator is an estimated reading grade level of 9.9 (FORCAST formula for workplace materials, Ford, Fox, Caylor, and Sticht, 1971). Sentence length on the screens sampled ranged from 7 to 31 words, with an average sentence word count of 13 (screens in Understanding Magnitude of Small *vs.* Large Numbers lesson).

The program is mouse driven, with a bank of icon buttons at the bottom of each screen. For example, "Next" moves the program forward to the next screen; "Details" provides additional information about the math topic or example displayed on the screen. When buttons are inoperable for specific screens, they are greyed out. For a user with previous experience in the Windows environment, the use of the buttons is intuitive. Each screen contains a "Narrator" icon button depicting a head set which activates an audio version of the text on the screen. This feature not only accommodates users with auditory learning style preferences, but also facilitates use of the program by readers whose ability level is not as high as that used in the screen text displays. All screens are designed to appeal to adult users. Examples of math use are interesting and informative in content and in the accompanying graphics and animation accompanying the text.

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contained in the CD-ROM (*GET IT IN GEAR! CD-ROM Manual*, page 6). Several "bugs" were encountered by the external evaluator while reviewing the CD contents. These included:

- inability to exit the lesson by clicking on the "Quit" icon button at the end of the test questions at the end of the lesson, or by the "Quit" icon button in the main menu, or by using the "Escape" key.
- missing narration in several screens
- error messages appearing on screens occasionally
- "Details" screens indexed to incorrect main screens (*e.g.*, "Details" screen for screen #20 activated by "Details" icon button on screen # 1 in Magnitude of Numbers lesson)

Lessons conclude with several practice questions followed by several test questions whose responses are recorded in the program management system. The question formats include true-false, short answer, and short essay. The questions relate to key concepts presented in the lesson. Entry of responses is keyboard skill dependent for short answer and short essay formats. Programming denoting a response as correct appears to be limited to exact responses. Question stems contain syntax that is sometimes incompatible with the recognized response. For example, the stem of one short answer question required the response "is large" but the program counted the answer as incorrect if more than just the word "large" was entered as a response. Some test questions require an instructor to review the user's entry on the screen and judge the correctness of the response. If no instructor is available, the program may be advanced by depressing the ENTER key twice, but there are no directions to the user indicating that this action is necessary.

2. *Are adequate materials available for all phases of the workplace literacy program?* Materials were developed for the Davis site following extensive analysis of job tasks as part of the needs assessment process. Following pilot phases, curriculum was refined and also customized to meet the needs of the City and Axle sites, and additional courses were developed to complement the originally developed courses. There were no reports of inadequate instructional materials during any phase of project operations,

3. *Do the workplace literacy materials and instructional techniques accommodate the literacy levels of the program participants?* Studies done in the Detroit area prior to the partners applying for this grant (1988, 1994) indicated that the target audience for grant services were likely to have a 25% rate of functional illiteracy, a high incidence of first languages other than English, and low levels of formal education. The available demographic data collected by Project ALERT (n = 329) showed that the majority of participants were born in the United States (92.7%), speak English at home (96%), and have completed 12 or more years of formal education (76.3%). Data also showed that almost one third of the participants had some college. Test of Adult Basic Education (TABE) tests, administered to diagnose individual needs and estimated grade levels of ability in reading and math, were reported as raw scores rather than as scaled score grade equivalents to protect the privacy of participants. For this reason, it was not possible to use these scores as a means for determining the general compatibility of participant literacy levels with materials written at an estimated 9.0-10.0 reading grade level and addressing estimated 5.0-10.0 grade level math concepts. However, research indicates that the average high school graduate in the United States in the mid 1970s could read at an estimated reading grade level of 8.0-9.0 and perform math skills at an estimated 6.0-8.0 grade level. Since the mean age of project participants is 39 and the majority are high school graduates (58.7%), it can be assumed that the materials accommodated the literacy levels of most of the targeted participants. Additionally, materials reviewed by the external evaluator contained previews that further diagnosed specific needs of learners before instruction was delivered. Instructional units began with review or re-teaching of basic concepts. The CD-ROM includes narration of text on screens, which provides additional accommodation for individual participants with low reading or English language ability levels. In addition to formal instructional sessions, instructors at the Davis and City sites scheduled extra tutorial sessions to help employees with special needs.

4. *Are instructors adequately trained to implement all phases of the workplace literacy program?* The Project Director reported that the Program Coordinator hired and conducted training sessions for all of the contracted project instructors. The external evaluator was not provided with content of the training sessions;

however, the *Instructor's Guides* that were reviewed contained extensive information on suggested delivery techniques and comprehensive outlines of session content. In addition to the pre-service training and monitoring of instructors conducted by the Program Coordinator, a 12-session staff development seminar was conducted from August, 1996 to May, 1997. Evidence of successful training also can be inferred from the high levels of participant satisfaction and mastery of course objectives and the thoroughness with which data were collected by instructors during project operations. (Please see the "Product" section of this report for additional detail.)

5. *Are effective support services available to participants who need them?* Support services were available to participants on several levels. Union members had access to the many social and educational services provided by their organizations. WSU conducted regular meetings with joint management and union representatives throughout the project, which provided opportunity for discussion and resolution of any necessary support services for participants beyond those built into the courses. The comprehensive educational background of the Program Coordinator, an employee of the Detroit Public Schools who was directly responsible for the training and monitoring of instructors, included extensive experience in adult education and upper level coordination of educational services and social agencies. This background provided an additional avenue for identification and acquisition of appropriate support services for participants beyond those inherent in the courses. Another level of support was built into the project structure as a model for supervisor orientation and supervisor follow-up for instruction. The purpose of this project component was to ensure that "front-line supervisors understood what employees would learn in the classes and how they could support the new learning behavior" (1998, *Final Performance Report*, page 15). Yet another level of support services was evidenced in the provision of facilities at the UAW-Chrysler Wayne Family and Community Learning Center and of 20 new multi-media computers by the UAW-Chrysler National Training Center; in the contribution of funds to construct a classroom at the Axle plant site; in the renovation of a storage area for on-site classroom use by Davis Tool; and in the refurbishing of a trailer with new heating/air-conditioning

systems, phone lines, furniture, and computers by City Management at the City Disposal site (1998, *Final Performance Report*, page 4).

6. *Is the learning facility planned and equipped to support the workplace literacy program?* As stated above in Question 5., facilities were constructed, renovated, equipped, and/or rearranged for use for instructional delivery and project meetings by each of the partners. Instructional areas at all four sites (Axle, City, Davis, and Wayne Center) were designed to support both stand-up training and computer-based training. The Project Director reported that employees suggested classroom location preference and design at Davis; and, at Axle, large, bright, well-furnished and well-equipped classroom areas with computers were made available for use by the project. The external evaluators originally hired by the project, Drs. Larry Mikulecky and Paul Lloyd of Indiana University, visited three of the sites in March, 1996 and submitted the following information on facilities in their site reports (May, 1996):

    - Davis Tool –"The classroom, which is located above the shop floor, is a former storeroom that has been converted by the company into a teaching area. All interviewees agreed that the classroom was very suitable, the instructor and one learner comparing it favorably with school classrooms they knew. Its location right on site was seen as a great advantage. However, this also produced its one major disadvantage—the noise and vibration from a press operating underneath the classroom. Only one possible change to the classroom was mentioned: the instructor would like more board space. [Objective 1.4 *To design resource-rich classrooms that support traditional and technology-based instruction*. The classroom provided by Davis is adequate to its purpose. The only qualifications to this concerned the noise level and a desire for more board space. If the program expands to include more emphasis on individual learner development, then more learner materials and space for their display would be needed." (pp. 3, 5)

- City Disposal –"The classroom is a trailer which the company has brought to the worksite. This location on site was seen by all interviewees as a great advantage: 'There's no temptation to drive off home instead of to class.' However, the small size of the trailer is a problem ('The fellas are kinda big') and has become more so as demand for classes has increased. The General Manager commented: 'If I'd known, I'd have gotten a bigger trailer.' The solution at present is to have multiple classes—and waiting lists. In addition, one of the participants mentioned the inconvenience of having no bathroom close to the trailer. The instructor was impressed by the response to any requests that she had about locks or electricity: 'If ever I need anything, they're right here.' [Objective 1.4 – *To design resource-rich classrooms that support traditional and technology-based instruction.* The trailer provided by City Disposal is adequate to its purpose. The only qualifications to this concerned its small size and the lack of a bathroom.]" (pp. 3, 5)

- Chrysler Detroit Axle – "The Production Manager had high praise for the help that the project had given them in designing the new classrooms, 'which we use a lot.' One contained 12 computer stations and the others were fitted up well for class or small group teaching. [Object 1.4 – *To design resource-rich classrooms that support traditional and technology-based instruction.* The multimedia and other classrooms provided by Chrysler Detroit Axle are of high quality and very suitable for their purpose." (pp. 2, 4)

7. *Is the workplace literacy program record-keeping system complete, simple, and efficient?* Data were gathered for two different project activities: during the instructional development pre-design analysis phase of operations and during and after implementation to conduct impact research and evaluation tasks. Documentation of pre-design analysis was facilitated by three instruments that were designed, piloted, revised, and validated by project staff: *Hourly Employee Interview*, *Supervisor Interview*, and *Observation Checklist*. These instruments were used to standardize data collection for curricula design across sites. Data

were collected with the instruments by interviewing approximately 55 hourly employees, union officials, and supervisors, and by observing shop-floor operations for pertinent job tasks. Instructors collected data for impact research and evaluation. Data collection instruments used are detailed below:

- *TABE- Reading Test-* Four reading passages ranging from 350-415 words in length. Passages are in different formats (recipe, classified section of telephone directory, informational articles), each followed by five to seven multiple choice reading comprehension questions. Timed test, 25 minutes to complete 25 questions. Administered before and after each course, except during last 6 months of project operations in 1997.
- *TABE- Math Test-* Fifteen problems requiring use of addition, subtraction, multiplication, and division of whole numbers; mixed fractions,; division of fractions; calculations with decimals, percents, and negative numbers. Timed test, 9 minutes. Administered before and after each course, except during last 6 months of project operations in 1997.
- *Learner Enrollment* – Forty items, including demographic information and self-ratings of job literacy abilities, workplace context, and perceptions of basic skills. Administered during participant intake process.
- *Learner Assessment* –Twenty items, including self-assessments of abilities and work environment, interest in additional classes, and possible impact factors that may have occurred since the course began. Administered at the completion of each course.
- *Learner Expectation* – Open-ended questions for indicating areas in which participants hoped to improve while taking the course and areas in which participants perceived they had improved after taking the course. Top half of form administered prior to instruction, bottom half of form completed after completion of instruction.
- *Project ALERT Participant Survey* – Four open-ended questions asking what participants liked, disliked, and thought were most important about the course, plus open comments.

- *Six-Month Survey* and *–Twelve-Month Survey* – Two part instruments, similar to each other. First part: 39 objective, 5-point scaled questions concerning course outcome impact on the job and in everyday life. Second part: 13 questions for a 20-30 minute person-to-person interview.
- *Customized Pre/Post Course Mastery Tests*- Designed to reflect content of specific courses. Number of items varied by course. For the two courses reviewed by the external evaluator, pre/post course mastery tests were identical instruments, containing 8 to 19 items. Untimed.

8. *Are the expertise, training, and experience of key program personnel being utilized appropriately in the development and implementation of program activities for which they have responsibility?* The Project Director provided a detailed list of proejct duties for each of the key project members, including the Project Director, the Assistant Director for Instruction, the Program Coordinator, the Project Secretary, the Co-Principal Investigators, the Graduate Research Assistants, the DPS Liaison, the Student Assistants, the Accounting Assistant, the UAW-Chrysler Liaisons, the Instructors, and the Video Technician. These duties were matched to those WSU professional record forms, vitae, and resumes made available to the external evaluator. Many of the project staff held advanced degrees. Of the paired information able to be obtained, there was evidence that the project responsibilities of most of the key personnel closely matched their educational specialties and experience. Information published in the *Final Performance Report* (1998) provided evidence that most of the duties assigned to various areas of responsibility during project operations had been completed or were scheduled for completion in the near future. (Please see the "Process" section of this report for more details.)

For a discussion of strengths and weaknesses of available project resources and the effectiveness of their use, see "Summary of Results" under Discussion section of the evaluation. The next section of this evaluation examines the process of project delivery.

Project Process:

> *To what extent were program operations, development and observed instruction congruent with project goals and research on instructional effectiveness?*

This portion of the evaluation report examines program operations, development, observed instruction, and daily activities to determine their level of congruence with project goals and current research on effective workplace literacy, using the following probes to guide interview questions, data collection, and data analyses:

1. Are current records of routine program activities in the workplace literacy program maintained and do these activities reflect stated goals?
2. What are each participant's current progress, instructional activities, and learning needs?
3. Are the workplace literacy program instructional decisions and activities generally consistent among instructors who have similar responsibilities or who serve the needs of similar participants?
4. Are participants in the workplace literacy program making the progress that was anticipated? How is this determined?
5. How much time is spent in instruction with workplace literacy program participants in whole group, small group, individual formats?
6. Are the workplace literacy resources planned for use actually being used?
7. Is there a need for additional resources not initially planned for?

1. *Are current records of routine program activities in the workplace literacy program maintained and do these activities reflect stated goals?* The extensive database developed by the project contained thorough records from all classes, including course completion rates, pre/post test scores, and participant assessments of course applications to their jobs and to everyday life activities. Seventy-eight classes were delivered in addition to the computer learning courses delivered at the Wayne Center. Summaries of project pre/post learning gains displaying mean scores evidenced gains for all courses at Davis, City, and Axle sites, indicating mastery of skills and concepts by many employee participants.

Reports prepared by the previous external evaluators, Mikulecky and Lloyd in 1996 and 1997 indicated consistent progress on development of traditional and technology-based curricula for use in project operations, successful recruitment and development of instructional facilities, and somewhat less than adequate progress in analysis of collected data for impact research and cost/benefit analysis. Annual performance reports prepared by the Project Director contained documentation of project activities conducted during each year of project operations, categorized by project goals and deliverables. A matrix contained in the *Final Performance Report* (1998) details progress on curriculum development, implementation activities, program expansion by sites, research, institutionalization efforts, dissemination, and delivery of instruction.

2. *What are each participant's current progress, instructional activities, and learning needs?* Pre-instructional testing with customized course mastery instruments and the TABE, along with data collected from the *Learner Assessment* and *Six-Month Surveys* document participant progress toward individual learning goals. Combined mean post-course self-ratings for all three partner sites were 3.3 for ability to apply skills learned on the job and 3.3 for ability to apply skills learned in everyday life on a 5 point scale, with 5 being high. This indicates positive participant perceptions of progress in learning. (For more detail on project outcomes, please see the "Product" section of this report and the Appendices.) The *Instructor's Guides* and participant materials document the instructional activities for each traditional and technology-based course.
3. *Are the workplace literacy program instructional decisions and activities generally consistent among instructors who have similar responsibilities or who serve the needs of similar participants?* The only evidence available to the external evaluator for addressing this issue was that information contained in two of the site visit reports prepared by the previous external evaluators, Mikulecky and Lloyd (1996:

    - Davis Tool –"Instructor Priorities – All interviewees (except, of course, the instructor), had high praise for his commitment and availability to help those who were having difficulty. One participant

stated: 'He's not in a real hurry to get the heck out of here' at the end of class time. The participants were also impressed by his giving out his home telephone number for them to call on Saturdays. The Human Resources Director thought that this caring attitude may have kept some workers attending the class. The instructor himself saw his priorities as evaluating student needs and attitudes, and then evaluating skill levels. He also mentioned the importance of feedback from and to students: 'You need to let them know you care.' Connection between class and the workplace – The instructor took a wider view of the workplace connection, dealing in class with career security and encouraging workers to develop skills other than for Davis through other educational institutions. This extended to bringing to class community college enrollment information. Both participants had picked this up and spoke of their need for more education as a preparation for an uncertain future: 'Davis may not survive—education helps' and 'If I need to get a new job, I'll be better prepared.'"

- City Disposal – "Instructor Priorities – The instructor saw her top priority as planning for ideas to involve the students, because she saw communication and confidence-building as very important. She commented that some students were ashamed of their inability to read and write, but she described their speaking and listening skills as 'outstanding—they surprised themselves.' For the CDL class, she emphasized knowing the material (which was new to her), but pointed out that 'the CDL is reading comprehension,' which related to her background in reading education. She summed up her attitude to teaching in the words: 'Respect yourself and respect your students.' That this attitude had come across to the participants was clear from their comments, which included: 'She is prepared and on time,' and 'She's a good teacher—with a problem, she'll take time to help out.' They were particularly impressed that she had taken the CDL test with the first class: 'The lady cares.' The General Manager and the Human Resources Director had also heard such comments and emphasized the

instructor's patience, non-intimidating personality, and good rapport with her students. In addition, the instructor regularly prepares a 20-minute cassette tape to guide the work of one student who is virtually a non-reader. This extra effort and dedication on the instructor's part has been noticed by many and was a word-of-mouth recruiting aid. Connection between class and the workplace – With regard to the Communications class, the Human Resources Director anticipated an increase in skills at filling out forms, route sheets, and tracking reports, as well as talking over the radio, noting that the class uses company forms. The instructor already saw changes: 'They are eager to start the newsletter [a class activity] and they are more relaxed and willing to speak up.'"

These reports indicate that there is a high level of commitment to the participants and to the program and its success across project sites. It is inferred from project reports that instructor training and the additional staff development sessions were geared toward establishing and maintaining consistent standards for instructional delivery across all sites and classes. Information in the *Instructor Guides* also support this inference. Monitoring of instruction and classes by the Program Coordinator and the Assistant Director for Instruction (*Job Positions/ Descriptions*, 1998) also support the inference that consistency across instructional sites was encouraged and supported.

4. Are *the participants in the workplace literacy program making the progress that was anticipated? How is this determined?* Participant progress was determined by scores on diagnostic pretests (customized course tests and the TABE Reading and Math tests) and parallel or identical posttests. Additional information was gathered by self-report of participants on the *Learner Assessment* and *Learner Expectation* forms used with each course. As noted in Questions 1. and 2. above, leaner self ratings and posttest scores all indicate general gains for each course at all sites.

5. *How much time is spent in instruction with workplace literacy program participants in whole group, small group, or independent instructional formats?*

The only sources for addressing this issue were the two *Instructor's Guides* reviewed by the external evaluator. Both of these detailed lesson plans encouraging use of all three formats for instruction. Even the technology-based *Math for Machine Operators: GET IT IN GEAR!* integrated traditional paper-pencil training with the computer delivered instruction, thus enabling group processing of information and learning.

6. *Are the workplace literacy program resources planned for use actually being used?* Evidence from reports and databases indicates that program resources planned for use were used during program operations. The only exception appears to be the original research plan, which was modified during the project. The *Needs Assessment Process* and related instruments for data collection to analyze job tasks and materials for literacy skills to use in development of whole language (or functionally contextual) instructional materials was created, refined, and validated for use during the project. Standardized but comprehensive sets of questions were developed for use at work sites with hourly employees and supervisors, along with observation checklists for understanding and referencing shop floor observations of job tasks being performed. The strong emphasis and built in structure for including workers in this process demonstrated the strength and mutually supportive nature of the partnership between employers, labor organizations, and the educational providers. Procedures for gathering data and the development of relevant forms for impact research and for project evaluation provided the means for rapid, consistent, and complete responses to investigative inquiries, as well as formatting that facilitated entry of data into the databases created. Facilities, instructional materials, and division of staff responsibilities were developed and/or used as planned and described in the funding proposal (March, 1995). (Please see the "Input" section of this report for more detail on these project resources.)

7. *Is there a need for additional resources not initially planned for?* Specific site comments concerning facilities indicate that, due to the success of the program instructional facilities could have been expanded to accommodate more learners or activities. The previous external evaluators, Mikulecky and Lloyd, also noted in their reports that, although large amounts of impact research data had been

collected, analysis of it had not been completed. The current external evaluator found that, although the previous external evaluators had assisted the Project ALERT staff with developing categories for cost/benefit analysis, data were incomplete for comparing accomplishments with those of similar projects or for assigning them monetary values to perform return on investment calculations.

For a discussion of project process, please see "Summary of Results" under the Discussion section of the evaluation. Following receipt of final data in August, 1998, PPLC assessed program outcomes (or "product") to determine the degree of project effectiveness. The results are addressed in the next section.

Project Product:

To what extent are there indicators of project effectiveness?

The C.I.P.P. model enables gathering of evaluation data from more than one source to promote triangulation of results in an attempt to arrive at valid conclusions concerning project effectiveness. PPLC evaluated the Project ALERT program from three different perspectives of users:

- participant survey statements, coments, and self-rating statements concerning achievement of personal learning goals and value of the course;
- analysis of participant pre-program and post-program assessment scores;
- Analysis of costs *versus* deliverables by goal categories;
- review of documentation related to institutionalization and/or integration of Project ALERT training as a part of ,or with, existing partner training courses; and,
- review of documentation evidencing dissemination of project model and materials to other health care organizations, nation-wide.

The following set of probes was used to guide interview questions, data collection and analyses:

1. Are participants learning skill applications according to the workplace literacy program's definition of skill need for participant performance of critical job tasks?
2. Do program participants continue to use skill applications after they leave class?
3. Do program participants apply new learning to performance of critical job tasks?
4. Do program participants view the skill applications they have learned as having utility?

5. Is each participant acquiring the skill applications for critical job tasks as identified in needs assessment procedures at their work sites? Is progress satisfactory? Has job performance on critical tasks improved?
6. Can the partnering companies determine cost benefits derived from workplace literacy program instruction?

1. *Are participants learning skill applications according to the workplace literacy program's definition of skill need for participant performance of critical job tasks?* The first aspect of project effectiveness was determined from data collected on participant pre/post-program test scores. It provided evidence of learning gains by participants in each course, most of which were statistically significant to <.01. The Project Director furnished the external evaluator with the information displayed below. No individual participant or class scores were provided.

Course Title **Testing Instruments**	**n**	**Mean Raw Scores:** **Pre-Test Post -Test**	**Stat. Sign.** **<.01**	**No. who** **improved**
Results for Chrysler Axle:				
Math for Machine Operators	63			
TABE Math	21	7.6 (51%) 9.1 (61%)	YES	14
Customized *MMO*	48	16.2 (54%) 20.4 (68%)	YES	43
Effective Communication on the Computer	110			
TABE Reading	77	14.9 (60%) 15.9 (64%)	NO	39
Customized *ECC*	89	20.0 (48%) 25.0 (60%)	YES	68
Custom Computer	75	12.6 (58%) 16.3 (77%)	YES	59
Interpersonal Communication	124			
TABE Reading	83	16.5 (66%) 18.0 (72%)	YES	28
Customized *IPC*	103	10.9 (36%) 18.5 (62%)	YES	44
Results for Davis Tool:				
Apprentice Prep	58			
TABE Math	34	8.4 (56%) 10.1 (67%)	YES	22
TABE Reading	34	18.4 (74%) 19.7 (79%)	NO	22
Customized *APP*	34	22.5 (70%) 25.7 (80%)	YES	26

Course Title Testing Instruments	n	Mean Raw Scores: Pre-Test Post -Test	Stat. Sign. <.01	No. who Improved
Results for Davis Tool (cont.)				
Interpersonal Communication/ Problem Solving	--			
TABE Reading	54	18.6 (74%) 19.5 (78%)	NO	28
Customized *IPC*	54	10.8 (36%) 18.8 (62%)	YES	47
SPC Prep				
Customized *SPC1*	12	15.0 (41%) 20.4 (55%)	YES	9
Customized *SPC2*	14	3.6 (36%) 6.5 (65%)	YES	12
TABE Math	13	7.7 (51%) 8.7 (58%)	NO	6
Results for City Mgmt. Corp:				
Commercial Driver's License Prep	--			
TABE Math	15	2.7 (18%0 3.3 (22%)	NO	8
TABE Reading	15	16.4 (66%0 17.1 (68%)	NO	5
Customized *CDL*	18	38.5 (77%) 45.7 (91%)	YES	16
Technology for the Workplace	--			
TABE Reading	16	14.5 (58%) 16.3 (65%)	NO	11
TABE Math	16	6.8 (66%) 7.1 (68%)	NO	9
Customized *TW*	31	8.1 (43%) 18.1 (91%)	YES	28
Effective Communication	--			
Customized *EC*	10	11.5 (46%) 12.0 (48%)	NO	4
TABE Reading	9	8.2 (33%) 10.8 (43%)	YES	8
TABE Math	10	4.3 (29%) 5.5 (37%)	NO	7
Interpersonal Communication Customized *IPC*	-- 20	16.8 (56%) 21/3 (71%)	YES	16
Numbers at Work	3*	*[Not Analyzed]	--	--

The testing results most nearly reflecting the learning of skills identified during the needs assessment process were the customized mastery tests for each course. All of these tests results evidenced statistically significant gains in courses by participants, except one, the *Effective Communications* course at the City site.

2. *Do program participants continue to use skill applications after they leave class?* The response to this inquiry question was determined from data collected on 6-month follow-up post-program self-rating surveys and interviews. It concerned participants' perceptions of continued improved skill application on the job and in everyday life situations. The post-program survey results related to skill use frequency were as follows:

"Since you took the __ class, have you done any of the following things?"
A great deal-5, Frequently-4, Some-3, Very little-2, Not at all-1

Prompt Stem:	**Chrysler Axle Mean (n = 51)**	**City Mgmt. Corp. Mean (n =)**	**Davis Tool Mean (n =)**
Used the information on your job?	3.3	3.3	3.4
Used the information in everyday life?	3.6	3.5	3.2
Shared the information with others?	3.5	3.5	3.2
Decided on new career goals?	2.5	2.9	3.6
Decided on new education goals?	2.7	3.3	3.7
Taken more responsibility on your job?	3.0	2.6	3.2
Felt that you are more likely to get a better job?	3.0	2.9	3.6
Felt more satisfied with your job?	3.3	2.4	3.3
Felt that you are a better worker?	3.7	3.3	3.4

These data indicate that the mean responses were that workers perceive themselves as using the skills learned in the Project ALERT courses they took "some" on the job and in everyday life situations. It is important to note that

participants also reported taking "some" more responsibility on their jobs and felt "some" more satisfaction with their jobs at two of the three locations. Additionally, the courses made participants at all three locations feel that they were "some[what]" better workers. (Please refer to the Appendices for additional detail on the 6-month follow-up survey results.)

3. *Do program participants apply new learning to performance of critical job tasks?* Although no post-program supervisor ratings or participant observations were conducted to collect impact data, the 6-month follow-up self-rating participant surveys document perceptions of application of learning to performance of job tasks, as well as to everyday life situations. Mean results are displayed below for participant self-ratings for frequency of "better performance" and "more confident performance" of those skills addressed across all courses.

"Since you took the __ class, do you think you are <u>better</u> at the following things?"
Rating scale: Always-5, Usually-4, Sometimes-3, Seldom-2, Never-1

Prompt Stem:	**Chrysler Axle Mean (n = 51)**		**City Mgmt. Corp. Mean (n =)**		**Davis Tool Mean (n =)**	
	On the Job	**Everyday Life**	**On the Job**	**Everyday Life**	**On the Job**	**Everyday Life**
Reading	3.4	3.5	3.1	3.3	3.5	3.5
Listening	4.1	4.1	3.9	3.4	3.7	3.7
Doing Math	3.1	3.0	2.6	2.7	3.6	3.6
Speaking in Public	3.2	3.1	2.0	2.2	3.6	3.3
Speaking in Private	3.6	3.7	3.1	3.2	3.6	3.5
Taking Tests	2.9	3.1	2.7	2.5	3.8	3.8
Understanding words	3.5	3.5	3.4	3.4	3.7	3.6
Solving Problems	3.7	3.7	3.7	3.5	4.0	3.8
Following directions	4.0	4.2	3.9	3.8	4.0	3.9
Understanding your responsibilities	4.2	3.9	4.1	3.3	3.8	3.7
Expressing your ideas	3.8	2.5	3.5	3.4	3.8	3.8
Using a computer	2.5	3.7	3.2	3.7	2.0	1.9

"Since you took the ___ class, are you more confident in the following things?"
Always-5, Usually-4, Sometimes-3, Seldom-2, Never-1

Prompt Stem:	**Chrysler Axle Mean (n = 51)**		**City Mgmt. Corp. Mean (n =)**		**Davis Tool Mean (n =)**	
	On the Job	**Everyday Life**	**On the Job**	**Everyday Life**	**On the Job**	**Everyday Life**
Reading	3.6	3.6	2.5	2.7	3.8	3.8
Listening	4.1	4.0	3.3	2.9	3.6	3.6
Doing Math	3.2	3.1	2.0	2.1	3.6	3.7
Speaking in Public	3.3	3.3	1.9	1.9	3.6	3.6
Speaking in Private	3.7	3.8	2.6	2.9	3.1	3.1
Taking Tests	2.7	2.9	1.6	1.9	4.1	4.1
Understanding words	3.6	3.3	3.0	2.9	3.9	3.8
Solving Problems	3.9	3.8	3.1	3.2	4.2	4.1
Following directions	4.0	4.1	3.0	3.2	4.4	4.2
Understanding your responsibilities	4.2	3.9	3.3	2.7	4.1	3.8
Expressing your ideas	3.8	2.5	2.7	2.8	2.1	2.1
Using a computer	2.4	3.8	2.4	3.0	4.5	4.2

Responses ranged from "usually" to "seldom" with most reporting "sometimes" as the frequency of skill use both on the job and in everyday life activities. Data patterns indicate that those skills workers reported using most frequently across all sites were "listening," "following directions," and "solving problems." Those skills reported as being used least often were "expressing your ideas" and "taking tests." All skills taught, however, were reported by participants as being used to some extent six months after the course. (Please see Appendices for additional detail.)

4. *Do program participants view the skill applications they have learned as having utility?* In both *Learner Expectation* and 6-month post-program survey comments, participants indicated that the skill applications learned had utility to

them. Eighty-seven percent of respondents on the post-program portion of the *Learner Expectations* instrument (n = 89) indicated that their learning goals had been met or "almost" met. Comments on the courses taken from the 6-month post-program participant surveys included the following:

- This class was more beneficial to me. I think every employee should experience this class.
- The class was very basic and the information doesn't seem to be needed in my job.
- Need to have more time on the computer.
- Bring on the advanced classes.
- I think it would be a great benefit for the employee to have a second class in effective communication on the computer. [This] would give the student all the confidence they would need to operate a computer.
- Excellent. Instructors very helpful.
- Why send us to class when you can't follow thru it yourself. Management.
- When do we start the advanced classes?
- I learned a lot of simple ways to solve the problems, especially in the workplace. Sometimes we have to make the first attempts. How do you approach a person and what do you say to them—that is the key most of the time in solving a problem.
- Excellent tool to learn how to express, understand, and receive collective information from/to another.
- Excellent instructors. Very helpful.
- This class was a huge help in my private life as well as on my job.
- A really good concept. Communicating is the key to problem solving. Need [periodic] reinforcement.
- Classes for people who have been out of school for some time is a wake-up call; it isn't to learn some new things, it's a refreshing new outlook.
- "Outstanding" once people understand the purpose, which I have.
- Class is good, but we could have [done] less math and more computer.

- Very good class. I think about it a lot. I think everyone should take Pre-CNC Math.
- Don't stop, more...time.
- The teacher was great....
- I enjoyed the class. It gave me the ability to overlook some technical fears of operating computers. I can operate one now without worrying about erasing everything.
- I've enjoyed each class that I have taken and enjoyed knowing all of my instructors, as well.
- It's a good thing for people like me.

Participant course completion rates offer another, somewhat indirect indicator of the value participants assign to what is being learned. Rates of completion were 95% at Axle, 80% at City, 103% at Davis, and 100% at Wayne Center. Certain courses also attracted more participants than others. Again, this is an oblique measure, but does contribute to the overall picture. Courses reporting the most participants at the three partnering sites (with available data on 329 of the 683 total participants) were: *Interpersonal Communication* at Axle with 156 of the 363 total program participants, *Pre-Mobile Technology* at City with 46 of the 133 total program participants, and *DAT Prep* and *Interpersonal Communication* at Davis with 65 and 64, respectively, of the 159 total program participants. Additionally, participants were asked to rate the courses they took (5-point scale, with 5 as highest) and asked, *"Would you recommend this course to others?"* and *"Would you be interested in taking other courses?"* Results across all sites (n = 329) showed overall course rating as 3.6. Ninety-eight percent would recommend the courses they took to others and seventy-nine percent expressed interest in taking another course. (Please see Appendices for additional detail.)

5. *Is each participant acquiring the skill applications for critical job tasks as identified in needs assessment procedures at their work sites? Is progress satisfactory? Has job performance on critical tasks improved?* Because of project sensitivity to privacy issues for participants, no pre- or post-program data were collected from supervisors to determine levels of participant performance improvement. Most participants indicated on the 6-month follow-up surveys and

in their comments (see Question 4. Above) that they were using the skills learned or found them useful on the job. Only a few respondents mentioned the need for more advanced skills than what had been addressed with instruction. The gains on the customized tests for the courses developed under Project ALERT demonstrate mastery of the skills identified during needs analysis for performance of critical job tasks. Gains from pre-test to post-test ranged from 2% to 48%, with the average gain across all courses being 18.05%. (Please see table of pre-post test scores by site under Question 1 in this section for additional detail.)

6. *Can the partnering companies determine cost benefits derived from workplace literacy program instruction?* Data exist in the results of the Needs Assessment process conducted at each partnering company for identifying indicators to use in the cost-benefit analysis procedure. However, no monetary values were assigned to these items for calculating actual dollars saved or generated by the Project ALERT training courses. The list below displays suggested measurable indicators based on information identified by workers and front-line supervisors at each of the three sites:

Chrysler Axle:

- Quality and quantity information communicated orally when machines break down or there are defective parts
- Comprehending printed safety directions and Hofler printouts for machine setting corrections
- Accuracy of information entered on tally sheets for down time records and production of parts
- Clarity, completeness, and conciseness of written log book entries
- Number of incidences in which someone must read or translate for another employee
- Quantities and quality of items produced
- Scrap rates
- Training down time and rates of mastery for upgrades.

City Management:

- Quality and quantity of information communicated orally when there are defective parts, machine breakdowns, or inventory needs
- Comprehending dispatch forms and printed safety directions
- Accuracy and completeness of information on cards about machinery problems
- Number of incidences of machines crashing, being reset, or voiding tickets due to math errors
- Productivity: number of loads carried and miles traveled; number of repairs; number of good pieces produced; quality of product
- Clarity, completeness, conciseness of written log book entries
- Scrap rates

Davis Tool:

- Accuracy and completeness of written information on machine downtime forms
- Comprehension of printed packaging instructions, quality control charts, alerts, tally sheets
- Rate of errors in reporting tonnage of steel shipped
- Number of errors when charting quality data

The information above would require agreed upon standards for measurement and assigned dollar values in order to be used to calculate cost benefits.

Another option in determining return on investment is to examine the costs and deliverables by categories according to project goals. This procedure was suggested by the previous evaluators, Mikulecky and Lloyd. The Project Director provided the current external evaluator with a list of categories that had been derived from project ALERT goals, and accomplishments and costs associated with each of them. The following information was provided funding of $1,245,923:

Categories:	Admin	Needs Assessmt	Whole Lang Devl	Mult.Med Develpmt	Implemtatn	Documentatn	Research
% of Total	13.6%	8.2%	10.9%	11.7%	28.8%	13.9%	12.9%
Total $s	$169,620.	$101,606.	$136,343.	$145,990	$358,898.	$172,912.	$160,553.

Accomplishments were described as follows:

Administration:

Developed and refined overall project goals
Established "three-year vision" for deliverables
Developed expenditure guidelines
Hired and assigned staff as appropriate
Located and acquired resources for staff and site use
Developed roles and responsibilities for each staff member
Developed detailed project plan and timelines
Developed/maintained relationships with partner organizations
Held biweekly project team meetings
Conducted two-day off site retreat with partners and consultants
Ordered and logged supplies and materials
Developed and presented interim reports to partner organizations
Conducted monthly Local Joint Training Committee meetings at Axle
Organized "All Partners Meeting" to kick-off last year of grant activities

Needs Assessment:

Developed model for assessment process
Designed and validated three data collection tools: Employee, Supervisor, Observation
Executed data collection at three sites
Entered data into database
Developed summary reports for partner leaders at each site
Created methods for utilizing data in curriculum development

Whole Language Development

Designed and developed lessons for 20-40 hour courses on Apprentice Prep, SPC Prep, Technology for the Workplace, Effective Communication, and Numbers at Work
Designed and developed traditional course on fundamental communications (Interpersonal Communication and Problem Solving)

Developed templates for Instructor and Participant Guides
Developed all Instructor and Participant Guides
Presented at numerous conferences on this approach

Multimedia Development

Designed overall plan
Targeted area to show best advantage at Axle
Helped to purchase computers and software products
Located software intellectual property for possible integration
Purchased multimedia software for reading/writing course, Effective Communication on Computer
Developed and validated Effective Communication on Computer
Developed and validated multimedia course, Math for Machine Operators
Wrote Instructor Guides for two courses
Developed multimedia disk , Axle Process Flow (not used)
Partially developed course, Get It in Gear

Implementation

UAW-Chrysler purchased 20 computers and installed them at 2 locations, Axle and Wayne Center
Developed recruitment plans for all sites
Selected and trained UAW liaisons for project participation at Axle
Hired instructors
Organized and delivered courses at each site
Mentored/coached instructors at sites during/after instruction
Arranged and organized data collection procedures
Conducted supervisor feedback sessions
Designed and conducted 12 staff development seminars
Assisted with courseware purchase and installation at City and Wayne Center
Documented implementation process model

Documentation

Documented all project staff and external meetings at partner organizations

Wrote final site reports for each site

Prepared substantial document for Axle review; organized sessions to demonstrate products and services to joint union-management team including national headquarters

Developed numerous presentations on Whole Language Development for conferences

Gave presentation at conference and wrote book chapter on Implementation model

Gave presentation on multimedia development

Data base developed

- Data entered for learner enrollment and assessment
- Data entered for 3 needs assessment instruments
- Data entered for Axle
- Data entered for City
- Data entered for Davis

Research

- Model created
- Task list outlined
- Data collection scheme organized
- Data variables defined
- Pre-and Post-tests developed and approved for each site
- Performed literature search for related information
- Created and refined all data collection instruments
- Data analysis initiated; completed for learning gains

The greatest expense was for implementation of the project, which included instructor wages and purchase of computers and software. The second greatest expense was for curriculum development including both Whole Language and Multimedia components. The third greatest expense was for documentation, which included monitoring activities at local sites and creation of the project database. The smallest percentages of funds

were spent on needs assessment and research. It is important to note that these last two categories represent one of the major project goals and one of major project objectives.

Dissemination of program, program products, and research: The following activities have been conducted in relation to dissemination-

Book chapter published on implementing the project model

ERIC document produced

Presentations on the project at Illinois Literacy Conference (1996, 1997), American Educational Research Association (1996), Michigan Adult Curriculum Connection (1996, 1997), International Society for Performance and Instruction (1997), Workplace Learning Conference (1997, 1998), Coalition of Adult Basic Education (1997), Adult Literacy and Technology Conference (1997), and the AECT Conference (1998).

Appointment to memberships in the Manufacturing Skills Standards Council and to the Detroit city planning group to study issues for inner city adults.

Newsletters (*Education at Work*) and a brochure published

Institutionalization: Ongoing delivery of courses has been explored at Davis Tool, especially the *Apprentice Prep* course. City Management has been bought by another organization and is not continuing training. Chrysler Detroit Axle has reviewed the results and is continuing with use of some of the software, but will not continue training with the educational provider or the project developed products. Wayne Center became a stepping stone to other small companies in the area who continue to use products and services developed under this grant in the ongoing Empowerment Zone grant that dovetailed with this one. Based upon the success of this project, funding has been secured by WSU from the National Science Foundation to continue curriculum

development for use with small companies in both the Detroit and Chicago Empowerment Zones.

For a discussion of program product, or outcomes, please see "Summary of Results" under the Discussion section of the evaluation report, which begins on the next page.

Discussion

Limitations of this study - There was one major factor that acted as a limitation on the ability of this study to draw definitive conclusions from the evaluation. This factor was the difficulty experienced by the evaluator in collecting and obtaining some of the requested data due to the transition of evaluation duties after project operations had been completed from the originally contracted external evaluators to the current evaluator. Although the director in this project exhibited an exceptionally cooperative attitude, the unavoidable lack of contact with other key project personnel, partners, and participating employees functioned as a somewhat limiting factor in this evaluation. Additionally, some data that the current evaluator might have used as evidence to support project accomplishments had not been planned for or collected.

Summary of Results - The following statements provide summary and discussion of key findings from the evaluation of project context, input, process, and product.

Context - The extent to which the goals and philosophy of the project were shared by key project personnel and participants was found to be as follows:

Areas of convergence: There was a good deal of consensus about program goals evidenced in the continuity between needs assessment data and the resulting instructional products and activities. Interviews with the Project Director and Program Coordinator indicated that there was a high level of concurrence between project key personnel on the goals and objectives of the project. The courses developed and implemented reflected the published goals of the project. Many participants also expressed learner expectations that coincided with the course objectives in which they were enrolled.

Areas of divergence: The only area of divergence was found in some of the learner expectation goal statements for instruction. Some participants expected to acquire a broader range of skills than the courses addressed. This may have been due to publicity that was over general or recruitment methods.

Input: The availability to the project of resources during development and implementation and to what extent they were effectively used was found to be as follows:

Strengths and Weaknesses - The curriculum materials developed for the program were to be built from numerous contextual examples of skill applications that employees at the partnering locations must use in the performance of critical job tasks. This type of curriculum enables participants to practice skills in ways they will use them on the job. The two courses reviewed, one traditional stand-up paper/pencil delivered and one computer-based multimedia CD-ROM delivered, contained few examples from the workplace. Many of the topics, worksheets, and screens dealt with pure arithmetic and math. The contextual workplace examples were few, but those contained in the CD-ROM course were of a quality that simulated workplace application of math skills used in CNC machine operations. The CD-ROM did, however, contain some minor "bugs" which need to be cleaned from the program to improve its quality. Resources for program development appeared to be adequate financially for the development, publication, and delivery of instruction. Material development time lines and on-going revisions based on partner input and feedback that were incorporated across the delivery time lines for program activities might have impacted much more greatly on the stress levels of less experienced developers. Despite coordination across organizations and facilities and among development staff, deadlines were met and almost 700 employees received instruction.

Desk-top publishing the materials did not present a problem for the developers, nor did production of the accompanying multimedia components. Working in conjunction with the partners, developers were able to produce acceptable materials to meet union, management and employee needs.. The use of the same tests as both a pre- and post-assessment instruments for many modules provided a tool for measuring what was learned during the program and the degree of individual mastery of concepts presented; .however, using identical, rather than parallel instruments eliminated controlling for memory variables in the short period of time between measurements (usually less than 10 weeks). The CD-ROM testing format was short—having only 2 practice questions and 3 test questions, as was the case for several topics in the CD-ROM examined, limits the ability of the test instrument to determine mastery of content. Data collection instruments used for participant self-assessment also created limitations on the validity of the data collected. Participant responses on self-appraisal scales often are

skewed by a lack of commonly held and understood standards against which all participants were asked to measure their performance.

The formatting of the program curriculum was well designed, for both instructor guides and participant manuals, as well as for computer screens. Formal training sessions for instructors and the addition of in-service seminars underscore the high level of commitment to project excellence that appears to have run throughout the organizations partnered for the project. This commitment was also evident in the facilities and equipment for learning provided by each site. The amount of data that were collected for the inquiries selected for study also reflect the cooperative nature of the partnership.

Process: The extent to which program operations, development, and observed instruction were congruent with program goals and research on instructional effectiveness follows:

Areas of convergence and divergence – Data collection records across all sites appeared very complete, which is unusual for most project under this funding. Instructors seemed to have understood their responsibility in this area for results to be so high. Instructors also were reported to take an "above and beyond" the job description stance on delivering instruction. The learning environment they created, as well as the curriculum development process, is in agreement with that recommended by workplace literacy educators and labor organizations. In *A Union Approach to Workplace Education* (1995, Labor Education and Research Center, Eugene, Oregon), it is recommended that, like Project ALERT, worker-centered learning be used to build on what workers already know, that it address the needs of the whole person, and that workers and their unions are active in developing and planning programs (page 27). All of these items concur with project published goals and were evidenced in operational activities. The quality of instruction was good overall. All of the developers and the instructors appeared to be promoting "reciprocal learning" with the participants; and instructors reportedly displayed a caring attitude and willingness to assist participants achieve their goals.

Project management, selection and recruitment of participants, and so on, were well administered and appeared to be effective, with numbers of participants appropriate

to total populations at sites. Participant comments about what they expected to learn and what they actually learned were good indications that, after the program design and contents were determined, program advertisement and publicity, for the most part, accurately reflected content.

Regularly scheduled meetings between the partners and the educational provider, plus the use of liaisons and active participation in these meetings by representatives of the partners demonstrated a high level of commitment and ability to work as a team. Topics addressed in the meetings and in reports appear to have allowed all partners to be kept up to date on project activities and progress and to give input into the decision-making process as options arose and were explored.

Product: The impact of the program was assessed with a combination of indicators, including comments gathered from participants, comparison of pre- and post-assessment scores, , and evidence of dissemination. A summary of the results follows.

Business and industry organizations normally evaluate training on four levels. Because workplace literacy programs are directly related to assisting workers attain career goals by meeting job requirements and improving performance on job tasks, it is appropriate to measure program outcomes using this yardstick:

Level I - Does the proposed program match with an identified organizational need? In this case, the front-end analysis conducted by WSU identified organizational needs for improved workplace basic skills applications at Chrysler Detroit Axle, City Management Corporation, and Davis Tool. Comparison of the objectives and contents of the developed training materials with these front-end needs analyses show that specific critical job tasks and job materials usage were identified and targeted. The skills presented for instruction, although not all contextualized to the workplace, were the skills identified as necessary for job performance.

Level II - Do the participants selected for training master the content of the training program? Impressive, statistically significant gains from pre-/post-assessment scores,

and post-program statements by participants, compared to pre-program goal statements, provide strong evidence that participants mastered the content of the Project ALERT course materials. Post-program survey items provided extensive evidence that participant goals had been worked toward or met, and that these goals coincided with the objectives of the training programs. Gains on the assessment instrument also demonstrated training mastery. That gains were consistent in each category of assessment and for each of the courses provides an indication of the appropriateness of item design for discrimination in the traditional courses. To further determine item difficulty and discrimination capabilities, and memory interference variables, a detailed analysis of response errors would need to be conducted.

The average percentage of gain was 18% on customized course mastery tests. When compared to gains on standardized academic basic skills tests, this is comparable to a gain of two stanines, usually equated with two grade levels of improvement, within just forty or fewer hours of instruction. Research on the transfer of learning and on basic skills suggests that the reason for this might be use of the functionally contextual, or whole language design of instructional sessions: 1, the closer the training task matches with the desired performance outcome, the more likely it is that positive transfer of learning will occur (Gick and Holyoak); and, 2, even a small amount of previous experience and knowledge base for the context to which the skills will apply, enables the learner to activate schema and raises the difficulty level of materials that can be comprehended by approximately 1-1.5 reading grade levels above that which would be achieved on a standardized reading test. Additionally, workers were asked what they would like to have included in training during the needs assessment process, which encouraged psychological buy-in through self-selection and input—which also enhances motivation to learn. (A complete display of assessment data can be seen in the Appendices.).

Level III - Do those participants who master training demonstrate improved job performance in areas identified as critical, to show positive transfer of learning?

Comments elicited from participants indicate that their perception of their personal learning was that it would impact on their job performance. The ability to transfer learning from training to performance is most dependent on the trainee's ability to identify performance situations to which he or she will apply the newly acquired skills,

along with opportunities to use the new skills and the motivation to do so (Bramley). Again, the use of a functionally contextual approach facilitates recognition of situations in which new skills can be applied to performance. The supervisor sessions to support learning also were important factors in using the skills beyond the classroom. That the participant scores demonstrate their mastery of the applied basic skill competencies they need to perform competently in their jobs, and that supervisors value these skills, (needs assessment data) provides an indication that, with motivation and opportunity to use their new skills, employees will, in fact, transfer what they have learned to their job performance.

Level IV - Does impact on performance lead to demonstrable cost benefits, i.e., money saved or generated by the positive change in employee behavior? In this case, the partners did not report indications of positive program impact via individual behavioral indicators, performance appraisals, or supervisor ratings before and after training participation; nor did they assign values to indicators or cross-reference these with the instructional objectives of the program. No data exists, therefore, for determining the possible cost benefits derived from employee participation in the program. During structured interview sessions with supervisors during the needs assessment process, various indicators of improved job behaviors were identified. These could be studied with a control group design to determine possible cost benefits from the training program, both immediately following training and at three month intervals thereafter, to determine the amount of long-term gains and their retention.

When programs are underwritten by federal funding, it is viewed in a positive way to apply such monies to value-added training for an organization's workers. When an organization does not elect to invest in continued human resource development, (*i.e.*, the program), at this level of commitment beyond the funding period, it indicates that such training has not become an organizational priority. In information provided to the evaluator by the Project Director (*Final Performance Report*, 1998) the decision to institutionalize the demonstration project training courses as developed was viewed as highly unlikely. However, portions of the programs had been identified for continued delivery. The curriculum and project model for implementation was also targeted for continuation with other small manufacturers in the area through diffusion into the regional Empowerment Zone. This is strong evidence that the program is perceived to be

one that adds value to the Detroit-area manufacturing community of companies and labor organizations.

If WSU is to continue offering Project ALERT courses as a part of other tangent projects in the area, the tasks and materials will need to be updated and customized periodically to ensure that they remain valid contextual examples of actual workplace situations and requirements. The process and design pattern for curriculum development set out by WSU in its model of whole language and multimedia instruction provides a proven prototype that could be replicated for development of additional exercises. The training and use of the materials in the future is wholly dependent upon the decisions of the partnering and other local companies; but the well-developed, structured, published instructor guidelines, participant materials and CD-ROMs ensure the flexibility of future delivery options.

Conclusions and Recommendations

Based on the results of this evaluation, the following conclusions and recommendations concerning stated grant goals are offered.

There is strong evidence showing:

- the design, development, and implementation of innovative workplace literacy programs that are tailored to the skills and cultural background of the participants through:

  -conducting a comprehensive pre-design analysis of jobs, employees, and organizations to gather data requisite to the design of effective literacy training;

  -collaboratively designing and developing workplace literacy programs that are responsive to the unique needs of the organizations, jobs, and employees;

  -designing resource-rich classrooms that support traditional and technology-based instruction;

  -recruiting participants, implementing the site-specific programs, and providing for reinforcement and transfer of training to the workplace.

- Dissemination of the program and program products; and,

- Promotion of program institutionalization and diffusion.

There is a moderate amount of evidence indicating:

- Conduction of program evaluation and program impact research; and,

- Dissemination of research findings.

Recommendations:

1. Identify individual activities or responses that directly correlate with each learning objective or competency for each course. Use these to create performance-based or written items to develop parallel versions of a testing instrument to measure levels of skill attainment resulting from training.

2. Develop performance indicators, from supervisor and worker input, for each critical job task addressed by the training courses. Use these indicators to benchmark pre-training levels of performance and to measure post-training levels of performance of participants. Use this information to determine the amount of impact of training on job performance and to set performance standards for appraisals. If monetary values are assigned to performance indicators, and measures established a traditional ROI formula can be used to calculate cost benefits or percentages of cost benefits. Also use performance indicator information to modify course content to include more contextual examples of skill usage, and to update courses over time, as needed, and to determine team, department, and/or partnering organization future training needs.

Concluding Statement: After working with this project for only one month to review data and documentation of activities, it is the opinion of this evaluator that this has been one of the better U.S Department of Education Workplace Literacy demonstration projects funded to date. This conclusion is based on abundant evidence showing: 1.), the vast amount of high quality, customized training materials that the WSU staff produced throughout the demonstration period; 2.), the ability of the Project ALERT staff and representatives of its partners to accomplish project tasks and solve problems through tenacity, innovation, unflagging high energy levels, and constant attention to detail; and,

3.), the pending diffusion of the project curricula and implementation model to other area efforts. These ingredients indicate success.

Appendices

Project Alert Demographics:
Age

	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Detroit Axle: Effective Communication on the Computer														
	1	1	0	0	0	0	0	1	1	0	0	1	2	1
Detroit Axle: Interpersonal Communication & Problem Solving														
	0	0	0	6	1	2	2	2	0	1	1	4	4	1
Detroit Axle: Math for Machine Operators														
	0	1	0	2	1	0	0	0	0	0	0	0	0	0
City Disposal: Commercial Driver's License Prep														
	0	0	0	1	2	0	1	1	1	0	0	0	0	0
City Disposal: Technology for the Workplace														
	0	0	0	0	0	0	0	2	0	3	0	2	2	0
City Disposal: Effective Communication														
	0	0	0	1	0	0	1	0	0	0	1	0	1	0
City Disposal: Effective Communication, Part II														
	0	0	0	0	0	0	0	0	0	0	0	0	1	0
City Disposal: Interpersonal Communication and Problem Solving														
	0	0	0	0	0	0	0	0	2	0	0	0	0	0
Davis Tool: Apprenticeship Prep														
	1	0	4	4	1	0	1	1	2	1	3	4	4	3
Davis Tool: SPC Prep														
	0	0	0	0	0	0	0	0	1	0	1	1	3	1
Totals	**2**	**2**	**4**	**14**	**5**	**2**	**5**	**7**	**7**	**5**	**6**	**12**	**17**	**6**
% (n =320)	**1%**	**1%**	**1%**	**4%**	**2%**	**1%**	**2%**	**2%**	**2%**	**2%**	**2%**	**4%**	**5%**	**2%**

Project Alert Demographics:
Age

	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Detroit Axle: Effective Communication on the Computer														
	1	1	0	4	8	1	2	3	1	6	2	6	3	4
Detroit Axle: Interpersonal Communication & Problem Solving														
	7	3	1	2	4	1	3	2	1	4	5	4	0	1
Detroit Axle: Math for Machine Operators														
	0	1	1	1	1	0	1	2	0	2	0	2	2	1
City Disposal: Commercial Driver's License Prep														
	0	1	2	2	2	0	1	0	0	0	1	0	2	0
City Disposal: Technology for the Workplace														
	2	1	0	0	1	0	1	0	0	1	0	0	1	1
City Disposal: Effective Communication														
	0	0	0	0	1	0	1	0	0	0	1	0	0	0
City Disposal: Effective Communication, Part II														
	0	0	0	0	1	0	1	0	0	0	1	0	0	0
City Disposal: Interpersonal Communication and Problem Solving														
	0	0	0	0	0	0	0	0	2	4	4	2	0	0
Davis Tool: Apprenticeship Prep														
	2	2	4	3	5	3	2	0	1	1	2	2	1	1
Davis Tool: SPC Prep														
	0	0	0	1	0	1	3	0	0	0	0	0	0	0
Totals	**12**	**9**	**8**	**13**	**23**	**6**	**15**	**7**	**5**	**18**	**16**	**16**	**9**	**8**
% (n =320)	**4%**	**3%**	**3%**	**4%**	**7%**	**2%**	**5%**	**2%**	**2%**	**6%**	**5%**	**5%**	**3%**	**3%**

Project Alert Demographics:
Age

	49	50	51	52	53	54	55	56	57	58	59	60	61	
Detroit Axle: Effective Communication on the Computer														
	3	4	4	5	4	4	1	0	1	0	1	1	0	
Detroit Axle: Interpersonal Communication & Problem Solving														
	4	3	3	1	1	1	1	1	2	0	1	0	0	
Detroit Axle: Math for Machine Operators														
	2	0	0	0	0	0	1	0	0	0	0	0	0	
City Disposal: Commercial Driver's License Prep														
	0	1	0	0	0	0	1	0	0	0	0	0	0	
City Disposal: Technology for the Workplace														
	0	0	0	0	0	0	0	0	0	0	0	0	0	
City Disposal: Effective Communication														
	0	0	1	0	0	1	0	1	0	0	0	1	0	
City Disposal: Effective Communication, Part II														
	0	0	0	0	0	1	0	0	0	0	1	0	0	
City Disposal: Interpersonal Communication and Problem Solving														
	0	0	0	0	0	0	0	0	0	0	0	0	0	
Davis Tool: Apprenticeship Prep														
	0	0	0	0	0	0	1	1	0	0	0	0	0	
Davis Tool: SPC Prep														
	0	0	0	1	0	0	0	0	1	0	0	0	0	
Totals	**9**	**8**	**8**	**7**	**5**	**7**	**5**	**3**	**4**	**0**	**3**	**2**	**0**	
% (n =320)	**3%**	**3%**	**3%**	**2%**	**2%**	**2%**	**2%**	**1%**	**1%**	**0%**	**1%**	**1%**	**0%**	

Project Alert Demographics:
Age

	n
Detroit Axle: Effective Communication on the Computer	
	78
Detroit Axle: Interpersonal Communication & Problem Solving	
	80
Detroit Axle: Math for Machine Operators	
	21
City Disposal: Commercial Driver's License Prep	
	19
City Disposal: Technology for the Workplace	
	17
City Disposal: Effective Communication	
	11
City Disposal: Effective Communication, Part II	
	6
City Disposal: Interpersonal Communication and Problem Solving	
	14
Davis Tool: Apprenticeship Prep	
	60
Davis Tool: SPC Prep	
	14
Totals	320
% (n =320)	

Project Alert Demographics:
Age

	21	22	23	24	25	26	27	28	29	30	31	32	33	34
20-29 yrs. old:														
Total n	48													
% of n	14.6%													
30-39 yrs. old:														
Total n	111													
% of n	33.7%													
40-49 yrs. old:														
Total n	109													
% of n	33.1%													
50-59 yrs. old:														
Total n	59													
% of n	17.9%													
60-69 yrs. old:														
Total n	2													
% of n	0.6%													

Project ALERT Demographics:
Ethnicity

	White	Black	Asian	Indian	Other			
Detroit Axle: Effective Communication on the Computer								
	14	59	1	1	5			
Detroit Axle: Interpersonal Communications and Problem Solving								
	16	62	0	2	4			
Detroit Axle: Math for the Machine Operator								
	3	15	1	0	3			
City Disposal: Commercial Driver's License Prep								
	3	16	0	0	0			
City Disposal: Technology for the Workplace								
	5	12	0	0	0			
City Disposal: Effective Communication								
	2	8	0	0	1			
City Disposal: Effective Communication, Part II								
	1	4	0	0	1			
City Disposal: Interpersonal Communications and Problem Solving								
	14	0	0	0	0			
Davis Tool: Apprenticeship Prep								
	42	15	1	1	2			
Davis Tool: SPC Prep								
	11	1	0	0	3			
TOTALS	**111**	**192**	**3**	**4**	**19**		**329**	**TOTAL n**
% of n (n = 329)	33.7%	58.4%	0.9%	1.2%	5.8%			

Project ALERT Demographics: Gender, Citizenship, First Language

	Male	Female		Born U	NOT US		Engl.	Non-Engl.			
Detroit Axle: Effective Communication on the Computer											
	63	17		73	7		79	1			
Detroit Axle: Interpersonal Communications and Problem Solving											
	58	26		81	3		83	1			
Detroit Axle: Math for the Machine Operator											
	19	3		19	3		21	1			
City Disposal: Commercial Driver's License Prep											
	14	5		18	1		19	0			
City Disposal: Technology for the Workplace											
	16	1		17	0		17	0			
City Disposal: Effective Communication											
	11	0		11	0		10	1			
City Disposal: Effective Communication, Part II											
	6	0		6	0		6	0			
City Disposal: Interpersonal Communications and Problem Solving											
	14	0		14	0		13	1			
Davis Tool: Apprenticeship Prep											
	55	6		53	8		55	6			
Davis Tool: SPC Prep											
	14	1		13	2		13	2			
TOTALS	**270**	**59**		**305**	**24**		**316**	**13**			**329**
											Total n
% of n (n = 329)	**82.1%**	**17.9%**		**92.7%**	**7.3%**		**96.0%**	**4.0%**			

Project ALERT Demographics:
Education Levels

	No Schl.	1-5 yrs.	6-8 yrs.	9 yrs.	10 yrs.	11 yrs.	12 yrs.	HS grad
Detroit Axle: Effective Communication on the Computer								
	1	2	0	5	4	2	62	49
Detroit Axle: Interpersonal Communications and Problem Solving								
	0	1	1	1	1	5	73	45
Detroit Axle: Math for the Machine Operator								
	0	1	0	0	0	1	17	12
City Disposal: Commercial Driver's License Prep								
	0	0	0	0	2	0	15	13
City Disposal: Technology for the Workplace								
	0	0	0	1	0	1	15	11
City Disposal: Effective Communication								
	0	1	1	0	3	0	6	6
City Disposal: Effective Communication, Part II								
	0	2	0	0	1	0	2	2
City Disposal: Interpersonal Communications and Problem Solving								
	0	0	0	0	0	0	14	6
Davis Tool: Apprenticeship Prep								
	2	2	4	5	2	6	37	41
Davis Tool: SPC Prep								
	0	0	0	2	1	0	10	8
TOTALS	**3**	**9**	**6**	**14**	**14**	**15**	**251**	**193**
% of n (n = 329)	**0.9%**	**2.7%**	**1.8%**	**4.3%**	**4.3%**	**4.6%**	**76.3%**	**58.7%**

Project ALERT Demographics:
Education Levels

	GED	some coll	coll dgr	trade sch
Detroit Axle: Effective Communication on the Computer				
	10	21	5	8
Detroit Axle: Interpersonal Communications and Problem Solving				
	9	40	7	22
Detroit Axle: Math for the Machine Operator				
	2	8	22	4
City Disposal: Commercial Driver's License Prep				
	2	4	3	5
City Disposal: Technology for the Workplace				
	4	4	0	1
City Disposal: Effective Communication				
	0	1	0	1
City Disposal: Effective Communication, Part II				
	0	1	0	1
City Disposal: Interpersonal Communications and Problem Solving				
	3	2	10	0
Davis Tool: Apprenticeship Prep				
	10	15	0	14
Davis Tool: SPC Prep				
	2	3	1	2
TOTALS	**42**	**99**	**48**	**58**
% of n (n = 329)	**12.8%**	**30.1%**	**14.6%**	**17.6%**

Project ALERT
Participation and Completion Rates

Project Course #	Site	Course Name	# enrolled	# completed	% completed
20801	Axle	EffecCom. on Comp.	6	8	133%
20802	Axle	EffecCom. on Comp	8	6	75%
20803	Axle	EffecCom. on Comp.	6	4	67%
20804	Axle	EffecCom. on Comp.	9	5	56%
20805	Axle	EffecCom. on Comp.	8	7	88%
20806	Axle	EffecCom. on Comp	8	8	100%
20807	Axle	EffecCom. on Comp	9	10	111%
20808	Axle	EffecCom. on Comp	9	8	89%
20809	Axle	EffecCom. on Comp	8	8	100%
20810	Axle	EffecCom. on Comp	7	8	114%
20811	Axle	EffecCom. on Comp	6	6	100%
20812	Axle	EffecCom. on Comp	7	7	100%
20813	Axle	EffecCom. on Comp	4	5	125%
20814	Axle	EffecCom. on Comp	9	9	100%
Subtotal			**104**	**99**	**95%**
20901	Axle	IPC/PrbSolv	13	10	77%
20902	Axle	IPC/PrbSolv	9	8	89%
20903	Axle	IPC/PrbSolv	9	7	78%
20904	Axle	IPC/PrbSolv	13	10	77%
20905	Axle	IPC/PrbSolv	10	8	80%
20906	Axle	IPC/PrbSolv	10	7	70%
20907	Axle	IPC/PrbSolv	12	12	100%
20908	Axle	IPC/PrbSolv	12	11	92%
20909	Axle	IPC/PrbSolv	12	9	75%
20910	Axle	IPC/PrbSolv	9	13	144%
20911	Axle	IPC/PrbSolv	8	8	100%
20912	Axle	IPC/PrbSolv	9	6	67%
20913	Axle	IPC/PrbSolv	16	12	75%
20914	Axle	IPC/PrbSolv	14	13	93%
Subtotal			**156**	**134**	**86%**
21001	Axle	Pre-CNC	7	6	86%
21002	Axle	Pre-CNC	11	7	64%
21003	Axle	Pre-CNC	9	8	89%
21004	Axle	Pre CNC	10	11	110%
21005	Axle	Pre CNC	6	6	100%
21006	Axle	Pre CNC	9	10	111%
21007	Axle	Pre CNC	8	4	50%
21008	Axle	Pre CNC	10	8	80%
21009	Axle	Pre CNC	9	7	78%
Subtotal			**79**	**67**	**85%**
20815 (8 Wks)	Axle	Eff.Com Computer	8	7	88%
20816 (8 Wks)	Axle	Eff.Com Computer	7	2	29%
20817 (8 Wks)	Axle	Eff. Com Computer	9	3	33%
Subtotal			**24**	**12**	**50%**
Total for Axle Employees			**363**	**312**	**86%**

Project ALERT
Participation and Completion Rates

Project Course #	Site	Course Name	# enrolled	# completed	% completed
30401	City	CDL-Prep	4	3	75%
30402 (Municipal)	City	CDL-Prep	5	2	40%
30403	City	CDL-Prep	3	1	33%
30404	City	CDL-Prep	5	4	80%
30405	City	CDL-Prep	4	4	100%
30406	City	CDL-Prep	4	3	75%
30407	City	CDL-Prep	3	2	67%
30408	City	CDL-Prep	9	1	11%
Subtotal			**37**	**20**	**54%**
30501	City	Pre-Mobile Tech	5	5	100%
30502	City	Pre-Mobile Tech	4	4	100%
30503	City	Pre-Mobile Tech	5	5	100%
30504	City	Pre-Mobile Tech	10	7	70%
30505	City	Pre-Mobile Tech	8	6	75%
30507	City	Pre-Mobile Tech	8	4	50%
30508	City	Pre-Mobile Tech	6	6	100%
Subtotal			**46**	**37**	**80%**
30601	City	Effective Comm	7	7	100%
30602	City	Effective Comm	6	1	17%
30701	City	Effective Comm	6	3	50%
Subtotal			**19**	**11**	**58%**
30901	City	Interpersonal Com.	11	10	91%
30902	City	Interpersonal Com.	11	8	73%
31401	City	Number at Work	6	3	50%
31402	City	Number at Work	3	1	33%
Subtotal			**31**	**22**	**71%**
Total for City Employees			**133**	**90**	**68%**

Project ALERT
Participation and Completion Rates

Project Course #	Site	Course Name	# enrolled	# completed	% completed
10101	Davis	DAT- Prep	23	22	96%
10102	Davis	DAT- Prep	24	4	17%
10103	Davis	DAT- Prep	18	13	72%
Subtotal			**65**	**39**	**60%**
10201	Davis	SPC-Prep 1	7	9	129%
10202	Davis	SPC-Prep 1	8	8	100%
10301	Davis	SPC-Prep 2	8	7	88%
10302	Davis	SPC-Prep 2	7	7	100%
Subtotal			**30**	**31**	**103%**
10901	Davis	Interpersonal Com.	13	10	77%
10902	Davis	Interpersonal Com.	15	16	107%
10903	Davis	Interpersonal Com.	11	1	9%
10904	Davis	Interpersonal Com.	11	1	9%
10905	Davis	Interpersonal Com.	14	1	7%
Subtotal			**64**	**29**	**45%**
Total for Davis Employees			**159**	**99**	**62%**

Project ALERT
Participation and Completion Rates

Project Course #	Site	Course Name	# enrolled	# completed	% completed
40901	WC	IPC/PrbSolv	13	8	62%
41101	WC	Writing Imp(WC)	7	2	29%
41201	WC	Ess. Of QC	3	3	100%
41301	WC	Rdg.Comp (Mercy)	17	12	71%
Total for Wayne Center			**40**	**25**	**63%**

Course Name	Field	Participant ID	Reading/Better	Listening/Better	Doing Math/Better	Speaking in public/Better
EC on Computer	On the Job	506	3	5	3	5
EC on Computer	On the Job	507	3	3	1	3
EC on Computer	On the Job	508	4	5	3	3
EC on Computer	On the Job	514	4	4	3	2
EC on Computer	On the Job	523	4	4	5	4
EC on Computer	On the Job	527	3	4	2	4
EC on Computer	On the Job	528	3	4	5	3
EC on Computer	On the Job	533	4	4	4	4
EC on Computer	On the Job	534	4	4	4	3
EC on Computer	On the Job	537	3	4	3	3
EC on Computer	On the Job	539	4	5	2	4
EC on Computer	On the Job	540	1	2	1	1
EC on Computer	On the Job	545	4	3	4	5
EC on Computer	On the Job	551	3	5	2	1
EC on Computer	On the Job	552	5	4	3	5
EC on Computer	On the Job	554	3	4		3
EC on Computer	On the Job	555	4	3	4	3
EC on Computer	On the Job	558	2	5	3	2
EC on Computer	On the Job	562	4	5	5	3
EC on Computer	On the Job	564	4	4	4	
EC on Computer	On the Job	568	5	5	3	4
IPC and Computers	On the Job	511	5	3	4	5
IPC and Problem	On the Job	502	3	4	3	5
IPC and Problem	On the Job	503	5	5	3	5
IPC and Problem	On the Job	505	5	5	3	5
IPC and Problem	On the Job	510		4		4
IPC and Problem	On the Job	516	4	5	2	
IPC and Problem	On the Job	517	4	5	5	4
IPC and Problem	On the Job	520	3	3	2	3
IPC and Problem	On the Job	521	4	4	5	4
IPC and Problem	On the Job	584	4	5	3	5
IPC and Problem	On the Job	589	5	4	5	3
IPC and Problem	On the Job	594	4	5	4	5
IPC and Problem	On the Job	598	3	4	2	3
IPC and Problem	On the Job	603	5	5	5	5
IPC and Problem	On the Job	606		4		4
IPC and Problem	On the Job	607	2	4	3	
IPC and Problem	On the Job	608	3	4	3	3
IPC and Problem	On the Job	611		4		1
IPC and Problem	On the Job	612		4		3
IPC and Problem	On the Job	616	4	4	4	4
IPC and Problem	On the Job	625	4	4	4	1
Pre CNC Math for	On the Job	542	1	1	1	1
Pre CNC Math for	On the Job	557	3	3	4	3
Pre CNC Math for	On the Job	575	3	4	4	3
Pre CNC Math for	On the Job	576	4	4	3	3
Pre CNC Math for	On the Job	577	5	4	4	3
Pre CNC Math for	On the Job	578	3	4	4	4
Pre CNC Math for	On the Job	580	5	5	5	3
Pre CNC Math for	On the Job	581	2	2	3	1
Pre CNC Math for	On the Job	587	5	4	3	2
Average Ratings:			**3.4**	**4.1**	**3.1**	**3.2**
5= Highest						
1= Lowest						

Course Name	Speaking in private/Better	Taking tests/Better	Understanding Words/Better	Solving Problems/Better	Following directions/Better	Understanding responsibilities/ Better	Express your ideas/Better
EC on Computer	5	4	4	4	5	5	4
EC on Computer	4	2	3	3	3	4	4
EC on Computer	4	4	4	4	4	4	5
EC on Computer	3	3	4	3	4	5	2
EC on Computer	4	4	4	4	4	5	4
EC on Computer	3	2	2	2	3	3	4
EC on Computer	3	3	4	4	3	4	4
EC on Computer	4	3	4	4	4	4	4
EC on Computer	4	3	4	3	5	5	5
EC on Computer	4	3	3	4	4	4	3
EC on Computer	2	1	4	3	5	5	3
EC on Computer	1	1	1	1	1	1	1
EC on Computer	5	4	4	5	5	5	4
EC on Computer	2	2	4	2	4	4	2
EC on Computer	5	3	5	4	5	5	5
EC on Computer	4	4	4	4	4	4	4
EC on Computer	4	3	4	3	4	4	4
EC on Computer	3	3	4	4	4	5	5
EC on Computer	5	2	4	3	5	5	3
EC on Computer	4	4	5	3	4	4	3
EC on Computer	2	2	3	2	1	1	3
IPC and Computers	3	3	4	5	4	4	3
IPC and Problem	5	4	5	5	5	5	5
IPC and Problem	4	3	4	4	5	4	5
IPC and Problem	5	3	5	5	5	5	5
IPC and Problem	4	3	4	4	4	5	5
IPC and Problem	3	2	3	5	5	5	4
IPC and Problem	5	4	4	4	4	4	4
IPC and Problem	3	3	3	3	4	4	4
IPC and Problem	4	3	4	4	4	5	3
IPC and Problem	2	4	4	3	4	5	4
IPC and Problem	4	3	4	5	5	5	5
IPC and Problem	4	5	4	4	5	5	4
IPC and Problem	3	2	3	3	3	4	3
IPC and Problem	5	5	5	5	5	5	5
IPC and Problem	4	4		4	4	4	4
IPC and Problem	4		3	3	3	2	3
IPC and Problem	3	3	3	4	5	5	4
IPC and Problem	4			4		3	
IPC and Problem	4			4	4	3	3
IPC and Problem	4	4	4	4	4	4	4
IPC and Problem	1	2	5	4	5	5	5
Pre CNC Math for	1	1	1	1	1	1	1
Pre CNC Math for	3	4	2	4	3	3	3
Pre CNC Math for	4	3	3	4	5	5	4
Pre CNC Math for	4	3	4	4	4	3	4
Pre CNC Math for	4	4	3	3	4	4	3
Pre CNC Math for	4	4	4	4	4	4	4
Pre CNC Math for	4	3	5	5	5	5	5
Pre CNC Math for	1	1	2	2	2	3	4
Pre CNC Math for	4	2	4	3	4	5	5
Average Ratings:	**3.6**	**2.9**	**3.5**	**3.7**	**4.0**	**4.2**	**3.8**
5= Highest							
1= Lowest							

Course Name	Using a Computer/Better	Reading/More Confident	Listening/More Cdonfident	Doing Math/More Confident	Speaking in public/More Confident	Speaking in Private/More Confident
EC on Computer	3	4	5	4	5	5
EC on Computer	5	3	3	1	3	4
EC on Computer	3	4	3	4	3	4
EC on Computer	3	3	5	3	3	2
EC on Computer	4	4	4	5	4	5
EC on Computer	2	3	4	2	3	4
EC on Computer	3	3	4	5	3	3
EC on Computer	4	4	4	4	4	4
EC on Computer		5	5	4	4	4
EC on Computer	3	4	4	4	3	4
EC on Computer	1	5	5	2	4	2
EC on Computer	1	1	3	1	3	2
EC on Computer	4	5	5	5	5	5
EC on Computer	3	5	5	3	2	2
EC on Computer	5	5	4	3	5	5
EC on Computer	4	3	4		3	3
EC on Computer	3	4	3	4	3	4
EC on Computer	2	3	5	3	3	3
EC on Computer	3	4	5	4	2	5
EC on Computer		5	4	5		4
EC on Computer	5	3	3	4	4	2
IPC and Computers	5	4	3	3	5	3
IPC and Problem	3	4	5	4	5	5
IPC and Problem		4	3	3	5	5
IPC and Problem		5	5	3	5	5
IPC and Problem	2		4		4	4
IPC and Problem	1	4	5	3	2	3
IPC and Problem	4	4	4	5	5	5
IPC and Problem	2	3	3	3	3	3
IPC and Problem	4	4	4	5	4	4
IPC and Problem		4	5	4	3	5
IPC and Problem	2	5	4	5	2	4
IPC and Problem	2	5	5	5	5	5
IPC and Problem	2	3	3	2	3	3
IPC and Problem		5	5	5	5	5
IPC and Problem			4		4	4
IPC and Problem		3	4	3		4
IPC and Problem	2	3	4	3	3	3
IPC and Problem			5			
IPC and Problem			4		3	5
IPC and Problem	4	4	4	4	4	4
IPC and Problem	1	5	4	4	1	1
Pre CNC Math for	1	1	1	1	1	1
Pre CNC Math for	5	3	3	4	3	3
Pre CNC Math for	2	4	5	4	3	5
Pre CNC Math for	3	5	4	3	3	4
Pre CNC Math for	4	5	4	3	3	4
Pre CNC Math for	4	3	4	4	4	4
Pre CNC Math for	3	5	5	3	5	5
Pre CNC Math for	4	2	2	3	1	1
Pre CNC Math for	2	5	4	3	1	4
Average Ratings:	**2.5**	**3.6**	**4.1**	**3.2**	**3.3**	**3.7**
5= Highest						
1= Lowest						

Course Name	Taking testsMore Confident	Understanding Words/More Confident	Solving Problems/More Cdonfident	Following Directions/More Confident	Understanding responsibilities/More Confident	Expressing your ideas/More Confident
EC on Computer	4	4	4	5	5	5
EC on Computer	2	3	3	2	4	3
EC on Computer	4	4	4	4	4	5
EC on Computer	3	5	5	5	5	4
EC on Computer	4	4	4	4	5	4
EC on Computer	2	2	3	3	4	4
EC on Computer	3	4	4	3	4	4
EC on Computer		4	4	4	4	4
EC on Computer	3	4	3	5	5	5
EC on Computer	3	3	4	4	4	3
EC on Computer	1	4	4	5	5	3
EC on Computer	1	1	1	1	1	1
EC on Computer	4	5	5	5	5	5
EC on Computer	2	4	4	4	4	
EC on Computer	3	5	4	5	5	5
EC on Computer		4	4	4	4	4
EC on Computer	3	4	3	4	4	4
EC on Computer	2	5	4	5	5	5
EC on Computer	2	4	3	5	5	4
EC on Computer	4	5	4	4	5	3
EC on Computer	2	3	1	1	1	3
IPC and Computers	3	4	5	3	4	4
IPC and Problem	4	5	5	5	5	5
IPC and Problem	3	4	4	5	4	5
IPC and Problem	3	5	5	5	5	5
IPC and Problem	3	4	4	4	5	5
IPC and Problem	2	3	5	5	5	4
IPC and Problem	4	4	4	4	4	4
IPC and Problem	3	3	3	4	4	4
IPC and Problem	3	4	4	4	5	3
IPC and Problem	4	5	5	5	4	3
IPC and Problem	2	4	5	5	5	5
IPC and Problem	5	5	4	5	5	3
IPC and Problem	2	3	3	4	3	3
IPC and Problem	5	5	5	5	5	5
IPC and Problem	4		4	4	4	4
IPC and Problem		3	3	3	4	3
IPC and Problem	1	2	4	4	4	4
IPC and Problem			5			
IPC and Problem			5	3	3	4
IPC and Problem	4	4	4	4	4	4
IPC and Problem	3	4	5	5	5	5
Pre CNC Math for	1	1	1	1	1	1
Pre CNC Math for	4	2	4	3	3	3
Pre CNC Math for	3	4	4	5	5	5
Pre CNC Math for	3	4	4	3	4	4
Pre CNC Math for	4	3	3	4	4	3
Pre CNC Math for	4	4	4	4	4	4
Pre CNC Math for	5	5	5	5	5	
Pre CNC Math for	1	2	2	2	3	4
Pre CNC Math for		4	2	3	5	4
Average Ratings:	**2.7**	**3.6**	**3.9**	**4.0**	**4.2**	**3.8**
5= Highest						
1= Lowest						

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Course Name	Using a Computer/More Confident	Used information on job	Used information	Shared information	Career goals	Education Goals	Taken responsibilities
EC on Computer	3	5	5	5	4	5	3
EC on Computer	2	5	5	4	5	4	5
EC on Computer	3	3	3	4			4
EC on Computer		3	2	3	3		3
EC on Computer	4	3	4	5	3	3	4
EC on Computer	2	3	3	3	4	2	4
EC on Computer	3	3	4	3	3	3	4
EC on Computer	4	5	4	5	4	3	5
EC on Computer	3		4	5		3	
EC on Computer	3	4	2	2	2	1	5
EC on Computer	3	1	2	2	1	1	1
EC on Computer	3	1	1	3	1	1	1
EC on Computer	5	4	4	4	1	1	3
EC on Computer	2	3	2	2	2		5
EC on Computer	5	2	5	5	3	4	2
EC on Computer	4	3	3	4	1	2	3
EC on Computer	1	2	2	3	1	1	1
EC on Computer	1	3	4	5	1	2	5
EC on Computer	2	3	4	4	3	2	5
EC on Computer	5	2	4		1	1	1
EC on Computer	5	2	2	4	3	3	2
IPC and Computers	5	5	3	4	3	5	5
IPC and Problem	3	2	3	3	3	4	1
IPC and Problem		4	3	4	5	3	2
IPC and Problem		2	5	4	3	5	1
IPC and Problem	2	4	5	3		3	2
IPC and Problem	1	5	5	4		5	4
IPC and Problem	3	4	5	4	3	3	3
IPC and Problem	2	5	5	3	3	3	5
IPC and Problem	4	4	4	4	2	2	4
IPC and Problem	2	4	4	4	4	5	4
IPC and Problem	2	4	5	4	5	4	3
IPC and Problem		4	4	3	5	5	4
IPC and Problem	2	3	3	3	2	3	2
IPC and Problem		5	5	5	5	5	
IPC and Problem		5	4	4	1	3	3
IPC and Problem		3	3	3	4	4	1
IPC and Problem	1	5	4	5	3	2	5
IPC and Problem		5	5	5	3	3	2
IPC and Problem		3	4	4	1	3	3
IPC and Problem	3	5	5	5	3	3	5
IPC and Problem	1	4	4	3	5	5	5
Pre CNC Math for	1	1	1	1	1	1	1
Pre CNC Math for	5	2	3	2	3	3	2
Pre CNC Math for	2	3	3	4		4	3
Pre CNC Math for	3	3	3	2	3	3	3
Pre CNC Math for	4	3	4	3	3	3	3
Pre CNC Math for	4						
Pre CNC Math for	3	4	4	4	4		5
Pre CNC Math for	4	2	2	1	1	1	1
Pre CNC Math for		3	2	3	3	2	3
Average Ratings:	**2.4**	**3.3**	**3.6**	**3.5**	**2.5**	**2.7**	**3.0**
5= Highest							
1= Lowest							

Course Name	Better job	Satisfied with the job	Better Worker	Rate Course
EC on Computer	5	4	5	
EC on Computer	3	5	5	5
EC on Computer	3	4	5	5
EC on Computer	5	3	5	
EC on Computer	3	5	5	
EC on Computer	2	3	4	4
EC on Computer	3	3	3	5
EC on Computer	4	5	5	
EC on Computer	3	3		
EC on Computer	1	5	4	5
EC on Computer	1	1	1	4
EC on Computer	1	1	1	4
EC on Computer	1	3	3	4
EC on Computer				4
EC on Computer	1	3	5	5
EC on Computer	2	3	4	4
EC on Computer	1	2	3	4
EC on Computer	3	4	4	5
EC on Computer	5	5	5	4
EC on Computer	3	3	3	5
EC on Computer	3	2	4	4
IPC and Computers	5	5	4	
IPC and Problem		2	5	5
IPC and Problem	5	5	5	
IPC and Problem	3	1	1	5
IPC and Problem	3	3	5	4
IPC and Problem	4	4	5	4
IPC and Problem	3	5	5	5
IPC and Problem	3	3	5	5
IPC and Problem	3	3	4	4
IPC and Problem	4	5	4	
IPC and Problem	5	3	5	5
IPC and Problem	5	4	4	5
IPC and Problem	3	3	2	3
IPC and Problem	5	4	5	5
IPC and Problem	3	4	4	4
IPC and Problem	4	2	3	4
IPC and Problem	5	5	5	4
IPC and Problem	3	2	3	
IPC and Problem	2	3	3	5
IPC and Problem	2	3	5	5
IPC and Problem	5	4	3	4
Pre CNC Math for	1	1	1	3
Pre CNC Math for	3	3	4	4
Pre CNC Math for	3	2	3	4
Pre CNC Math for	3	3	3	4
Pre CNC Math for	3	4	4	
Pre CNC Math for				3
Pre CNC Math for	5	5	5	5
Pre CNC Math for	1	1	1	3
Pre CNC Math for	3	5	3	4
Average Ratings:	**3.0**	**3.3**	**3.7**	**3.5**
5= Highest				
1= Lowest				

Course Name	Recommend	Position changed	Interested in another Class	Interviewed about course	
EC on Computer	Yes	No	Yes	Yes	
EC on Computer	Yes	Yes	Yes	Yes	
EC on Computer	Yes	Yes	Yes		
EC on Computer	Yes	No	No		
EC on Computer	Yes	No	Yes		
EC on Computer	Yes	No	Yes	Yes	
EC on Computer	Yes	Yes	Yes	No	
EC on Computer	Yes	Yes	Yes	Yes	
EC on Computer	Yes	Yes	Yes	No	
EC on Computer	Yes	Yes	No		
EC on Computer	Yes	Yes	Yes	No	
EC on Computer	Yes	Yes	Yes	Yes	
EC on Computer	Yes	No	Yes	Yes	
EC on Computer	Yes			No	
EC on Computer	Yes	No	Yes	Yes	
EC on Computer	Yes	No	Yes		
EC on Computer	Yes	No	Yes	No	
EC on Computer	Yes	No	Yes		
EC on Computer	Yes	No	Yes		
EC on Computer	Yes	No	Yes	Yes	
EC on Computer	Yes	No	Yes		
IPC and Computers	Yes	Yes	Yes		
IPC and Problem	Yes	Yes	Yes	Yes	
IPC and Problem	Yes	Yes	Yes	Yes	
IPC and Problem	Yes	No	Yes	Yes	
IPC and Problem	Yes	No	Yes	No	
IPC and Problem	Yes	No	Yes	Yes	
IPC and Problem	Yes	No	Yes	Yes	
IPC and Problem	Yes	No	Yes		
IPC and Problem	Yes	No	Yes	Yes	
IPC and Problem	Yes	Yes	Yes	Yes	
IPC and Problem	Yes	No	No	No	
IPC and Problem	Yes	No	Yes	Yes	
IPC and Problem	Yes	No	No	No	
IPC and Problem	Yes	No	Yes		
IPC and Problem	Yes	No	Yes		
IPC and Problem	Yes	No	Yes		
IPC and Problem	Yes	No	Yes	Yes	
IPC and Problem	Yes	Yes	No	Yes	
IPC and Problem	Yes	No	Yes	Yes	
IPC and Problem	Yes	No	Yes	No	
IPC and Problem	Yes	Yes	Yes	Yes	
Pre CNC Math for	No	No	No	Yes	
Pre CNC Math for	Yes	No	Yes	No	
Pre CNC Math for	Yes	No	Yes	Yes	
Pre CNC Math for	Yes	No	Yes	No	
Pre CNC Math for	No	Yes	No	No	
Pre CNC Math for	Yes	No	No	No	
Pre CNC Math for	Yes	Yes	Yes	No	
Pre CNC Math for	No	Yes	Yes	No	
Pre CNC Math for	Yes	No	Yes	Yes	
Average Ratings:	**48**	**17**	**42**	**23**	**Yes respons.**
5= Highest	**3**	**33**	**8**	**15**	**No respons.**
1= Lowest	**51**	**50**	**50**	**38**	**Total respon**
	94%	**34%**	**84%**	**61%**	**% Yes resp.**

Course Name	Field	Participant ID	Reading/Better	Listening/Better	Doing Math/Better	Speaking in public/Better
Course Name	Field	Participant ID	Reading/Better	Listening/Better	Doing Math/Better	Speaking in public/Better
EC on Computer	In Everyday Life	506	5	5	5	5
EC on Computer	In Everyday Life	507	4	3	3	3
EC on Computer	In Everyday Life	508	4	3	4	3
EC on Computer	In Everyday Life	514	3	5	3	2
EC on Computer	In Everyday Life	521	4	4	5	4
EC on Computer	In Everyday Life	523	4	4	5	4
EC on Computer	In Everyday Life	527	3	3	2	3
EC on Computer	In Everyday Life	528	3	4	4	4
EC on Computer	In Everyday Life	533	5	4	5	4
EC on Computer	In Everyday Life	534		5		
EC on Computer	In Everyday Life	537	4	5	4	3
EC on Computer	In Everyday Life	539	3	5	4	1
EC on Computer	In Everyday Life	540	1	1	1	1
EC on Computer	In Everyday Life	545	5	5	5	5
EC on Computer	In Everyday Life	551	3	5	2	1
EC on Computer	In Everyday Life	552	5	5	4	5
EC on Computer	In Everyday Life	554	4	4		3
EC on Computer	In Everyday Life	555	5	4	3	3
EC on Computer	In Everyday Life	558	4	5	3	2
EC on Computer	In Everyday Life	562	3	5	3	3
EC on Computer	In Everyday Life	564	4	4	5	
EC on Computer	In Everyday Life	568	4	3	2	2
IPC and Computers	In Everyday Life	511	4	3	4	5
IPC and Problem	In Everyday Life	502	2	4	1	5
IPC and Problem	In Everyday Life	503	4	5	3	5
IPC and Problem	In Everyday Life	505	5	4		5
IPC and Problem	In Everyday Life	510		5		4
IPC and Problem	In Everyday Life	516	4	5	4	3
IPC and Problem	In Everyday Life	517	4	4	5	5
IPC and Problem	In Everyday Life	520	3	3	2	3
IPC and Problem	In Everyday Life	584	4	4	3	4
IPC and Problem	In Everyday Life	589	5	4	5	3
IPC and Problem	In Everyday Life	594	4	5	3	5
IPC and Problem	In Everyday Life	598	3	3	2	3
IPC and Problem	In Everyday Life	603	5	5	5	5
IPC and Problem	In Everyday Life	606		4		3
IPC and Problem	In Everyday Life	607	4	3		
IPC and Problem	In Everyday Life	608	4	4	5	5
IPC and Problem	In Everyday Life	611		4		
IPC and Problem	In Everyday Life	612		4		2
IPC and Problem	In Everyday Life	616	4	4	4	4
IPC and Problem	In Everyday Life	625	4	4	1	1
Pre CNC Math for	In Everyday Life	542	1	1	1	1
Pre CNC Math for	In Everyday Life	557	3	3	4	3
Pre CNC Math for	In Everyday Life	575	4	5	4	3
Pre CNC Math for	In Everyday Life	576	5	4	4	4
Pre CNC Math for	In Everyday Life	577	5	5	4	4
Pre CNC Math for	In Everyday Life	578	4	4	4	4
Pre CNC Math for	In Everyday Life	580	5	5	5	3
Pre CNC Math for	In Everyday Life	581	2	2	3	1
Pre CNC Math for	In Everyday Life	587	5	4	3	2
Average Ratings:			**3.54**	**4.1**	**3.02**	**3.12**
5= Highest						
1= Lowest						

Course Name	Speaking in private/Better	Taking tests/Better	Understanding Words/Better	Solving Problems/Better	Following directions/Better	Understanding responsibilities/ Better	Express your ideas/Better
Course Name	Speaking in private/Better	Taking tests/Better	Understanding Words/Better	Solving Problems/Better	Following directions/Better	Understanding responsibilities/ Better	Express your ideas/Better
EC on Computer	5	5	5	5	5	5	5
EC on Computer	4	2	3	4	5	4	4
EC on Computer	4	4		5	4	5	3
EC on Computer	5	3	3	2	3	3	
EC on Computer	4	3	4	4	4	4	4
EC on Computer	5	4	4	4	5	4	4
EC on Computer	4	2	3	3	4	4	2
EC on Computer	4	4	3	3	4	4	4
EC on Computer	4		4	4	5	4	4
EC on Computer		3		3	5	4	4
EC on Computer	3	3	3	4	4	4	3
EC on Computer	3	1	5	3	2	2	1
EC on Computer	1	1	1	1	2	1	1
EC on Computer	5	4	4	5	5	5	5
EC on Computer			4	2	3	2	3
EC on Computer	5	4	5	4	5	5	5
EC on Computer	4	4	4	4	4	4	4
EC on Computer	4	4	4	1	4	3	2
EC on Computer	3	3	4	4	5	5	2
EC on Computer	5	2	4	3	5	3	3
EC on Computer	4	5	5	3	4	4	
EC on Computer	3	1	2	2	3	4	4
IPC and Computers	4	4	3	5	5	4	5
IPC and Problem	5	3	5	5	5	5	2
IPC and Problem	5	3	5	4	5	4	
IPC and Problem	5	5	5	5	5	5	
IPC and Problem	4	4	4	4	4	5	2
IPC and Problem	4	3	3	5	5	4	1
IPC and Problem	5	4	4	4	4	4	4
IPC and Problem	3	3	3	3	3	3	1
IPC and Problem	4	5	4	3	5	4	2
IPC and Problem	4	3	4	4	5	5	2
IPC and Problem	4	5	4	4	3	4	3
IPC and Problem	4	2	3	3	3	4	2
IPC and Problem	5	5	5	5	5	5	
IPC and Problem	4	3		4	4	4	
IPC and Problem	4		3	4	4	4	
IPC and Problem	5	5	4	4	5	5	2
IPC and Problem	4			4	4		
IPC and Problem	2			3	3	4	
IPC and Problem	4	4	4	4	5	5	4
IPC and Problem	3	4	5	5	5	5	1
Pre CNC Math for	1	1	1	1	1	1	1
Pre CNC Math for	3	4	3	4	4	3	5
Pre CNC Math for	4	3	3	3	4	4	3
Pre CNC Math for	4	4	5	5	4	4	3
Pre CNC Math for	4	4	4	4	3	3	4
Pre CNC Math for	4	4	4	4	4	4	4
Pre CNC Math for	5	5	5	5	5	5	3
Pre CNC Math for	1	2	2	1	3	1	4
Pre CNC Math for		2	4	3	4	4	2
Average Ratings:	**3.74**	**3.12**	**3.46**	**3.7**	**4.18**	**3.9**	**2.54**
5= Highest							
1= Lowest							

Course Name	Using a Computer/Better	Reading/More Confident	Listening/More Cdonfident	Doing Math/More Confident	Speaking in public/More Confident	Speaking in Private/More Confident
Course Name	Using a Computer/Better	Reading/More Confident	Listening/More Cdonfident	Doing Math/More Confident	Speaking in public/More Confident	Speaking in Private/More Confident
EC on Computer	5	5	5	5	5	5
EC on Computer	3	3	3	3	3	4
EC on Computer	4			4	4	4
EC on Computer	2	2	2	3		3
EC on Computer	4	4	4	5	4	4
EC on Computer	5	4	4	5	4	5
EC on Computer	3	3	4	3	3	4
EC on Computer	3	3	4	4	4	4
EC on Computer	5	5	4	5	4	4
EC on Computer	4	5	5	4	4	4
EC on Computer	4	4	5	4	4	
EC on Computer	1	5	5	2	4	3
EC on Computer	1	1	1	1	1	2
EC on Computer	4	5	5	5	5	5
EC on Computer		5	4	2	2	3
EC on Computer	4	5	5	4	5	5
EC on Computer	4	4	4		3	4
EC on Computer	5	5	4	3	3	4
EC on Computer	4	4	5	3	3	2
EC on Computer	5	4	5	3	2	5
EC on Computer	4	4	4	5		4
EC on Computer	3	3	3	2	2	3
IPC and Computers	3	4	3	3	5	3
IPC and Problem	5	4	4	3	5	5
IPC and Problem	5	4	5	3	5	5
IPC and Problem	4	5			5	5
IPC and Problem	5		5		4	4
IPC and Problem	5	4	5	4	3	4
IPC and Problem	5	4	5	5	5	5
IPC and Problem	3	3	3	2	3	3
IPC and Problem	3	4	4	5	4	4
IPC and Problem	4	5	4	5	3	4
IPC and Problem	5	4	5	4	5	5
IPC and Problem	3	3	3	2	3	3
IPC and Problem	5	5	5	5	5	5
IPC and Problem	4		4		3	4
IPC and Problem	4	4	3			4
IPC and Problem	4	3	4	3	3	3
IPC and Problem	4		4			4
IPC and Problem	3		5		2	5
IPC and Problem	4	4	4	4	4	4
IPC and Problem	4	4	4	1	1	3
Pre CNC Math for	1	1	1	1	1	1
Pre CNC Math for	3	3	3	4	3	3
Pre CNC Math for	4	4	5	5	3	4
Pre CNC Math for	4	5	5	4	4	4
Pre CNC Math for	3	5	5	4	4	4
Pre CNC Math for	4	4	4	4	4	4
Pre CNC Math for	4	5	5	3	5	5
Pre CNC Math for	2	2	2	3	1	1
Pre CNC Math for		4	4	3	4	2
Average Ratings:	**3.68**	**3.6**	**3.96**	**3.1**	**3.32**	**3.82**
5= Highest						
1= Lowest						

Course Name	Taking testsMore Confident	Understanding Words/More Confident	Solving Problems/More Cdonfident	Following Directions/More Confident	Understanding responsibilities/More Confident	Expressing your ideas/More Confident
Course Name	Taking testsMore Confident	Understanding Words/More Confident	Solving Problems/More Cdonfident	Following Directions/More Confident	Understanding your responsibilities/More Confident	Expressing your ideas/More Confident
EC on Computer	5	5	5	5	5	5
EC on Computer	2	3	3	4	4	1
EC on Computer	4		5	5	5	
EC on Computer	2	3	3	2	4	
EC on Computer	3	4	4	4	4	4
EC on Computer	4	4	4	5	5	4
EC on Computer	2	2	3	4	4	1
EC on Computer	4	3	3	4	4	4
EC on Computer		4	4	5	5	4
EC on Computer	3	4	3	5	4	4
EC on Computer		3	4	4		3
EC on Computer	1	5	3	2	3	3
EC on Computer	1	1	1	4	3	4
EC on Computer	4	5	5	5	5	5
EC on Computer	1	4	2	2	2	2
EC on Computer	4	5	4	5	5	5
EC on Computer	4	4	4	4	4	4
EC on Computer	4	4	1	4	3	2
EC on Computer	3	5	4	5	5	1
EC on Computer	2	4	3	4	4	3
EC on Computer	5	5	4	5	4	5
EC on Computer	2	4	3	4	4	5
IPC and Computers	4	3	5	5	4	5
IPC and Problem	2	5	5	5	5	2
IPC and Problem	3	5	4	5	4	
IPC and Problem	5	5	5	5	5	
IPC and Problem	4	4	4	4	5	2
IPC and Problem	3	3	5	5	4	1
IPC and Problem	5	4	4	5	5	3
IPC and Problem	3	3	3	3	3	2
IPC and Problem	3	4	4	4	5	3
IPC and Problem	3	4	4	5	5	2
IPC and Problem	5	4	4	3	4	3
IPC and Problem	2	3	3	3	3	2
IPC and Problem	5	5	5	5	5	
IPC and Problem	3		4	4	4	
IPC and Problem		3	4	4	4	
IPC and Problem	2	4	4	4	4	2
IPC and Problem			4	4		
IPC and Problem			4	3	4	
IPC and Problem	4	4	4	5	5	3
IPC and Problem	4	5	5	5	5	1
Pre CNC Math for	1	1	1	1	1	1
Pre CNC Math for	4	3	4	4	3	5
Pre CNC Math for	3	3	4	4	4	3
Pre CNC Math for	4	5	5	4	4	3
Pre CNC Math for	4	4	4	3	3	4
Pre CNC Math for	4	4	4	4	4	4
Pre CNC Math for	3	5	5	5	5	3
Pre CNC Math for	2	2	1	3	1	4
Pre CNC Math for		4	3	2	3	
Average Ratings:	**2.9**	**3.6**	**3.8**	**4.14**	**3.94**	**2.54**
5= Highest						
1= Lowest						

Course Name	Using a Computer/More Confident
Course Name	Using a Computer/More Confident
EC on Computer	5
EC on Computer	2
EC on Computer	4
EC on Computer	3
EC on Computer	4
EC on Computer	5
EC on Computer	3
EC on Computer	3
EC on Computer	5
EC on Computer	4
EC on Computer	4
EC on Computer	2
EC on Computer	4
EC on Computer	5
EC on Computer	
EC on Computer	4
EC on Computer	4
EC on Computer	5
EC on Computer	5
EC on Computer	5
EC on Computer	5
EC on Computer	4
IPC and Computers	3
IPC and Problem	5
IPC and Problem	5
IPC and Problem	4
IPC and Problem	5
IPC and Problem	5
IPC and Problem	5
IPC and Problem	3
IPC and Problem	2
IPC and Problem	4
IPC and Problem	5
IPC and Problem	3
IPC and Problem	5
IPC and Problem	4
IPC and Problem	4
IPC and Problem	4
IPC and Problem	4
IPC and Problem	4
IPC and Problem	4
IPC and Problem	4
Pre CNC Math for	1
Pre CNC Math for	3
Pre CNC Math for	4
Pre CNC Math for	4
Pre CNC Math for	3
Pre CNC Math for	4
Pre CNC Math for	4
Pre CNC Math for	2
Pre CNC Math for	
Average Ratings:	**3.84**
5= Highest	
1= Lowest	

Project ALERT 6 Month CITY Post-Survey Results

Course Name	Field	Participant ID	Reading/Better	Listening/Better	Doing Math/Better
CDL-Prep	On the Job	401	3	4	3
CDL-Prep	On the Job	402	4	4	4
CDL-Prep	On the Job	406	3	3	
CDL-Prep	On the Job	407			2
PMT	On the Job	421	3	4	2
PMT	On the Job	422	1	3	2
PMT	On the Job	423	3	5	
PMT	On the Job	425	4	5	3
PMT	On the Job	428	5	5	5
EC-1	On the Job	451	5	5	5
EC-1	On the Job	452	3	5	3
EC-1	On the Job	453	3	2	3
EC-1	On the Job	455	3	5	2
EC-1	On the Job	456	3	4	3
EC-1	On the Job	457	4	4	2
Average Ratings:			**3.13**	**3.87**	**2.60**
5= Highest					
1= Lowest					

Course Name	Speaking in public/Better	Speaking in private/Better	Taking tests/Better	Understanding Words/Better	Solving Problems/Better
CDL-Prep	4	4	3	4	4
CDL-Prep	3	2	5	3	3
CDL-Prep			3	3	3
CDL-Prep			3		3
PMT	1	3	2	3	4
PMT	1	3	3	2	4
PMT		3		3	
PMT	2	5	3	4	3
PMT	5	5	5	5	5
EC-1	5	5	5	5	5
EC-1		3		4	5
EC-1	1	3	3	3	3
EC-1	1	3	1	4	5
EC-1	4	4	2	4	4
EC-1	3	4	3	4	4
Average Ratings:	**2.00**	**3.13**	**2.73**	**3.40**	**3.67**
5= Highest					
1= Lowest					

Project ALERT 6 Month CITY Post-Survey Results

Course Name	Following directions/Better	Understanding responsibilities/ Better	Express your ideas/Better	Using a Computer/Better	Reading/More Confident
CDL-Prep	4	4	5	5	3
CDL-Prep	4	4	4	4	4
CDL-Prep	4	4	4	2	
CDL-Prep	4	3	3	5	
PMT	5	5	4	4	3
PMT	4	2	2	5	1
PMT	5	5	1	3	3
PMT	4	5	3	2	4
PMT	5	5	5	5	5
EC-1	5	5	5	4	
EC-1	1	4	2	1	3
EC-1	3	3	3	3	3
EC-1	4	5	4	1	3
EC-1	4	4	4	4	2
EC-1	3	4	3		4
Average Ratings:	**3.93**	**4.13**	**3.47**	**3.20**	**2.53**
5= Highest					
1= Lowest					

Project ALERT 6 Month CITY Post-Survey Results

Course Name	Listening/More Cdonfident	Doing Math/More Confident	Speaking in public/More Confident	Speaking in Private/More Confident	Taking testsMore Confident	Understanding Words/More Confident
CDL-Prep	4	3	4	4	3	4
CDL-Prep	4	4	3	2	5	3
CDL-Prep	1					
CDL-Prep						
PMT	4	3	2	3	2	4
PMT	2	2	1	2	1	3
PMT	5			3		3
PMT	5	3	2	5	3	4
PMT	5	5	5	5	5	5
EC-1						
EC-1	5	3		3		4
EC-1	3	3	1	3	3	3
EC-1	5	2	4	3	1	4
EC-1	4	2	4	4	1	4
EC-1	3		3	3		4
Average Ratings:	**3.33**	**2.00**	**1.93**	**2.67**	**1.60**	**3.00**
5= Highest						
1= Lowest						

Project ALERT 6 Month CITY Post-Survey Results

Course Name	Solving Problems/More Cdonfident	Following Directions/More Confident	Understanding your responsibilities/More Confident	Expressing your ideas/More Confident	Using a Computer/More Confident	Used information on job
CDL-Prep	4	4	4	5	5	5
CDL-Prep	3	4	4	4	3	2
CDL-Prep						
CDL-Prep					5	2
PMT	5	5	5	5	4	4
PMT	3	2	1	1	5	4
PMT	2	5	5	2		3
PMT	3	4	5	3	2	3
PMT	5	5	5	5	5	5
EC-1						5
EC-1	5	1	4	2	1	5
EC-1	3	3	3	3	3	2
EC-1	5	4	5	4	1	3
EC-1	4	4	5	4	2	4
EC-1	4	4	4	3		3
Average Ratings:	**3.07**	**3.00**	**3.33**	**2.73**	**2.40**	**3.33**
5= Highest						
1= Lowest						

Project ALERT 6 Month CITY Post-Survey Results

Course Name	Used information	Shared information	Career goals	Education Goals	Taken responsibilities	Better job	Satisfied with the job
CDL-Prep	5	5	5	5	3	5	4
CDL-Prep	3	4	3	5	1	3	
CDL-Prep		2			1	2	2
CDL-Prep	3	3	3	4	1	2	1
PMT	4	3	3	3	3	4	5
PMT	4	3	1	3	1	2	2
PMT	2	3	2	1	4		1
PMT	2	2	3	4	4	4	3
PMT	5	5	5	5	5	5	5
EC-1	5	3	3	3	3	3	3
EC-1	5	5	3	3	3	5	2
EC-1	3	2	3	3	2	2	2
EC-1	4	5	5	5	3	2	3
EC-1	4	4	2	3	2	2	2
EC-1	3	4	3	3	3	2	1
Average Ratings:	**3.47**	**3.53**	**2.93**	**3.33**	**2.60**	**2.87**	**2.40**
5= Highest							
1= Lowest							

Course Name	Better Worker	Rate Course	Recommend	Position changed	Interested in another Class	Interviewed about course	
CDL-Prep	5	5	Yes	Yes	Yes	Yes	
CDL-Prep		5	Yes	No	No	No	
CDL-Prep	2	4	Yes	No	No	Yes	
CDL-Prep	3	4	Yes	No	Yes	Yes	
PMT	5		Yes	No	No	No	
PMT	3	4	Yes	No	Yes	Yes	
PMT	4	5	Yes	No	No	Yes	
PMT	3	4	Yes	No	Yes	No	
PMT	5	5	Yes	No	Yes	No	
EC-1	5	4	Yes	No	Yes		
EC-1	4	3	Yes	No	Yes	Yes	
EC-1	2		Yes	Yes		Yes	
EC-1	5	4	Yes	No	Yes	Yes	
EC-1	4	4	Yes	No	Yes	No	
EC-1		3	Yes	No	No	Yes	
Average Ratings:	**3.33**	**3.60**	**15**	**2**	**9**	**9**	**Yes Resp**
5= Highest			**0**	**13**	**5**	**5**	**No Resp**
1= Lowest			**15**	**15**	**14**	**14**	**Total Resp**
			100%	**13%**	**64%**	**64%**	**% Yes Resp**

Project ALERT 6 Month CITY Post-Survey Results

Course Name	Field	Participant ID	Reading/Better	Listening/Better	Doing Math/Better
Course Name	Field	Participant ID	Reading/Better	Listening/Better	Doing Math/Better
CDL-Prep	In Everyday Life	401	4	4	4
CDL-Prep	In Everyday Life	402	4	4	4
CDL-Prep	In Everyday Life	406	3	3	
CDL-Prep	In Everyday Life	407			
PMT	In Everyday Life	421	3	4	2
PMT	In Everyday Life	422	1	3	2
PMT	In Everyday Life	423	4	5	3
PMT	In Everyday Life	425	3	3	3
PMT	In Everyday Life	428	5	5	5
EC-1	In Everyday Life	451	5	5	5
EC-1	In Everyday Life	452	3		3
EC-1	In Everyday Life	453	3	3	4
EC-1	In Everyday Life	455	3	5	2
EC-1	In Everyday Life	456	4	4	2
EC-1	In Everyday Life	457	4	3	2
Average Ratings:			**3.27**	**3.40**	**2.73**
5= Highest					
1= Lowest					

Course Name	Speaking in public/Better	Speaking in private/Better	Taking tests/Better	Understanding Words/Better	Solving Problems/Better
Course Name	Speaking in public/Better	Speaking in private/Better	Taking tests/Better	Understanding Words/Better	Solving Problems/Better
CDL-Prep	5	5	5	5	5
CDL-Prep	3	4	4	3	4
CDL-Prep			3	3	3
CDL-Prep					
PMT	1	3	2	3	4
PMT	1	3	3	2	3
PMT		3	3	3	
PMT	3	5	3	3	3
PMT	5	5	5	5	5
EC-1	5	5		5	5
EC-1		3		4	5
EC-1	3	3	4	3	3
EC-1	1	3	1	4	5
EC-1	4	4	1	5	4
EC-1	2	2	3	3	4
Average Ratings:	**2.20**	**3.20**	**2.47**	**3.40**	**3.53**
5= Highest					
1= Lowest					

Course Name	Following directions/Better	Understanding responsibilities/ Better	Express your ideas/Better	Using a Computer/Better	Reading/More Confident
Course Name	Following directions/Better	Understanding responsibilities/ Better	Express your ideas/Better	Using a Computer/Better	Reading/More Confident
CDL-Prep	5	5	5	5	4
CDL-Prep	4	4	4	4	4
CDL-Prep	4	4	2	3	
CDL-Prep			5	3	
PMT	5	5	4	4	3
PMT	4	2	5	3	1
PMT	5	3	3	3	4
PMT	3	3	2	2	3
PMT	5	5	5	5	5
EC-1	5	5	3	5	
EC-1	3		5	4	3
EC-1	2	3	4	3	3
EC-1	4	5	1	4	3
EC-1	4	4	3	4	3
EC-1	4	2		3	4
Average Ratings:	**3.80**	**3.33**	**3.40**	**3.67**	**2.67**
5= Highest					
1= Lowest					

Project ALERT 6 Month CITY Post-Survey Results

Course Name	Listening/More Cdonfident	Doing Math/More Confident	Speaking in public/More Confident	Speaking in Private/More Confident	Taking testsMore Confident	Understanding Words/More Confident
Course Name	Listening/More Cdonfident	Doing Math/More Confident	Speaking in public/More Confident	Speaking in Private/More Confident	Taking testsMore Confident	Understanding Words/More Confident
CDL-Prep	4	4	5	5	5	5
CDL-Prep	4	4	3	4	4	3
CDL-Prep						
CDL-Prep						
PMT	4	2	1	3	2	3
PMT	3	2	1	3	1	2
PMT	5			3		3
PMT	3	3	3	5	3	3
PMT	5	5	5	5	5	5
EC-1						
EC-1		3		3		4
EC-1	3	4	3	3	3	3
EC-1	5	2	1	3	4	4
EC-1	5	3	5	4	1	5
EC-1	3		2	2		3
Average Ratings:	**2.93**	**2.13**	**1.93**	**2.87**	**1.87**	**2.87**
5= Highest						
1= Lowest						

Project ALERT 6 Month CITY Post-Survey Results

Course Name	Solving Problems/More Cdonfident	Following Directions/More Confident	Understanding your responsibilities/More Confident	Expressing your ideas/More Confident	Using a Computer/More Confident
Course Name	Solving Problems/More Cdonfident	Following Directions/More Confident	Understanding your responsibilities/More Confident	Expressing your ideas/More Confident	Using a Computer/More Confident
CDL-Prep	5	5	5	5	5
CDL-Prep	4	4	4	4	3
CDL-Prep					
CDL-Prep				5	3
PMT	4	5	5	4	4
PMT	3	4	2	5	3
PMT	2	5	3		3
PMT	3	3	3	2	2
PMT	5	5	5	5	5
EC-1					
EC-1	5	3		5	4
EC-1	3	2	2	4	2
EC-1	5	4	5	1	4
EC-1	5	4	5	3	4
EC-1	4	4	2		3
Average Ratings:	**3.20**	**3.20**	**2.73**	**2.87**	**3.00**
5= Highest					
1= Lowest					

Course Name	Field	Participant ID	Reading/Better	Listening/Better	Doing Math/Better
Apprentice Prep	On the Job	226	4	4	2
Apprentice Prep	On the Job	227	2	3	5
Apprentice Prep	On the Job	228	3	2	5
Apprentice Prep	On the Job	109	4	4	2
Apprentice Prep	On the Job	111	2	2	2
Apprentice Prep	On the Job	112	4	5	3
Apprentice Prep	On the Job	122	3	3	1
Apprentice Prep	On the Job	201	5	4	5
Apprentice Prep	On the Job	203	4	4	4
Apprentice Prep	On the Job	212	5	5	5
Apprentice Prep	On the Job	219	5	5	5
Apprentice Prep	On the Job	220	3	2	3
Apprentice Prep	On the Job	221	5	5	4
Apprentice Prep	On the Job	222		3	5
Apprentice Prep	On the Job	225	4	4	5
Apprentice Prep	On the Job	303	3	5	1
Apprentice Prep	On the Job	307	3	3	5
Apprentice Prep	On the Job	307	4	4	4
Apprentice Prep	On the Job	314	3	4	2
Average Ratings:			**3.47**	**3.74**	**3.58**
5= Highest					
1= Lowest					

Course Name	Speaking in public/Better	Speaking in private/Better	Taking tests/Better	Understanding Words/Better	Solving Problems/Better
Apprentice Prep	3	4	2	3	3
Apprentice Prep	4	1	5	4	5
Apprentice Prep	5	5	5	4	3
Apprentice Prep	2	3	4	4	4
Apprentice Prep	2	2	2	2	2
Apprentice Prep	5	5	5	5	5
Apprentice Prep	3	4	1	3	3
Apprentice Prep	4	5	4	4	4
Apprentice Prep	4	4	4	4	4
Apprentice Prep	4	4	5	5	5
Apprentice Prep	3	5	5	5	5
Apprentice Prep	3	2	3	3	3
Apprentice Prep	5	5	5	5	5
Apprentice Prep	2	3	4		5
Apprentice Prep	5	4	5	4	4
Apprentice Prep	5	1	4	5	4
Apprentice Prep	3	3	4	4	4
Apprentice Prep	4	4	5	4	4
Apprentice Prep	3	4		2	4
Average Ratings:	**3.63**	**3.58**	**3.79**	**3.68**	**4.00**
5= Highest					
1= Lowest					

Course Name	Following directions/Better	Understanding responsibilities/ Better	Express your ideas/Better	Using a Computer/Better	Reading/More Confident
Apprentice Prep	4	5	5	3	3
Apprentice Prep	3	1	2	1	5
Apprentice Prep	4	4	4	2	4
Apprentice Prep	4	4	3		4
Apprentice Prep	2	2	2	2	2
Apprentice Prep	4	5	4	5	5
Apprentice Prep	3	3	3	1	3
Apprentice Prep	4	5	4	3	4
Apprentice Prep	4	4	4	4	3
Apprentice Prep	5	5	4	2	5
Apprentice Prep	5	5	5	3	5
Apprentice Prep	4	3	3	1	3
Apprentice Prep	5	5	5	4	5
Apprentice Prep	4		4		
Apprentice Prep	4	4	5	4	5
Apprentice Prep	5	5	5	1	5
Apprentice Prep	4	3	3	2	3
Apprentice Prep	4	5	4		4
Apprentice Prep	4	4	3		4
Average Ratings:	**4.00**	**3.79**	**3.79**	**2.00**	**3.79**
5= Highest					
1= Lowest					

Course Name	Listening/More Cdonfident	Doing Math/More Confident	Speaking in public/More Confident	Speaking in Private/More Confident	Taking testsMore Confident
Apprentice Prep	2	3	4	3	2
Apprentice Prep	3	5	3	1	5
Apprentice Prep	3	4	3	3	5
Apprentice Prep	4	4	3	2	4
Apprentice Prep	2	2	2	2	2
Apprentice Prep	4	3	5	4	5
Apprentice Prep	3	3	3	4	3
Apprentice Prep	5	5	5	5	3
Apprentice Prep	3	2	2	2	3
Apprentice Prep	5	5	5	2	5
Apprentice Prep	5	5	4	5	5
Apprentice Prep	3	4	3	3	3
Apprentice Prep	4	5	5	5	5
Apprentice Prep	3	5	2		5
Apprentice Prep	4		5	4	5
Apprentice Prep	5	1	5	4	5
Apprentice Prep	3	5	3	3	4
Apprentice Prep	4	4	4	4	5
Apprentice Prep	4	3	3	3	3
Average Ratings:	**3.63**	**3.58**	**3.63**	**3.11**	**4.05**
5= Highest					
1= Lowest					

Course Name	Understanding Words/More Confident	Solving Problems/More Cdonfident	Following Directions/More Confident	Understanding your responsibilities/ More Confident	Expressing your ideas/More Confident
Apprentice Prep	4	4	4	4	4
Apprentice Prep	5	4	5	3	1
Apprentice Prep	4	4	4	3	1
Apprentice Prep	4	5	5	4	
Apprentice Prep	2	2	2	2	2
Apprentice Prep	5	5	5	5	5
Apprentice Prep	3	3	4	4	1
Apprentice Prep	4	4	5	4	3
Apprentice Prep	3	4	4	4	4
Apprentice Prep	5	5	5	5	2
Apprentice Prep	5	5	5	5	3
Apprentice Prep	4	3	3	3	1
Apprentice Prep	5	5	5	5	5
Apprentice Prep		5	5	5	
Apprentice Prep	5	5	5	5	4
Apprentice Prep	5	4	4	5	1
Apprentice Prep	4	4	5	3	2
Apprentice Prep	4	4	4	4	
Apprentice Prep	3	4	4	4	
Average Ratings:	**3.89**	**4.16**	**4.37**	**4.05**	**2.05**
5= Highest					
1= Lowest					

Course Name	Using a Computer/More Confident	Used information on job	Used information	Shared information	Career goals
Apprentice Prep	4	5	5	5	4
Apprentice Prep	5	5	5	5	5
Apprentice Prep	4	5	3	3	3
Apprentice Prep	5	2	3	3	4
Apprentice Prep	2	3	3	3	3
Apprentice Prep	5	4	4	4	5
Apprentice Prep	4	3	3	4	4
Apprentice Prep	5				
Apprentice Prep	4	2	2	3	3
Apprentice Prep	5	4	1	1	1
Apprentice Prep	5	5	4	3	5
Apprentice Prep	3	3	3	3	4
Apprentice Prep	5	1	3	3	4
Apprentice Prep	5	3	5	4	4
Apprentice Prep	4	5	5	4	5
Apprentice Prep	4	3	2	3	3
Apprentice Prep	4	4	4	4	4
Apprentice Prep	4	4	4	4	5
Apprentice Prep	4	3	2	2	3
Average Ratings:	**4.26**	**3.37**	**3.21**	**3.21**	**3.63**
5= Highest					
1= Lowest					

Course Name	Education Goals	Taken responsibilities	Better job	Satisfied with the job	Better Worker
Apprentice Prep	5	3	3	3	3
Apprentice Prep	5	1	5	5	3
Apprentice Prep	3	2	3	5	5
Apprentice Prep	4	2	5	2	3
Apprentice Prep	3	3	3	3	3
Apprentice Prep	5	4	4	4	4
Apprentice Prep	5	5	5	4	3
Apprentice Prep					
Apprentice Prep	3	4	4	4	4
Apprentice Prep	1	5	5	1	1
Apprentice Prep	5	5	5	4	5
Apprentice Prep	3	2	3	3	3
Apprentice Prep	5	2	5	5	5
Apprentice Prep		3		3	3
Apprentice Prep	5	5	5	5	5
Apprentice Prep	4	2	3	3	3
Apprentice Prep	5	2	2	2	4
Apprentice Prep	5	5	5	5	5
Apprentice Prep	5	5	3	2	2
Average Ratings:	**3.74**	**3.16**	**3.58**	**3.32**	**3.37**
5= Highest					
1= Lowest					

Course Name	Rate DAT-Prep	Recommend	Position changed	Interested in another Class	Interviewed about DAT-Prep
Apprentice Prep	3	Yes	No	Yes	Yes
Apprentice Prep	5	Yes	No	Yes	Yes
Apprentice Prep	5	Yes	No	Yes	Yes
Apprentice Prep	5	Yes	No	Yes	No
Apprentice Prep	1				
Apprentice Prep	5	Yes	No	Yes	Yes
Apprentice Prep	4	Yes	No	Yes	Yes
Apprentice Prep					
Apprentice Prep	4	Yes	Yes	Yes	Yes
Apprentice Prep	5	Yes	No	Yes	Yes
Apprentice Prep	4	Yes	Yes	No	Yes
Apprentice Prep	4	Yes	No	No	No
Apprentice Prep	5	Yes	No	Yes	No
Apprentice Prep	5	Yes	No	Yes	No
Apprentice Prep	5	Yes	Yes	Yes	Yes
Apprentice Prep	3	Yes	No	Yes	Yes
Apprentice Prep	4	Yes	No	Yes	No
Apprentice Prep	5	Yes	Yes	Yes	
Apprentice Prep		Yes	No	Yes	Yes
Average Ratings:	**3.79**	**17**	**4**	**15**	**11**
5= Highest		**0**	**13**	**2**	**5**
1= Lowest		**17**	**17**	**17**	**16**
		100%	**24%**	**88%**	**69%**

Course Name	Do you have any questions about the DAT Prep Calss	
Apprentice Prep	No	
Apprentice Prep	No	
Apprentice Prep	No	
Apprentice Prep	No	
Apprentice Prep	No	
Apprentice Prep	No	
Apprentice Prep	No	
Apprentice Prep	No	
Apprentice Prep	No	
Apprentice Prep	No	
Apprentice Prep	No	
Apprentice Prep	No	
Apprentice Prep	No	
Apprentice Prep	No	
Apprentice Prep	No	
Apprentice Prep	No	
Apprentice Prep	No	
Apprentice Prep	No	
Apprentice Prep	No	
Apprentice Prep	No	
Apprentice Prep	No	
Average Ratings:	**0**	**Yes Resp.**
5= Highest	**19**	**No Resp.**
1= Lowest	**19**	**Total Resp.**
		% Yes Resp.

Course Name	Field	Participant ID	Reading/Better	Listening/Better	Doing Math/Better
Course Name	Field	Participant ID	Reading/Better	Listening/Better	Doing Math/Better
Apprentice Prep	In Everyday Life	226	4	4	2
Apprentice Prep	In Everyday Life	227	2	3	5
Apprentice Prep	In Everyday Life	228	4	5	5
Apprentice Prep	In Everyday Life	109	3	4	4
Apprentice Prep	In Everyday Life	111	2	2	2
Apprentice Prep	In Everyday Life	112	5	4	3
Apprentice Prep	In Everyday Life	122	3	3	1
Apprentice Prep	In Everyday Life	201	4	4	3
Apprentice Prep	In Everyday Life	203	3	3	3
Apprentice Prep	In Everyday Life	212	4	5	5
Apprentice Prep	In Everyday Life	219	5	5	5
Apprentice Prep	In Everyday Life	220	3	2	3
Apprentice Prep	In Everyday Life	221	5	5	5
Apprentice Prep	In Everyday Life	222		3	5
Apprentice Prep	In Everyday Life	225	3	4	5
Apprentice Prep	In Everyday Life	303	1	3	1
Apprentice Prep	In Everyday Life	307	4	3	5
Apprentice Prep	In Everyday Life	307	4	4	4
Apprentice Prep	In Everyday Life	314	3	4	3
Average Rating:			**3.26**	**3.68**	**3.63**
5= Highest					
1= Lowest					

Course Name	Speaking in public/Better	Speaking in private/Better	Taking tests/Better	Understanding Words/Better	Solving Problems/Better
Course Name	Speaking in public/Better	Speaking in private/Better	Taking tests/Better	Understanding Words/Better	Solving Problems/Better
Apprentice Prep	3	4	2	3	2
Apprentice Prep	4	1	5	4	5
Apprentice Prep	5	5	5	4	3
Apprentice Prep	3	3	5	4	4
Apprentice Prep	2	2	2	2	2
Apprentice Prep	5	4	5	5	5
Apprentice Prep	1	5	1	2	3
Apprentice Prep	4	5	3	4	4
Apprentice Prep	3	3	3	3	3
Apprentice Prep	4	4	5	5	5
Apprentice Prep	3	5	5	5	4
Apprentice Prep	2	2	3	3	3
Apprentice Prep	5	5	3	5	5
Apprentice Prep	2	3	4		5
Apprentice Prep	4	4	5	4	4
Apprentice Prep	4	1	4	5	4
Apprentice Prep	2	2	4	4	3
Apprentice Prep	4	4	5	4	4
Apprentice Prep	3	4	3	2	4
Average Rating:	**3.32**	**3.47**	**3.79**	**3.58**	**3.79**
5= Highest					
1= Lowest					

Course Name	Following directions/Better	Understanding responsibilities/ Better	Express your ideas/Better	Using a Computer/Better	Reading/More Confident
Course Name	Following directions/Better	Understanding responsibilities/ Better	Express your ideas/Better	Using a Computer/Better	Reading/More Confident
Apprentice Prep	4	5	5	3	3
Apprentice Prep	3	1	3	1	5
Apprentice Prep	4	4	4	2	4
Apprentice Prep	4	4	3		4
Apprentice Prep	2	2	2	2	2
Apprentice Prep	5	5	5	5	5
Apprentice Prep	3	4	4	1	3
Apprentice Prep	3	4	4	3	4
Apprentice Prep	4	4	4	3	3
Apprentice Prep	5	5	4	2	5
Apprentice Prep	5	5	5	3	5
Apprentice Prep	4	3	3	1	4
Apprentice Prep	5	5	5	4	5
Apprentice Prep	4		4		
Apprentice Prep	4	4	4	3	4
Apprentice Prep	4	4	4	1	5
Apprentice Prep	3	3	3	2	4
Apprentice Prep	4	5	4		4
Apprentice Prep	4	4	3		4
Average Rating:	**3.89**	**3.74**	**3.84**	**1.89**	**3.84**
5= Highest					
1= Lowest					

Course Name	Listening/More Cdonfident	Doing Math/More Confident	Speaking in public/More Confident	Speaking in Private/More Confident	Taking testsMore Confident
Course Name	Listening/More Cdonfident	Doing Math/More Confident	Speaking in public/More Confident	Speaking in Private/More Confident	Taking testsMore Confident
Apprentice Prep	2	3	4	3	2
Apprentice Prep	3	5	3	1	5
Apprentice Prep	3	4	3	3	5
Apprentice Prep	4	5	4	2	4
Apprentice Prep	2	2	2	2	2
Apprentice Prep	4	3	5	5	5
Apprentice Prep	3	3	3	4	3
Apprentice Prep	4	4	5	5	3
Apprentice Prep	3	1	3	1	3
Apprentice Prep	5	5	5	2	5
Apprentice Prep	5	5	3	5	5
Apprentice Prep	3	4	3	3	3
Apprentice Prep	5	5	5	5	5
Apprentice Prep	3	5	2		5
Apprentice Prep	4	5	4	4	5
Apprentice Prep	4	1	4	3	5
Apprentice Prep	3	4	3	3	4
Apprentice Prep	4	4	4	4	5
Apprentice Prep	4	3	3	3	3
Average Rating:	**3.58**	**3.74**	**3.58**	**3.05**	**4.05**
5= Highest					
1= Lowest					

Course Name	Understanding Words/More Confident	Solving Problems/More Cdonfident	Following Directions/More Confident	Understanding your responsibilities/ More Confident	Expressing your ideas/More Confident
Course Name	Understanding Words/More Confident	Solving Problems/More Cdonfident	Following Directions/More Confident	Understanding your responsibilities/ More Confident	Expressing your ideas/More Confident
Apprentice Prep	3	4	4	4	4
Apprentice Prep	5	4	5	3	1
Apprentice Prep	4	4	4	3	1
Apprentice Prep	4	5	5	4	
Apprentice Prep	2	2	2	2	2
Apprentice Prep	5	4	5	5	5
Apprentice Prep	3	3	4	4	1
Apprentice Prep	4	4	5	4	4
Apprentice Prep	3	3	3		3
Apprentice Prep	5	5	5	5	2
Apprentice Prep	5	5	5	5	3
Apprentice Prep	4	3	3	3	1
Apprentice Prep	5	5	5	5	5
Apprentice Prep		5	5	5	
Apprentice Prep	5	5	5	5	4
Apprentice Prep	5	4	3	5	1
Apprentice Prep	4	4	4	3	2
Apprentice Prep	4	4	4	4	
Apprentice Prep	3	4	4	4	
Average Rating:	**3.84**	**4.05**	**4.21**	**3.84**	**2.05**
5= Highest					
1= Lowest					

Course Name	Using a Computer/More Confident
Course Name	Using a Computer/More Confident
Apprentice Prep	4
Apprentice Prep	5
Apprentice Prep	4
Apprentice Prep	5
Apprentice Prep	2
Apprentice Prep	5
Apprentice Prep	4
Apprentice Prep	5
Apprentice Prep	3
Apprentice Prep	5
Apprentice Prep	5
Apprentice Prep	3
Apprentice Prep	5
Apprentice Prep	5
Apprentice Prep	4
Apprentice Prep	4
Apprentice Prep	4
Apprentice Prep	4
Apprentice Prep	4
Average Rating:	**4.21**
5= Highest	
1= Lowest	

Learner Expectation Summary

Please complete this form up to the dotted line when you begin a course.

Name: _____ Date: _____

Course name: _____ Class time/days: _____

Job title: _____ ❒ Male ❒ Female

English spoken at home? ❒ Yes ❒ No If no, what language is spoken at home?

_____

(Check the area in which you are most interested.)

❒ Math Improvement
❒ Reading/ Writing Improvement
❒ Communication skills improvement
❒ Test-taking skills
❒ Computer skills
❒ Other (What?) _____

_____

Specifically, what would you like to improve? _____

_____

_____

Please complete the bottom of this form when you have completed a course.

Did you learn what you expected to? ❒ Yes ❒ Almost ❒ Some ❒ No

If not, why?

❒ Absence
❒ Didn't understand the work
❒ Time schedule/ work and school
❒ Other _____

_____

Would you be interested in other courses? ❒ Yes ❒ No

If yes, what would you like to learn next? _____

_____

_____

Selected Data

LEARNER EXPECTATION SUMMARY

Course Number	Course Name	Specifically, What Would you Like to Improve	Did you learn what you expected to?	If not Why
10201	SPC Part A	Math, Taking test		
10201	SPC 1	All		
10201	SPC 1			
10201	SPC 1	Everything		
20811	ECC Axle		Yes	
20811	ECC Axle	I would like to be computer literate	Yes	
20811	ECC Axle	Learn more about the computer	Yes	
20811	ECC Axle	Understanding more about computers	Yes	
20812	ECC Axle	A general knowledge of computers	Almost	Absence
20812	ECC Axle	Knowing how to buy a computer - keep up w/ daughter who is interested in computers	Yes	
20812	ECC Axle		Yes	
20812	ECC Axle	Math, Reading & Computer skills	Almost	
20812	ECC Axle		Yes	
20812	ECC Axle	How to turn it on	Yes	
20813	ECC Axle		Yes	
20813	ECC Axle	Just learn	Some	Slow learner, good teacher
20813	ECC Axle	Learn how to work the computer-operating Windows & write papers on the computers	Yes	
20813	ECC Axle	Completely computer literate	Yes	
20813	ECC Axle	Reading and computers	Yes	
20813	ECC Axle	Computer skills and the basic functions	Yes	
20814	ECC Axle	Computer knowledge	Yes	
20814	ECC Axle	My understanding about computers	Yes	
20814	ECC Axle	My ability to communicate with others	Almost	Not enough time
20814	ECC Axle	Formatting, spread sheets, editing, and making files	Almost	I want/need the next more advanced course

LEARNER EXPECTATION SUMMARY

Course Number	Course Name	Specifically, What Would you Like to Improve	Did you learn what you expected to?	If not Why
20814	ECC Axle	Math - Out of school too long	Yes	
20814	ECC Axle	Learning to set up my own programs	Yes	
20814	ECC Axle	I'd like to know more about the computer because I have one at home	Yes	
20814	ECC Axle	There is always room for more learning, so anything and everything	Almost	Absence
20814	ECC Axle	Any skills or anything that can improve myself as a person & w/ other people in my		
20815	ECC Axle	other education areas	Yes	
20815	ECC Axle	Basic knowledge or functions of the computer	Yes	
20815	ECC Axle	Having basic knowledge of computers so I can get adv. Training	Yes	
20815	ECC Axle	Story prob., Algebra, Business math, & computer functions	Yes	
20815	ECC Axle	Spelling skills & building my vocabulary	Yes	
20815	ECC Axle	Learning Major Programs, how to upgrade, & faxing with computers	Yes	
20816	ECC Axle	Improvement in the advantage computer skills & Reading & Writing	Yes	
20816	ECC Axle	Knowledge of Computers	Yes	
20816	ECC Axle	Learn the basic use of the computer		
20816	ECC Axle	Learn basic computer skills & learn to use the Internet		
20816	ECC Axle			
20816	ECC Axle	Access library information. From the computers; basic computer skills		
20816	ECC Axle	Knowledge of computers; overall usage		
20817	ECC Axle	Computers & Math skills	Yes	

LEARNER EXPECTATION SUMMARY

Course Number	Course Name	Specifically, What Would you Like to Improve	Did you learn what you expected to?	If not Why
20817	ECC Axle	Knowledge & skill of computers	Yes	
20817	ECC Axle	Computers skills		
20817	ECC Axle	Understanding of computers		
20817	ECC Axle	Improve basic functions of a computer		
20817	ECC Axle	Operating a computer, inc. finding information & maneuvering		
20817	ECC Axle	To learn the in's and outs of a computer		
20817	ECC Axle	Knowledge & ability to comprehend & operate phases of computer		
20817	ECC Axle	Computer skills		
20906	IPC	All the above skills		
20906	IPC	I would like to improve my communication skills		
20906	IPC	I would like to learn to work with computers		
20906	IPC	I would like to improve my algebra and math skills and computer skills.		
20906	IPC	Basic computer knowledge		
20906	IPC			
20906	IPC			
20907	IPC	Math Improvement		
20907	IPC			
20907	IPC	Communication		

LEARNER EXPECTATION SUMMARY

Course Number	Course Name	Specifically, What Would you Like to Improve	Did you learn what you expected to?	If not Why
20907	IPC	Spread Sheets		
20907	IPC			
20907	IPC	MAth problem solving interacting with others		
20907	IPC			
20907	IPC	Communication skills with co workers		
20907	IPC	Communication skills,and reading/writing improvement.		
20907	IPC	Computer literacy,communication skills		
20907	IPC	Computer skills,Math improvement		
20912	IPC Axle	Recognizing and accepting changes	Yes	
20912	IPC Axle	Basic & advanced knowledge of skills in computers & design	Yes	
20912	IPC Axle	Math	Some	
20912	IPC Axle	Learn more about how classmates resolve their problems	Yes	
20912	IPC Axle	Communication skills	Yes	
20912	IPC Axle	Math computations, basic computer skills, & writing improvement	Almost	I think a computer. Pretty good but I'm a sarcastic person & I like it
20912	IPC Axle	Improve myself		
20912	IPC Axle	Public speaking w/ lg. Grps & ways to better resolve prob. In a professor Manner		

LEARNER EXPECTATION SUMMARY

Course Number	Course Name	Specifically, What Would you Like to Improve	Did you learn what you expected to?	If not Why
20912	IPC Axle	Relate job ideas & concepts to employer and manager		
20913	IPC Axle	My math skills & test-taking skills		
20913	IPC Axle	Upon completion of this course, I 'd like to become a better listener		
20913	IPC Axle	Listening better and expressing myself better		
20913	IPC Axle	Learn how to communicate w/ people who I have a difference with & that I don't	Yes	
20913	IPC Axle		Yes	
20913	IPC Axle	Communication skills, and Computer skills	Almost	Absence
20913	IPC Axle			
20913	IPC Axle	To listen clearly & communicate better	Yes	
20913	IPC Axle			
20913	IPC Axle	I would like to communicate with people better		
20913	IPC Axle		Yes	
20913	IPC Axle	How to deal with snobbish people-those who think they are better than others	Yes	
20913	IPC Axle	Being better at communicating by talking and listening	Yes	
20913	IPC Axle		Yes	
20914	IPC Axle	My Computer and Algebra skills		
20914	IPC Axle	I would like to complete my associates in Applied Science in Information Systems	Yes	
20914	IPC Axle	Computer skills	Yes	
20914	IPC Axle		Yes	
20914	IPC Axle		Yes	
20914	IPC Axle	Communication & Writing skills	Yes	
20914	IPC Axle	Reading and writing	Yes	
20914	IPC Axle	Basic overall improvement	Yes	
20914	IPC Axle		Yes	

LEARNER EXPECTATION SUMMARY

Course Number	Course Name	Specifically, What Would you Like to Improve	Did you learn what you expected to?	If not Why
20914	IPC Axle	Better ways of communicating with others	Yes	
20914	IPC Axle	How to communicate w/ a person that is very upset-What, how & when to say something	Yes	
20914	IPC Axle	To be more considerate of others and their opinions	Yes	
20914	IPC Axle	Computer skills because I don't have any	Yes	
20914	IPC Axle		Yes	
21003	Pre CNC	In college, I did not do well in Calculus.		
21003	Pre CNC			
21003	Pre CNC			
21003	Pre CNC	Understanding of CNC programs and functions	No	Different expectations from what the course offered
21003	Pre CNC	Computer skills	Almost	Absence - Because of job-training
21003	Pre CNC	Basic skills and orientation in computer language	Yes	
21003	Pre CNC	Math is where I most need to improve	Yes	
21003	Pre CNC	Reading and writing	Some	Absence
21003	Pre CNC	Identifying angles	Some	Time schedule/Work and school
21004	Pre CNC			
21004	Pre CNC	Math	No	Did not understand the work
21004	Pre CNC	Become a better speller so that I can utilize my computer skills	Yes	
21004	Pre CNC	Problem solving w/ computers, math basics, & feeling more comfortable w/ computers	Some	Time schedule/Work and school & learning other job
21004	Pre CNC		Yes	
21004	Pre CNC	CNC programming	Yes	
21004	Pre CNC		Yes	
21004	Pre CNC	Math and computers	Yes	

LEARNER EXPECTATION SUMMARY

Course Number	Course Name	Specifically, What Would you Like to Improve	Did you learn what you expected to?	If not Why
21004	Pre CNC		Yes	
21004	Pre CNC		Almost	
21004	Pre CNC		No	Time schedule/work and school
21004	CNC			
21004	CNC			
21005	Pre CNC		Yes	
21005	Pre CNC		Yes	
21005	Pre CNC		Yes	
21005	Pre CNC		Some	Want longer and more from the class
21005	Pre CNC	Would like to be more computer literate	Yes	
21005	Pre CNC	Math, Reading & Computer skills	Some	Time schedule/Work and school
21005	Pre CNC			
21005	Pre CNC	Math		
21005	CNC			
21005	CNC			
21005	CNC	Math,computers		
21005	CNC			
21007	CNC	Computer usage, reading and writing		
21007	CNC			
21007	CNC	All of the above		
21007	CNC	Test-taking skills	Some	I thought I'd be using a CNC machine
21007	CNC	Computer & Communication skills	Yes	
21007	CNC		Yes	
21007	CNC	Math, Reading, Writing, Computer, & Communication skills	Some	

LEARNER EXPECTATION SUMMARY

Course Number	Course Name	Specifically, What Would you Like to Improve	Did you learn what you expected to?	If not Why
21008	CNC	Algebra, Geometry, Percents, and decimals	Almost	I've always have had trouble with percents and negatives, pos.
21008	CNC	I need more computer knowledge	Yes	

Project ALERT

Year Two Report, January 1997

Larry Mikulecky and Paul Lloyd

Overview

The evaluators were impressed by the amount and quality of curriculum developed, the level of cooperation with partner sites, the number of courses conducted and the number of learners served. Though some progress has occurred with the analysis of learner data for impact research, we have concerns about lack of progress in two areas strongly put forth in the grant proposal. These are impact upon productivity and a structured analysis of learner gains which can be compared to control group indicators. Dissemination so far has been good, but we urge the project team to take even more action on dissemination and diffusion early in Year 3.

The detailed comments below report on the project goal by goal, and expand on the issues mentioned above.

Goal 1. To design, develop, and implement innovative workplace literacy programs that are tailored to the organization, and the skills and cultural backgrounds of participants.

This goal is divided into the following objectives:

Objective 1.1. To conduct a comprehensive pre-design analysis of jobs, employees, and organizations to gather data requisite to the design of effective literacy training.

This has been done thoroughly at all sites with interview forms for employees and supervisors, establishing the overall educational needs at those sites. The level of detail in these interviews at some sites (especially in relation to actual job materials and tasks) may not be sufficient at some of the more recent sites since curriculum developed for the communications, SPC, and technical courses seems to lack much workplace-specific emphasis. For example, the first Davis pre-SPC class covered fractions, although it was unclear that they were required to operate SPC at Davis, and nearly all the communications course dealt with general communications situations instead of a mix of general and workplace-specific situations.

Objective 1.2. To collaboratively design and develop workplace literacy programs that are responsive to the unique needs of the organizations, jobs, and employees.

During Year 2, the project has developed several more courses for its partner sites, producing an impressive array of offerings:

- Davis Tool: Pre-Apprentice Prep (previously DAT Prep),
- Davis Tool: Pre-SPC 1 and 2,
- City Management: Commercial Driver's License Prep,
- City Management: Effective Communication,
- City Management: Technology in the Workplace,
- Detroit Axle: Effective Communication Skills on Computer,

- Detroit Axle: Interpersonal Communication and Problem-Solving Skills,
- Detroit Axle: Pre-CNC Operator Preparation (recently renamed Math for Machine Operators: From Whole Numbers to Algebra).

In addition, at the UAW-Chrysler Wayne Center, computer-based learning packages (PLATO and JSEP) are being used with a number of small-business partners. The sheer number of these courses is impressive and indicates an astounding amount of effort on the parts of all concerned. In the rush to get courses up and running, links to job-specific usage (in PLATO, JSEP, and some of the more recently developed courses) appear to have been given short shrift. As these courses are refined during second and third teachings, they need additional custom-designed materials and suggestions to instructors about how to make links to workplace and home use. Detailed evaluator comments on the curriculum for SPC Prep, Effective Communication Skills on Computer, Interpersonal Communication and Problem-Solving Skills, Technology in the Workplace, and Math for Machine Operators are attached to this report as appendices.

Objective 1.3. To design and develop a range of culturally sensitive instructional methods and materials that are both technology and non-technology oriented.

The evaluators note that this objective has been dropped because interviews with both employees and managers indicated that cultural sensitivity was not an issue at any of the partner sites. The evaluators' own observations confirm this: classes were integrated and instructors were ethnically diverse, and nobody interviewed by us mentioned this matter as a problem

Objective 1.4. To design resource-rich classrooms that support traditional and technology-based instruction.

The classrooms at Davis and City Management which were observed previously meet the criteria set out in the proposal, and the recent visits to Detroit Axle and the Wayne Center showed them to be well-equipped with computers and suitable for the types of instruction taking place in them. Some additional materials allowing links to workplace and home may be needed at the Wayne Center, where generic PLATO programs dominate existing instruction. Multimedia links to the Detroit Axle workplace are an impressive addition to the materials available at that site and a cutting-edge example of how to integrate generic instruction with workplace examples.

Objective 1.5. To recruit participants, implement the site-specific programs and provide for reinforcement and transfer of training to the workplace.

Year 2 has produced a most impressive list of courses (see Objective 1.2 above), and of contacts with new companies through the Wayne Center. The project has now taught 10 courses in nearly 30 sections. However, the changing situations at Davis (internal problems) and at City Management (a shrinking pool of students) has produced some recruiting problems. Therefore the project needs to be looking for positive changes in workplace situations and consequent new opportunities. Discussions with project leaders indicated a strong awareness of this and that plans were in place or being considered. Taking advantage of the new Empowerment Zone initiative appears to offer productive new opportunities and the evaluators recognize and encourage continued efforts in this direction.

The evaluators were most impressed during their site visit with the atmosphere at the meeting of the Detroit Axle Local Joint Training Committee. Rather than vague excuses for why things were

failing to happen, there was unusually high and detailed cooperation between the project team, unions and management on removing impediments to the success of the program. Solutions being developed for such problems as department vs. plant seniority and planned access to courses may provide ground-breaking guidance to others developing workplace literacy programs in such settings.

One aspect of this objective that is not much in evidence yet is "transfer of training impact to the workplace". The evaluators need more detailed information about what kinds of evidence are being gathered to find out if this transfer is occurring. It is a concern that insufficient information is being gathered and that opportunities to gather useful information may be missed.

Goal 2. To conduct project evaluation and program impact research.

The evaluators have concerns about progress in various areas connected with this goal. These are discussed under the headings below.

Control Group

An important evaluation question is: "Would workers not in classes have learned on the job as much as other workers learned through classes?" The original project proposal addressed this important question through the consistent use of control groups. Changes within the workplaces and on-going discussions about evaluation goals have led to some restructuring of the evaluation design. For example, not every class is now designed with a control group.

However, gains made by learners are more convincing if a control group is also being monitored. Where classes have waiting lists or sections to be held later, these are natural sources of control subjects who can take pre/post measures. In fact, a post measure for the control group could serve double duty by being the pre measure once they are able to take a class, thereby cutting the additional data gathering efforts by half. We urge the project team to pursue more actively the possibilities for control groups, particularly as the randomized treatment research design will not now be implemented as originally proposed. It is important that, as part of the fulfillment of its stated goals, this project obtains some comparative data on workers who have attended class and others who have not, in order to justify the expenditures on course development and implementation. It seems clear to the evaluators that gathering such information is possible. Losing this opportunity, especially since the promise of gathering such information helped secure the funding for the project, would be a shame.

Data-base Model

The electronic data-base being developed by the project has the potential to serve as a model of data-gathering and analysis for other workplace literacy projects. However, to date, its role has not been entirely clear. The evaluators would like to know how the data-base is being used now and how it will be used during Year 3. This could be accomplished by providing general descriptions of the contents of the data-base and 5 - 6 examples of how it is being used. In addition, we would like to see summaries of the needs assessment and pre/post data gathered for all classes held in 1996.

Project Evaluation

The original program design called for extensive evaluation results by the end of Year 2, including 6-month follow-up impact data. Because of the slow start to the project, evaluation data has been available so far on only a few classes, since most began during the second half of Year 2. To date, the evaluators have seen complete data (including 6-month follow-up data) on no classes. Data on student learning has been mailed to the evaluators for 3 or 4 classes, and a handout providing a brief overview of results from additional classes was shared during the October site visit. These initial indicators of program impact appear positive.

Further analysis of program impact is still called for under the project's evaluation plan. Among the areas in which the evaluators need to see information are:

- Impact on productivity, as indicated by a variety of hard measures and self-report indices.
- Specific links between pre/post evaluation data and the varying goals of different classes.

For example, in connection with the latter area, the Technology in the Workplace course and the Effective Communication course both have multiple goals. It is sometimes difficult to determine the relationship between the goals and the evaluation data being gathered. During Year 3, further clarification of these connections will be important.

Extended Impact Research

This project has ambitiously attempted to go beyond simply evaluating the impact of instruction. A model is being constructed to elucidate the inter-relationships between such factors as literacy context, target audience, job process, and instructional environment. A theoretical discussion of these inter-relationships has been produced and disseminated. During Year 3, the evaluators look forward to seeing how this theoretical model is applied to the classes conducted by the project.

Davis Tool Follow-up Survey

This is being conducted using a questionnaire for employees, plus an interview with those who indicate on the questionnaire that they are willing to do this supplementary interview. The fact that the questionnaire and interview address several issues not directly related to DAT-Prep suggests that this is a general tool for all sites and will be used again. Therefore, it seems appropriate to comment on its format. The interview in general is good, but it could be improved by seeking specific instances of worker application of what has been learned by asking "Can you give me some examples of that?" The questionnaire and interview include both formative and summative questions, so perhaps this division could be used as a basis for analyzing the results. It is hoped that this analysis will throw light on the research questions related to impact listed above.

Impact Research

Though the project has met and exceeded many of its objectives, the evaluators are concerned about progress toward meeting the impact research goals documented in the original proposal and refined during Year 1 of the project. It appears that a large amount of data has been gathered on partner sites and individual learners, but very little has been done yet to analyze this data and answer such research questions as:

- What effect did context have on course design and results?
- What gains did learners make in areas related to class objectives?
- What effect did class attendance have on job performance?

For example, to answer this last question, measures that could be used include CDL and DAT test success, and indicators of work attendance, improved quality of work and better communication on the job. Data on elements such as these last two could be gathered by systematic qualitative interviews with workers and their supervisors, and perhaps also interviews with managers on whether project courses made attainment of ISO 9000 certification easier. Anchored rating scales could also be developed in relation to these elements.

Cost/Benefit Analysis

Early in Year 2, the project team and the evaluators developed a methodology for assigning costs of personnel and materials among the project's stated goals. Now this method needs to be applied to both Year 1 and Year 2 in order to update the allocation of time and resources. Also a start needs

to be made on matching these cost categories with program deliverables and benefits (e.g., learners served, course materials published and disseminated, guidance for other practitioners), so that a complete analysis of costs v. benefits can be produced, as stated in the proposal.

Goal 3. To disseminate the program, program products, and research findings.

Some dissemination of the project occurred during Year 2—largely through conference presentations. Also meeting minutes for late October indicate a serious and concerted approach to the dissemination process. As Year 3 begins, we encourage this much more extensive dissemination of lessons learned from the project so that other practitioners can learn from this team's experience. In addition to more extensive conference presentation, this should include submitting conference papers to the ERIC system, submitting curriculum guides to the ERIC system for use by others, and writing up project procedures for recruitment and liaison, for research instrument development and data-gathering, and for developing and implementing curriculum. At a minimum, these write-ups should be submitted to the ERIC system to expand availability. It is the opinion of the evaluators that much of what has been learned by the project team will also be acceptable for publication in professional journals. On the way to producing the wide variety of courses delivered during Year 2, the personnel of this project have learned a great deal about how to manage workplace literacy programs in complex workplaces where subtle labor/management concerns must be attended to. We know of no other project which has accomplished as much in such a wide variety of settings. This, however, only makes it all the more imperative that the lessons learned and the benefits derived from this extensive three-year project not be limited to the few hundred students who are served in the Detroit area.

The evaluators suggest that the team put together a "Lessons Learned" summary of about 20 pages, outlining the main points arising out of the two years so far, with 2-3 pages from each aspect of the project. The structure of this document could be based on the templates developed at the Retreat. The authorship of this document could be divided up according to expertise on something like the following basis:

Project management — Dale Brandenburg

Site recruitment and liaison — Hal Stack

Learner recruitment and liaison — Irene Sinclair

Teacher recruitment and training — Irene Sinclair

Needs assessment — Rita Richey

Impact research: instruments and analysis — Rita Richey

Data-gathering on sites and learners — Rita Richey, Nancy Ruetz

Developing curriculum (whole language) — Nancy Ruetz, Mary Jarvis

Developing curriculum (multimedia) — Gary Powell, Nancy Copeland

Implementing curriculum — Irene Sinclair

This summary could then serve as an outline for each author to use when writing full documents on each aspect listed above. These guides should be written for other practitioners— your counterparts at another program starting up, and be user-friendly—e.g., including short summaries of do's and don't's for those other practitioners.

The documents described above need to be disseminated widely to the workplace literacy community, through more conference presentations and through journal articles. In addition, we urge you to send project documents and curriculum materials to the ERIC system and possibly to

set up a WWW site to disseminate materials. However, there is one small caveat: some curriculum material is derivative of existing published curriculum and a bit too generic. Acknowledging these sources and going a bit more beyond them by adding more connections to workplaces can add to the value of the materials you share with the rest of the professional community. (See the review of the Axle Communication course in the Appendix.)

Goal 4. To promote program institutionalization and diffusion.

One great strength of this project is the current preparation for its continuation beyond the three-year period of federal funding. The recent All-Partners' Meeting began the necessary raising of awareness of the need to plan for continuation among the project's business partners. Also the existence of the Empowerment Zone project should provide an important opportunity for a smooth transition to a fourth year of cooperation between Wayne State University and local businesses.

The efforts being made in these areas are timely and indicative of foresight and good planning. The evaluators also observed efforts being made at the Axle planning meeting for courses and course ideas to be incorporated into existing Tech Prep programs sponsored by the employer and union. The ideas seemed to be well received and discussion of concrete possibilities occurred. This fine attention to detail and opportunity on the part of the project director and other project personnel is to be applauded. The positive reception of these transition ideas by business and union partners reflects the value they place upon what the project has developed and the high regard they have for project personnel. It was a pleasure for the evaluators to see educators at the planning meeting being treated as full partners rather than simple service providers. We recognize that such status is the result of trust being developed through a history of successfully working together to overcome the dozens of obstacles which can impede successful program development.

Summary

The evaluators have been very impressed by the progress of Project ALERT during Year 2, after its slow start in Year 1. Development and implementation of curriculum have been accomplished at a high level, clearly fulfilling Goal 1 of the project proposal. Also Goal 4, program institutionalization and diffusion, is proceeding in a very satisfactory manner. Our concerns at this stage are concentrated on Goals 2 and 3, and we recommend that the following be given top priority in Year 3:

- impact research: as a matter of urgency, a control group needs to be found for at least one upcoming class (and preferably several classes)—to validate the curriculum approaches of the project;
- impact research: the project data-base needs to be used to assess learner gains in completed classes, particularly in the area of job performance;
- cost/benefit analysis: costs of personnel and materials need to be matched with program deliverables and benefits, to produce an analysis of costs v. benefits;
- dissemination: project procedures and lessons-learned need to be written down and explained, so that other practitioners can learn from the experiences of this project.

Project ALERT — January 1997

Comments of external evaluators on curriculum drafts

SPC PREP

These two courses, SPC Prep 1 and SPC Prep 2, are very different in their presentation. SPC Prep 2 seems very well focused on SPC, the need for it and how to do it. However, SPC Prep 1 does not address SPC at all until the very end, with calculation of averages. This may present a problem of motivation for students of SPC Prep 1.

It seems to be feasible to streamline these two courses into one, targeted very specifically at the statistics needed for SPC. Then the only arithmetic needed would probably be addition and subtraction of decimals and their division by whole numbers (most likely with the use of a calculator). Fractions may not be needed at all. This issue could be resolved by conducting a task analysis of exactly what arithmetic skills are needed to carry out the SPC process at Davis Tool.

SPC Prep 1

As mentioned above, this course needs early motivation related to SPC—What is SPC? What does it look like in action?—so that workers know why they taking the class. This could be accomplished in a variety of ways: e.g., a written description, a shop-floor demonstration, or a video of SPC being carried out. Then, workers will be able to see why they are learning certain skills in the class and why the course builds up toward the calculation of averages and leads into SPC Prep 2.

Before considering the curriculum in detail, we have a few comments on the overall structure of the course. The lesson format that builds from prior knowledge toward practical application and job relevance is a good one, and the word list and glossary at the end are good and thorough. However, the purposes of the Preview and Review are less clear. Is the Preview used as a diagnostic tool before the course to decide where learners have particular weaknesses? The Review is very short (only one page) and does not cover the whole course content. It is not clear how this is to be used.

Several lessons in the course are devoted to fractions, which may not be needed for SPC at Davis. However, if fractions are used, learners will require a more thorough approach if they are to understand a topic that they presumably have failed to grasp in the past. The lessons on fractions begin with a good introduction via equal parts, but then go straight into common denominators and four rules without further explanation or justification. For learners to understand the processes related to fractions, they need to be able to refer back to diagrams of equal parts at all stages of their development, so that they can understand, for example, why a common denominator is necessary in certain situations.

The sections on decimals and negatives follow a similar pattern, beginning slowly with examples and justifications, but then accelerating rapidly into rules for calculation without providing reasons for why we do it this way. For instance, adding and subtracting negatives can best be appreciated by always using a number line or thermometer, rather than trying to remember a rule with no meaning attached to it. Similar remarks apply to multiplying and dividing negatives, and the rounding of decimals.

However, a more basic issue is establishing the need for developing workers' skills in these areas. At Davis Tool, are negative numbers used in SPC? Are fractions? Is multiplication of decimals needed? Do workers use calculators on the job? Answers to such questions should drive the focus of this course, and allow the distinction to be made between *need to know* material and *nice to know* material. The former means those skills that are necessary for workers who will be carrying out SPC on the job–these must be included in the course; the latter means other skills which may be of use to workers in their everyday lives—these can be included if there is time after the essential skills have been mastered.

SPC Prep 2

This course starts with a good introduction to issues of quality, statistics and SPC. If the two courses remain separate, such an introduction should be outlined briefly at the start of SPC Prep 1 to motivate workers and make it clear to them why they are taking the course.

The general remarks on the effectiveness of the lesson format made above for SPC Prep 1 also apply here, but there are two additional features that deserve comment. The readings on quality are an interesting inclusion, but it is unclear how these are to be used: are they an integral part of each lesson, or an optional extra? The "Daily Report" is an excellent idea, but should ask both how you learned and why you need to know. Both questions encourage useful reflection about the learning process and encourage self-motivation.

Finally, we would like to note that the current version of this course is incomplete: some lessons are still blank, and pre/post tests are missing. However, this second SPC Prep course is clearly targeted at the implementation of SPC and, as remarked earlier, a single course with this structure and streamlined to address the SPC needs of Davis Tool might be a more effective way of teaching what is currently two courses.

EFFECTIVE COMMUNICATION SKILLS ON COMPUTER

This course makes good use of Detroit Axle workplace material and context within the framework provided by the "New Reading Disc". The development team has wisely avoided making much use of the existing content material on the disk, which has a strong British flavor in its spelling, vocabulary and pronunciation, and so may be confusing to American workers, particularly those with weaker English language skills. The "New Reading Disc" also provides some structures that may not be very helpful for developing communication skills; therefore the program should be used with caution and careful thought as to the purpose of particular exercises. However, most of the structures in the program do appear to be useful, especially the scaffolding provided to reluctant writers in the form of ready-made sentences that they can manipulate into a story or argument. For example, when workers are writing a job description, it will be very helpful to them to have models of what this might look like.

The course guide claims that the four areas of Computing, Work process, Reading and Writing are covered in separate lessons. This does not seem to happen and is in any case undesirable. The visible mix of these skill areas is good and very appropriate.

We note that "Planning and Scheduling" listed in the Introduction is missing from the version of the guide that we have seen.

INTERPERSONAL COMMUNICATION & PROBLEM-SOLVING SKILLS

The lessons are clearly organized and easy to follow. The introduction and explanations to teachers are straightforward and appropriate for a communication course. There are many good activities which will need much more practice. Fortunately, there are many other contrived activities which could be dropped to provide more practice and transfer time for the stronger parts of the course. For details, see the notes below.

Lessons 1-3
The opening activity is a good way to establish rapport and break the ice. The "setting guidelines" activity of Session 2 is also a useful and real activity worthy of modeling communication. It would be nice to follow this up with more realistic, job-related activities. Maze mania and visualizing a secret garden seem a bit contrived and do not seem to push forward the learning of communication skills as well as they might. We recommend that you develop more work-related activities. Did you find the heavy use of stress reduction techniques to be necessary? The goal of the "human camera" exercise seems useful, but it seems a little too game-like. We suggest a video of a work-related incident to accomplish the same goal of demonstrating different perspectives.

Lessons 4-6
Do you still need "getting to know you" exercises by Session 4? The listing of communications needs on the job is good; we suggest starting this in an earlier session. Pretending to be animals and making animal sounds seems a bit too contrived when there are so many other more important uses for the severely limited time. The emphasis on defensive behavior and the use of video in Session 5 is very important. It would be useful to conclude the session with a link to the workplace, so that transfer of learning is more likely. It would be useful to add some team examples instead of the manager/employee example. Could the telephone example in Session 6 be made more work connected—perhaps describing the size of a room to be painted or how much carpeting might be needed to cover a floor? The "real experience" forms are a good idea. How did they work? Self rating and parent communication rating are also good ideas.

Lessons 7-9
The active listening skills are good. Again, we think these could occur earlier in the course if some of the more contrived activities were dropped (e.g., animal sounds). The "body search" activity seems a bit better—especially if the link to workplace communication can be made even clearer. The "sender-receiver-observer" activity seems like a good way to provide practice for active skills. We would like to see this extended, with the teacher and other students providing feedback about effective examples of student practice. Also, make more links to the workplace. Social bingo does not seem necessary—did the teachers find this much stress reduction required? It does cut into very important learning, practice, feedback, and transfer time. This could be a chance to introduce and practice the model which would then be elaborated upon in Session 9.

Lessons 10-12
Time on the model is well spent, especially if connections to work and family communication can be expanded. Video and any realistic application is excellent. The "know game" seems contrived. We suggest these activities be listed on a separate page and be recommended only if, after 10 weeks, the group still seems overly stressed. We think this will be unlikely. The problem-solving activity seems useful, but the connection with the self-discovery exercise seems weak. You would need to spend a good deal more time than a single exercise provides for this to prove useful. The goal of "creative solutions" is good, but we do not think the activities are likely to get someone there. More brainstorming and evaluating of ideas is likely to be more effective. Research does not

show much transfer to real-world applications from the sorts of word exercises on the IQ sheet and the "bibble" exercise.

Lessons 13-15
This lesson is nearly 2/3 of the way through the course. By now the activities should be much more work-connected and less dependent upon contrived games like mimicking each other and "name the soap". The goals are good, but the activities can be improved a great deal. We suggest dropping Lessons 13 and 14 and providing more practice on problem-solving and practicing active listening skills. Skills are not mastered in a single session. The skills covered earlier are much more important than those covered in these lessons. The goal of reaching consensus is the most important goal in these three lessons. It should be expanded and be used with several different real problems which emerge from the class. If nothing else occurs, plan an event or make decisions about ordering food.

Lessons 16-19
If the students still need to learn to feel comfortable about being in a group by Lesson 16, something has not been working in previous lessons. We recommend that you skip Session 16 and go to Session 17 on the "I" messages. We do not think you still need icebreakers this far into the course. You should build more links from "I" messages to the workplace and family use. The "values clarification" exercises seem out of place given the goals of the course and the need to practice and transfer the important skills you are presenting. We think that much of the last 3-4 sessions should be spent making connections to the personal work and family lives of the students. Too little direct class time has been allocated to team communication and the specific communication difficulties experienced in the workplace.

TECHNOLOGY IN THE WORKPLACE

Front Material
The instructor's material in clear and useful—especially in terms of methods for dealing with different sorts of learners and different sorts of group activities. More connections and suggestions related to this "front" material should be made in the very well planned daily lesson guides. The course objectives are clear cut and seem manageable for the time involved.

Minimal Literacy Level of Learners
Saying the course is not for non-readers is of some use, but you should go further. What minimum do you really mean (i.e. 4th grade reading ability? 8th grade? 10th grade?). You should provide some early activity to help the instructor find learners who are not likely to do well in the course and then suggest what might be done (e.g., counsel them out, or let them use the computer independently to learn to read better).

Daily Lessons
The daily lessons appear to be very well planned. Activating prior knowledge and making connections is a sound beginning for lessons. The lessons are clear and simple enough to provide success for nearly all learners. The use of games to practice computer skills is a good idea in the early lessons, and also allows for early success. We suggest that you allow the option of doing worksheets independently or in pairs.

The lessons are logical and develop in a reasonable way. When you get to word-processing, we suggest you have the learners start to create a document linked to their job or family needs. This can be used throughout later lessons to practice with spell checker and other tasks you wish to have students use the computer for. Perhaps the journal activity on page 70 could be started in a rudimentary form even earlier. The newsletter is a good idea, but might not work if learners do not share a good deal in common. In this case, you could create the possibility of a mixture of individual and group projects which use the computer.

Addition to Pre/Post Inventory
We suggest adding to the pre/post test and inventory some open-ended items which ask learners to list the ways in which they have encountered and/or used computers at home and at work.

MATH FOR MACHINE OPERATORS

The evaluators viewed this package during their visit of October 1996, and then reviewed it in more detail in December 1996. On the first occasion, the program was operated by its developers on its usual platform and so no technical problems arose. In the more detailed review, the program needed to be loaded from disks (which caused some difficulties that are described below), and the evaluators were joined by people with greater knowledge in the field of Instructional Systems Technology: Professor Thomas Duffy and a graduate student Chandra Hawley. Their overall impression of the package was not so favorable as that of the evaluators at their first viewing.

This multimedia course package gives a good introduction to the Detroit Axle workplace and its inter-connected departments (through the "Getting in Gear" section), and provides mathematics instruction and exercises in those areas needed by CNC machine operators. It is obvious that a great deal of effort has gone into the design and execution of the package, which goes a long way toward fulfilling its objectives. However, there are a number of problems that the evaluators wish to comment on, with a view to improving the effectiveness of the package. These are set out below under the following headings:

- interface with other computers and difficulties of loading;
- general design features that impede program use;
- design details that interfere with easy use; and
- a suggested remedy.

Interface

The program is very difficult to load from its six zip disks. It takes over an hour to load and requires such a large amount of memory that special technical arrangements are needed to accommodate the program. Both a graduate student in the Instructional Systems Technology department and a specialist in the university's Technology Laboratory spent many hours (5 - 10 hours each) trying ingenious ways of getting the program to load and run, before finally succeeding. Even then, we appeared to have some problems related to loading. In the "Getting in Gear" section, the department descriptions were not accessible from the menu screen, but only by calling up the files from the main menu. And the fonts and colors we obtained were not as good as we had seen in the demonstration at Wayne State. We suggest that the desired fonts are loaded with the program.

All of these problems could be overcome by putting the package on CD-Rom. The cost of burning a CD is now less than $10 (much cheaper than six zip disks), so this need not wait until the package is in final form. In fact, the equipment needed to burn a CD is itself now in the $500 - $2500 range. Having the draft package available as a CD will make its distribution for comment much easier, because the memory problems we had in loading will not arise and CD-Rom drives are more readily available than zip drives.

Design: general

When a user first enters the program, it is important to make a good and user-friendly impression. The complicated CNC keyboard is not needed on the opening screens, and would be better omitted from them. The testimonies (of Virdell King and Tony Mason) have a very clear and positive purpose in persuading workers of the value of the package, but these testimonies are not very clear or well-read. They need better sound quality and more expression from the readers, including eye-

contact with the viewer. Perhaps they could be re-recorded using a tele-prompter. The later narration also needs better sound quality and more expression. It is not expensive to hire a professional voice, and would make a much better impression.

Once the user has moved into the "Getting in Gear" section of the program, there is a need for more instructions about when and where to click—many of the workers using the package will have had little experience with computers. On the other hand, those with experience may be misled by seeing text in blue, into thinking that these are hot links as on the World Wide Web. It would help to add headers for Pinion and Ring Gears above the lists of departments on each side of the screen; the pictures are not enough of a clue. In addition, it is unclear how one ends a session with the package: the Quit button does not exit from the "Getting in Gear" section. We needed to restart the whole program to move from one section to the other.

Within the mathematics section, we have two kinds of comments: on the mechanics of completing answers and on the pedagogical approach. It is a little confusing to find yourself moved to the next box requiring completion when you press the Enter key for your current answer. Also the next screen is activated by completing the bottom right entry only (rather than the full table). Pedagogically, it is undesirable for a student to receive the bald response "Wrong"—better would be "Try again" or "For help, hit . . .". And the CNC forms would look more realistic with the appropriate workplace header material, which could be customized for each client workplace.

Design: detail

Some details of the program's technical design proved annoying in use. Activation by moving the cursor over text (e.g., the toggle between Virdell's and Tony's speeches) can happen without the user wanting it to; choosing to click on text is preferable. Some displays were distracting: the numbers among the words in "Welcome to Decimals", the multi-colored numerals (not appropriate for adults), and the shadow letters behind some text in a different font.

In the "Getting in Gear" section, the text was difficult to read, because too little appeared on any one screen and the lines are so short. The latter problem could be ameliorated by not right justifying (to avoid large gaps between words), but it would be better to use a smaller font so that more text will fit on a screen—or even better to narrate this material, as the package is not intended to teach reading.

In addition to these design issues, there are many unintentional and proofing errors. We give only a few examples here. They include grammar (e.g, "you" for "your"), spelling (e.g, "labled" for " labeled"), and formatting (e.g, inconsistent spacing after bullets).

Suggested remedy

It is clear from the comments above that the package needs a very careful proofing and design critique before it will be ready for general distribution. Therefore we suggest that the project hire somebody to advise in detail on desirable changes and maybe also to make those changes. Two graduate students at Indiana University are willing to do this under Tom Duffy's direction. They are Chandra Hawley and Jason Orvill, who can be contacted at (812) 331-2654 or by e-mail at chawley@indiana.edu.

Project ALERT

Report on Draft Curricula, March 1996

Larry Mikulecky and Paul Lloyd

Drafts of two curriculum packages have been sent to us. What follows below is feedback organized into areas of strength followed by suggestions for further strengthening the units for eventual dissemination and some questions of clarification.

DAT Preparation

STRENGTHS

The manual has clear directions for the instructor.

Materials and activities link to both the DAT test and to a variety of in-plant jobs (e.g., Inspector, Die Setter, South Line Operator).

The Lesson structure incorporates a solid understanding of current research on learning. Each lesson activates learner prior knowledge, provides instructor modeling, provides practice in a variety of formats (single, pairs, groups, whole class), provides a link to workplace applications, and offers learners an opportunity to comment upon and evaluate each lesson.

Reading comprehension questions provide a good mix of question types (vocabulary, text implicit questions and text explicit questions).

The technical vocabulary and writing lessons demonstrate a clear link to the Davis workplace and show evidence of literacy task analysis.

The mathematics section is introduced with the sound philosophy and purpose of linking learning to practical applications. This is then followed in the lessons, as far as the requirements of the DAT test allow.

The first fractions lesson provides an excellent start on understanding how fractions work. However this is not visibly linked to the rule-based practice of the four operations, which is where many learners get lost.

SUGGESTIONS

The manual could benefit from a 3-4 page introduction which would describe a bit about DAVIS and the DAT. This section could comment upon how the materials could be used or modified to help prepare for other tests.

In addition, this introduction section should provide a brief explanation of how to use some activities you suggest (i.e. Jigsaw groups, say something, and reciprocal questioning)

The addition of some DAVIS or DAT-like examples in the Workplace application section of the test-taking activities would strengthen this section.

Most times you indicate the sources of exercise materials. This should occur in a consistent manner. Probably at the top or bottom of each page you use would be best.

"Tips for Test-takers" list is quite long. You could break it up with some sub-headings like: At Home, Getting Ready in the Testing Room, and During the Test.

The Writing Activities section of the manual sometimes does not provide samples of the student material mentioned on the guide sheet. These should be added when needed.

The index for Writing Activities gives the impression that many more lessons are being developed. If this is not so, this page needs to be changed.

The index for the mathematics section also suggests gaps to be filled, and some problem sets appear to be missing.

The section on place value would work better as an introduction to the section on decimals, which extends the idea of place value.

The first lesson on percentages concentrates on % of amount, but the exercise that follows includes all three types of percent problem. This mix may be confusing to learners. Also, will they really be doing this by long division or do they all have access to calculators?

In the section on finding unknowns, use of examples where the unknown is a digit within a number may cause confusion with multiplication of a number and an unknown (e.g., compare $3m46$ with $3m$). Such examples would be better avoided for this reason - and because they rarely arise in real life.

Building Effective Communication Skills

STRENGTHS

Useful initial statement of whole language philosophy.

The manual has clear directions for the instructor.

The Lesson structure incorporates a solid understanding of current research on learning. Each lesson activates learner prior knowledge, provides instructor modeling, provides practice in a variety of formats (single, pairs, groups, whole class), provides a link to workplace applications, and offers learners an opportunity to comment upon and evaluate each lesson.

Moving toward production of a newsletter allows for incorporation of most effective elements of a whole language approach.

Suggestions for Adult Learners and Tips for Teaching are useful. Consider adding these to DAT curriculum.

Glossary of suggested activities is marvelous-- practically a textbook in itself.

Course goals and activities are well conceived though perhaps too ambitious for just 30 hours of instruction. Most goals will take more than a single lesson to accomplish.

"Plepto cheese" example is great.

SUGGESTIONS

The Learning Styles suggestions are useful. They could be strengthened with some suggestions to instructors about how to identify a learner's particular learning strengths. These need not be extensive.

There is a bit of contradiction is saying there are no prerequisites, but that the course is not a beginning reading and writing class. You might consider saying that the course is designed for a minimum of intermediate level literate (i.e. 5-6th grade plus) in the prerequisites section.

The Four year olds at the Fire Station selection is about high school difficulty level—primarily due to sentence length. It is comparable to a newspaper article. If the majority of students is below this level, an easier selection for the beginning of the course would be better. Your suggestions for oral reading help, but you want to avoid early frustration with the materials you provide. The Maslow piece is a bit easier to read, but still upper middle-school level.

You could introduce the idea of interviewing for a newsletter during the Interview lesson. A good activity might be interviewing a fellow classmate with the goal of writing a brief newsletter profile.

To incorporate the Whole Language approach you introduce this unit with, you might consider building in more student choice in activities. This could be linked to preparing the newsletter. Students could create topics for interviews, decide which materials should be skimmed and scanned, what activities require notes, etc.

Many of the objectives are unlikely to be accomplished in a single lesson. You address this somewhat by suggesting that teachers may wish to select goals and customize instruction. A useful addition would be a suggestion of additional materials an instructor could use if additional lessons were needed. As a beginning, these could be specific chapters from your reference list.

If computers and word-processors are available, you could consider introducing the idea of the newsletter very early and having many of the lessons lead to brief stories which could be written, spell-checked, and later included in a newsletter.

Project ALERT

Report on Multimedia Development, March 1996

Larry Mikulecky and Paul Lloyd

The multimedia package is being designed for the Chrysler Detroit Axle plant, to assist workers in the transition to higher technology particularly the use of machines with Computer Numerical Control (CNC). The package will include:

1. 10-12 math modules focusing on the use of decimals in CNC applications and including a simulated CNC panel,
2. a tutorial on gear and pinion theory at just sufficient depth to provide workers with an idea of what the machines they operate are doing,
3. a glossary of key terms accessible from the other units by hot words,
4. a description of the process flow through the departments involved in production of gears and pinions, designed to increase workers' awareness of the whole process.

At the visit in late March 1996, the only part of the package seen by the evaluators was a partially-completed version of the first math module (introduction to decimals) and some of the overall structure of the package. The evaluators were very concerned about the slow progress on the package, with only one of 10 modules started, and about the instructional format in that module, which did not make much use of the flexibility possible in a multimedia package.

Based on the sample seen, we have the following more detailed comments.

Strengths

1. Established need

Based on a task analysis of the skills workers need to operate CNC machines, a design matrix has been developed that clearly sets out the relation between the necessary mathematical skills and the models and methods to be employed in the multimedia design. The evaluators' interviews with Chrysler Detroit Axle employees and managers confirmed the nature of this need. The managers, in particular, emphasized that

training related to the operation of CNC machines was central to the plant's effort. They believed that this multimedia package had great potential for assisting the plant to move smoothly toward an increasingly CNC-based future.

2. Program introduction

The evaluators were impressed with the opening sequence to the package, with its engaging title, "Get in Gear", and the letters rotating as gears. The proposed introductions and endorsements from key players were also seen as a good idea.

3. Sample math module

In the partially-completed version of the first math module (introduction to decimals), the evaluators saw as very positive the use of multiple approaches to the structure of decimals—the base 10 cube, divisions of the number line, and successive place values.

Suggestions

1. More flexibility for learners

The present prototype module appears to be too linear—i.e., the learner is locked into a sequence of screens, often several text screens leading toward a question item. The developers ought to incorporate the possibility of learners testing out of a module or the easier parts of a module via diagnostic questioning. For example, the wrong answer to an initial easy question on place value could direct the learner to the multiple approaches to the structure of decimals, whereas the right answer could lead to a more difficult question. In turn, the wrong answer to this question could direct the learner to the section on successive place values (skipping the approaches to the structure of decimals), while the right answer could allow the learner to test out of the module completely.

2. More learner interactivity

At present, the prototype module contains sequences of several screens which the learner just reads, without carrying out any activity. It is

recommended that the learner has an activity to do at least every second screen, and whenever possible on every screen. Examples might include:

a. recall questions related to text just read, to provide learners with immediate feedback on understanding;
b. options to click on to move directly to workplace and/or real-world examples of concepts being discussed;
c. options for learners to suggest workplace and/or real-world examples by typing to look for a match with a master-list.

3. Use of screen colors

In the prototype module, there were some places where the text did not stand out clearly against the background because of insufficient color contrast. Research indicates that formats close to print pages work best—i.e., dark text and light background. Also, whether type size is large enough is a consideration, especially if the package will be used by older workers.

Related to the issue of color contrast is that of consistent use of distinctive key colors to signal, for example, links to the glossary. It will enable learners to use the package more easily if they can learn these "codes" very quickly and become comfortable with them.

Summary

The multimedia package has the potential to be a very useful instructional tool, but very little of that potential has as yet been translated into actuality. Its development has a long way to go yet, and the evaluators are concerned that it will not be ready in time for its expected implementation at the Chrysler Detroit Axle plant.

Assuming that it can be finished in time, the structural changes suggested above will, we believe, enhance its usefulness to Chrysler Detroit Axle plant employees. Certainly, the managers interviewed at the plant see this package as a key component in their drive toward greater computer-controlled operation and look forward to its implementation with great anticipation.

Project ALERT

Report on Research Plan, March 1996

Larry Mikulecky and Paul Lloyd

The research plan developed for the project appears to be a good one and is now about to come into full implementation as the first classes are completed. One aspect of the plan already accomplished is the pre-design analysis or needs assessment at each worksite. The evaluators suggest that the needs assessment model and its applications be thoroughly documented as soon as possible, and be prepared for submission as journal articles, ERIC documents, and conference papers. Because of the wealth of material gathered by the project, it will be advisable for the team to brainstorm possible topics and audiences, and then prioritize among them to decide where best to channel their efforts.

With regard to the gathering of learner data at Davis Tool, it seems that those workers who signed on for the first wave of the DAT preparation course have been reluctant to complete a post-test and thus supply the project with a control group. The evaluators suggest that these workers be paid for their time in completing that post-test, an approach which is more likely to be successful and will be less time-consuming than repeated persuasion.

Project ALERT

Report on Site Visits, March 1996

Larry Mikulecky and Paul Lloyd

DAVIS TOOL

Interviewees

Steve Nelson, Director Human Resources
Mike Wysocki, UAW Plant Chairperson
Thomas Buvia, program participant
Israel Mitchell, program participant
Chauncey Cooper, instructor

1. Education Needs

   These are seen as a mixture of job preparation (for QS 9000 certification) and more general individual educational enhancement. The Human Resources Director and the UAW Plant Chairperson tended to emphasize the increase in workplace technology and the need for greater worker skills to handle that, while the instructor and the participants emphasized individual development — "I'm using my mind again" — and described widening of horizons to include continuing education and possible job changes. All interviewees saw the basic skills of reading and math as vital for both job preparation and more general educational advancement.

2. Current classes

   All saw the first classes (DAT prep) as very useful. The learners emphasized the topics of math, direct preparation for the DAT test, and test-taking skills. One contrasted his positive experience doing the DAT test with that of others who had not attended the class: "The class exercises helped a lot. Those who didn't attend had a problem." This was supported by the Human Resources Director, who stated that class participants' scores on the DAT were as good as those of senior employees. The instructor mentioned changes in attitudes as participants developed understanding of concepts and confidence in themselves. He summarized his impression with: "It's a good program and it's needed."

More generally, both the Human Resources Director and the UAW Plant Chairperson had heard very positive comments from participants, such as: "This is a big leap forward for me" and "When are we doing this again?" The UAW Chairperson reported an excitement, people with "a smile on their face at 4 pm"; he was pleasantly surprised that people were sticking with it.

One issue mentioned by all interviewees was the dropout rate for the classes (which was about 50%), but possible reasons for this varied widely. The Human Resources Director, one participant and the instructor saw it as a problem of mixed ability classes having to cover the material together, even when progress was too fast for some and too slow for others. The instructor said: "I have to move on in the test preparation, but some are left behind." This problem was dealt with to some extent by the instructor providing extra help sessions on non-class days. The participants judged their fellow workers more harshly: "Some people were not ready, were not able to do this, and didn't belong here" and "They don't have their priorities straight." The UAW Plant Chairperson attributed the dropout rate to the fact that the DAT classes were off the clock, adding that the next class (pre-SPC) would be on work time. (However, he also stated that, speaking personally, he would prefer all classes to be off the clock, so that attendance was based on "pure enthusiasm.")

3. Classroom facilities

The classroom, which is located above the shop floor, is a former storeroom that has been converted by the company into a teaching area. All interviewees agreed that the classroom was very suitable, the instructor and one learner comparing it favorably with school classrooms they knew. Its location right on site was seen as a great advantage. However, this also produced its one major disadvantage—the noise and vibration from a press operating underneath the classroom. Only one possible change to the classroom was mentioned: the instructor would like more board space.

4. Teaching materials

Most made little comment on this area. The Human Resources Director and one participant mentioned the close match with the DAT. Not surprisingly, the instructor had most to say, stating that the materials were "adequate and getting better as we go along." He mentioned changes of emphasis in the second session (more on verbal analysis and spatial concepts, less on fractions), probably amounting to a 30% change. He thought the directions to instructors were about right—specific enough, but also allowing flexibility to the teacher.

5. Instructor priorities

All interviewees (except, of course, the instructor) had high praise for his commitment and availability to help those who were having difficulty. One participant stated: "He's not in a real hurry to get the heck out of here" at the end of class time. The participants were also impressed by his giving out his home telephone number for them to call on Saturdays. The Human Resources Director thought that this caring attitude may have kept some workers attending the class. The instructor himself saw his priorities as evaluating student needs and attitudes, and then evaluating skill levels. He also mentioned the importance of feedback from and to students: "You need to let them know you care."

6. Recruitment

The main method of recruiting was through meetings and presentations to all employees, involving both Wayne State and site personnel. One participant also mentioned that the message was passed along by word-of-mouth within the plant. The UAW Chairperson saw the "carrot of apprenticeship" as a factor. (Passing the DAT test is one of the screens for entry to the apprentice program.) However, both participants regarded this as secondary: "I would like that, but I'm doing this for me.". The instructor saw the DAT link as making a difference initially, but that workers' goals shifted later toward more general educational advancement. No interviewee questioned the effectiveness of recruitment and the Human Resources Director commented that already 20% of the hourly workforce had attended the classes.

7. Connection between class and workplace

The DAT classes were seen as having some connection with the workplace through the opportunities for advancement that they provided. However, both the Human Resources Director and the UAW Chairperson saw "the biggest one coming"—the pre-SPC class would allow the company to overcome past weaknesses in SPC use.

The instructor took a wider view of the workplace connection, dealing in class with career security and encouraging workers to develop skills other than for Davis through other educational institutions. This extended to bringing to class community college enrollment information. Both participants had picked this up and spoke of their need for more education as a preparation for an uncertain future: "Davis may not survive—education helps" and "If I need to get a new job, I'll be better prepared.".

In summary, all interviewees thought that the program was going well and meeting company and employee needs. They very much valued the hands-on involvement of the Project ALERT team, particularly that of the Program Coordinator. The Human Resources Director commented that "the key contact people are keeping them [Davis] in the loop—perhaps too much!" This last remark referred, jokingly, to the number of meetings and the occasional difficulty of scheduling them. However, the effort to maintain contact at all times was clearly appreciated.

Relation of Davis classes to program objectives under Goal 1

[To design, develop, and implement innovative workplace literacy programs that are tailored to the organization, and the skills and cultural backgrounds of participants.]

Objective 1.1. To conduct a comprehensive pre-design analysis of jobs, employees, and organizations to gather data requisite to the design of effective literacy training.

There is surprisingly clear consensus among all stakeholders on the nature of employer and employee needs and that these needs are being met. It is unusual to find such agreement during the first round of a workplace literacy program. This consensus is indicative of a well-conducted needs analysis.

Objective 1.2. To collaboratively design and develop workplace literacy programs that are responsive to the unique needs of the organizations, jobs, and employees.

Both the DAT and pre-SPC classes are seen as relevant to the workplace and appropriate for the workers as individuals.

Objective 1.3. To design and develop a range of culturally sensitive instructional methods and materials that are both technology and non-technology oriented.

This does not appear to be an issue at Davis; no comments were made about it and the nature of a test-preparation course seems to allow little latitude in curriculum emphasis.

Objective 1.4. To design resource-rich classrooms that support traditional and technology-based instruction.

The classroom provided by Davis is adequate to its purpose. The only qualifications to this concerned noise level and a desire for more board space. If the program expands to include more emphasis on individual learner development, then more learner materials and space for their display will be needed.

Objective 1.5. To recruit participants, implement the site-specific programs and provide for reinforcement and transfer of training to the workplace.

Recruitment has been very successful, the classes and their instructor have been well received, but the extent of transfer to the workplace is as yet unclear (and depend on the results of the DAT test). It is worth noting that achieving 20% employee attendance during a first round of courses is very high.

Project ALERT

Report on Site Visits, March 1996

Larry Mikulecky and Paul Lloyd

CITY DISPOSAL

Interviewees

Marcia Moss, Director Human Resources
Marvin Hill, General Manager
Stacey Lipsey, program participant
John ???, program participant
Rafeea Williams, instructor

1. Education Needs

   The initial impetus of the program here was the need to raise reading levels, both to address job literacy problems connected with form-filling and for promoting individual educational development. "Literacy was our focus", according to the Human Resources Director, who described a range from "non-readers to those uncomfortable reading and writing in front of others." The General Manager and the two participants mentioned more specific needs related to obtaining the Commercial Driver's License (drivers are the highest-paid workers), computer skills, and hazardous materials safety. In addition to these specific skills, the instructor saw a need to overcome fears of failure and to build confidence. The General Manager mentioned that the company plans to continue classes after the grant finishes, because drivers are hard to find and it is best to "teach those you know are clean."

2. Current classes

   The first CDL class, with just three participants, produced four successful CDL written tests—because the instructor took the test with her class. This level of involvement appears to be typical of the instructor, because the other interviewees' comments about the classes always referred immediately to her role. Comments from participants included: "You can read the book, but the classroom brings it out" through discussion and a teacher who knows it. The General Manager and the Human Resources Director have heard excellent reports from other participants, such as

"This class is not a waste of my time" and "This lady is a very good teacher." In addition, both participants had taken to heart much of what they had learned about trucks, especially their braking abilities, and said that they now avoided tailgating trucks or cutting in front of them when driving their own cars.

3. Classroom facilities

The classroom is a trailer which the company has brought to the worksite. This location on site was seen by all interviewees as a great advantage: "There's no temptation to drive off home instead of to class." However, the small size of the trailer is a problem ("The fellas are kinda big.") and has become more so as demand for classes has increased. The General Manager commented: "If I'd known, I'd have gotten a bigger trailer." The solution at present is to have multiple classes—and waiting lists. In addition, one of the participants mentioned the inconvenience of having no bathroom close to the trailer. The instructor was impressed by the response to any requests that she had about locks or electricity: "If ever I need anything, they're right here."

4. Teaching materials

Only the instructor and the participants commented on this area. The participants had minor criticisms of the CDL computer program, saying that some of the pictures were not clear enough on the screen to tell, for example, whether a leaf spring was broken or a tire was flat. They also suggested that it would be valuable to them to be able to take a copy of the program home to work on. And one participant suggested that some hands-on tours of a real truck would help those unfamiliar with big rigs.

The instructor was generally pleased with the Communications course materials, commenting that the manual contained all the basic information but also allowed the opportunity to expand beyond the manual. She had found that the difficulty level was about right for all the students (except one low-level reader who needed special individual attention).

5. Instructor priorities

The instructor saw her top priority as planning for ideas to involve the students, because she saw communication and confidence-building as very important. She commented that some students were ashamed of their inability to read and write, but she described their speaking and listening skills as "outstanding—they surprised themselves." For the CDL class, she emphasized knowing the material (which was new to her), but pointed out that "the CDL is reading comprehension", which related to her background in reading education. She summed up her attitude to teaching in the words: "Respect yourself and respect your students."

That this attitude had come across to the participants was clear from their comments, which included: "She is prepared and on time" and "She's a good teacher—with a problem, she'll take time to help out." They were particularly impressed that she had taken the CDL test with the first class: "The lady cares." The General Manager and the Human Resources Director had also heard such comments and emphasized the instructor's patience, non-intimidating personality, and good rapport with her students.

In addition, the instructor regularly prepares a 20-minute cassette tape to guide the work of one student who is virtually a non-reader. This extra effort and dedication on the instructor's part has been noticed by many, and was a word-of-mouth recruiting aid.

6. Recruitment

The main formal method of recruiting was through newsletters (two issues) to employees for several weeks before classes started, with sign-up sheets by the time clocks. In addition, an open house with refreshments was scheduled to display the new classroom trailer. This "has worked fine" according to the Human Resources Director, although only three workers signed on for the first class. Their feedback to others has now generated more interest and the classes are filling up. A company bonus of $300 for completion of a worker's first class was mentioned by both the Human Resources Director and the General Manager as an afterthought, but they were doubtful of its influence as an incentive—workers were still waiting for the class they wanted rather than just signing on to obtain the

bonus. This view was confirmed when neither participant mentioned the bonus; they referred to the flyer by the time clock, individual approaches by other workers, and the open house held in the trailer classroom, where workers could meet the instructor and Wayne State personnel as part of developing trust in the new system. The General Manager estimated that 40-50 employees of the 100+ on the site would go through the classes. However, one of the participants mentioned a problem with scheduling: "People wanted to do the class, but the timeframe was wrong" and suggested the need to survey potential participants about this.

7. Connection between class and workplace

   The CDL classes had a clear connection with the workplace and worker advancement. One participant commented: "The more you can do for the company, the more they'll do for you." With regard to the Communications class, the Human Resources Director anticipated an increase in skills at filling out forms, route sheets and tracking reports, as well as talking over the radio, noting that the class uses company forms. The instructor already saw changes: "They are eager to start the newsletter [a class activity] and they are more relaxed and willing to speak up."

In summary, all interviewees thought that the program was going well and meeting company and employee needs. The General Manager summed up their attitude with: "I've seen no negatives." This supportive attitude to the program is due in no small measure to the hard work and interpersonal skills of the Project ALERT Program Coordinator, who has made herself known to many of the workers on the site and is clearly well-liked by all parties. The strong rapport and working relationship between the Program Coordinator and City Disposal personnel was apparent from the wave of the first truck driver we encountered on arrival at the site through meetings with managers, the instructor and learners.

Relation of City Disposal classes to program objectives under Goal 1

[To design, develop, and implement innovative workplace literacy programs that are tailored to the organization, and the skills and cultural backgrounds of participants.]

Objective 1.1. To conduct a comprehensive pre-design analysis of jobs, employees, and organizations to gather data requisite to the design of effective literacy training.

All stakeholders are agreed on the nature of employer and employee needs and that these needs are being met.

Objective 1.2. To collaboratively design and develop workplace literacy programs that are responsive to the unique needs of the organizations, jobs, and employees.

Both the CDL and Communications classes are seen as relevant to the workplace and appropriate for the workers as individuals.

Objective 1.3. To design and develop a range of culturally sensitive instructional methods and materials that are both technology and non-technology oriented.

This does not appear to be an issue at City Disposal; no comments were made about it. The sensitivity and hard work of the African-American instructor provides an important human element here.

Objective 1.4. To design resource-rich classrooms that support traditional and technology-based instruction.

The trailer provided by City Disposal is adequate to its purpose. The only qualifications to this concerned its small size and the lack of a bathroom.

Objective 1.5. To recruit participants, implement the site-specific programs and provide for reinforcement and transfer of training to the workplace.

Recruitment has been successful, the classes and their instructor have been well received, and some transfer to the workplace is evident (with the results of the CDL test from the first class). Enrollment in some classes might be increased, possibly by program developers asking satisfied students to play a more formal role as one-on-one recruiters.

Project ALERT

Report on Site Visits, March 1996

Larry Mikulecky and Paul Lloyd

CHRYSLER DETROIT AXLE

Interviewees

Ibrahim Abouarab, UAW Chrysler liaison
Juanita McLin, UAW Chrysler liaison
Roberta Walker, President UAW Local 961
Carolyn Peckham, NTC
Tony Mason, Plant Manager
Greg Gilett, Production Manager

1. Education Needs

   The main needs were seen by all interviewees as being communication skills and computer skills (to operate machines under Computer Numerical Control). The Plant Manager reported that 25-30% of the machines in the plant were new, and more were coming—with the total rising to about 80% over the next few years. Preparation for employees to upgrade skills to operate these machines was seen as key by managers. However, the UAW liaisons wanted to see communication skills addressed first: "Lack of communication between shifts leads to lots of scrap." For example, if no note or an unclear note was left for a later shift about a machine problem, the machine could be run through its process when it ought not to be. This problem is partly due to the number of workers whose first language is not English—they include Arabs, Albanians and Yugoslavs. Also, as the Plant Manager pointed out, apart from 300 new hires, the average age of the workforce is in the mid-40s and "a lot of them barely made it out of high school." Their attitude to training has been: "I must be broke—they want to fix me." However, the approach taken by Project ALERT was intended to alleviate these fears, through meetings of all players, and "make the workers comfortable with the idea."

2. Delay in starting classes

   Implementation of the first classes had been delayed for some weeks, at first because of a threatened strike and then because of a rethink about the

Communications class. According to the Plant Manager, "we saw another thing—communication, problem-solving, conflict resolution. We'd rather they slipped [in timing] than gave us the wrong thing." But the delay had caused some embarrassment to the UAW liaisons; they were being asked: "What happened to the classes?" The President of the UAW local thought there had been unnecessary delays in visits to the plant floor, but felt that overall there had been good, frequent contact with the Wayne State team.

3. Classroom facilities

   The Production Manager had high praise for the help that the project had given them in designing the new classrooms, "which we use a lot." One contained 12 computer stations and the others were fitted up well for class or small group teaching.

4. Teaching materials

   Both the Plant Manager and the Production Manager were "very impressed so far" with the interactive multimedia they had seen. They saw it as being very helpful, and possibly central, for CNC training and for other set-up processes. If a process could be captured on multimedia, that would be a way "to get someone comfortable on a new job" without making expensive mistakes. However, the Plant Manager saw a possible problem with proprietary information if the project wanted to use elsewhere materials developed for Chrysler. The Production Manager, however, believed that "most information is pretty generic" and that this may not be a difficulty. Both of them emphasized that the Communications class was just a means toward the end of the pre-CNC class and the "multimedia CNC simulation." Maintaining timelines with the multi-media part of the curriculum development appeared very important to the managers.

5. Instructor priorities

   Not applicable at this stage, because classes are not yet in operation.

6. Recruitment

   A comprehensive recruitment plan has been developed and will be implemented mainly by the Plant Liaisons. They will approach workers in

order of seniority, because, as one of the liaisons put it, "the higher group has been ignored a long time." The President of the UAW local also pointed out that this group is more stable—there will be "no worry about lay-offs or shifts to other jobs." Fifty workers will be targeted initially. Preliminary work has begun on this, including the production of a flyer, and many workers are ready for the program to start. As noted earlier, the liaisons are being asked: "What happened to the classes?" and the Production Manager added that "we seem to have hit a nerve out there."

7. Connection between class and workplace

   Not applicable at this stage, because classes are not yet in operation. However, content promised by multimedia curriculum appears to be strongly connected.

In summary, all interviewees thought that preparation for the program was going well, apart from the delays mentioned above. And there was a real excitement about the program's possibilities, particularly the multimedia package for the pre-CNC class. But further delays could present major problems.

Relation of Chrysler Detroit Axle classes to program objectives under Goal 1

[To design, develop, and implement innovative workplace literacy programs that are tailored to the organization, and the skills and cultural backgrounds of participants.]

Objective 1.1. To conduct a comprehensive pre-design analysis of jobs, employees, and organizations to gather data requisite to the design of effective literacy training.

All stakeholders are agreed on the nature of employer and employee needs and that these needs will be met. The emphasis differed somewhat between managers and union representatives.

Objective 1.2. To collaboratively design and develop workplace literacy programs that are responsive to the unique needs of the organizations, jobs, and employees.

Both the Communications and pre-CNC classes are seen as relevant to the workplace and appropriate for the workers as individuals. Delays in development are currently being accepted, but are starting to become a problem.

Objective 1.3. To design and develop a range of culturally sensitive instructional methods and materials that are both technology and non-technology oriented.

This issue has been addressed by choosing suitable UAW plant liaisons, including one from the large Arab minority at the plant. Also a short section in the Communications Skills instructor's manual gives advice on ways to establish a learning environment in which diversity is valued.

Objective 1.4. To design resource-rich classrooms that support traditional and technology-based instruction.

The multimedia and other classrooms provided by Chrysler Detroit Axle are of high quality and very suitable for their purpose.

Objective 1.5. To recruit participants, implement the site-specific programs and provide for reinforcement and transfer of training to the workplace.

Not applicable at this stage, because classes are not yet in operation. A strong plan and a recruiting brochure are in place.

Project ALERT

Outline of Evaluation Plan

Larry Mikulecky and Paul Lloyd

Evaluation goals:

1. To assess achievement of project goals and objectives.
2. To assess impact of program: learner gains, work productivity.
3. To conduct a year-by-year cost/benefit analysis of the project.

1. To assess achievement of project goals and objectives.
   a. Review objectives and deliverables.
   b. Collect documents and information that support achievement of project goals and objectives (see list following).

2. To assess impact of program: learner gains, work productivity.
   a. Assist with development of appropriate measures.
   b. Monitor gathering of assessment data on learners by project personnel (including pre/post measures).

3. To conduct a year-by-year cost/benefit analysis of the project.
   a. List deliverables and other benefits:
      e.g., classes held,
      number of learners served,
      course materials and instructor guides,
      computer programs developed,
      guidelines for others to implement model.
   b. For all project staff, list
      the benefits anticipated,
      when they are expected to be achieved,
      what progress has been made, and
      how much time and resources have been spent in relation to deliverables.
   c. Divide deliverables into Service Provision (e.g., number of learners served), and Replicable Model (applicability of the teaching model).

Project ALERT

Sources of Information to Assess Achievement of Program Goals and Objectives

General

Proposals (original grant proposal, continuation proposals, human subjects review, résumés for project personnel)

Analysis of costs and benefits (project tracking sheets, report on allocation of team members' time, costs of staff time and expenses, yearly summary of achievements for each goal and objective)

[Goal 1. To design, develop, and implement innovative workplace literacy programs that are tailored to the organization, and the skills and cultural backgrounds of participants.]

Objective 1.1. To conduct a comprehensive pre-design analysis of jobs, employees, and organizations to gather data requisite to the design of effective literacy training.

Project meeting minutes

Notes from project team site visits (including estimates of time spent on various activities)

Evaluator interviews with project personnel and participants

Evaluator visits to program sites

General print information from workplace sites (e.g., Davis Tool description, Detroit Axle description, UAW-Chrysler Course Summary)

Needs assessment process (flow chart, data collection matrix, task analyses, job descriptions)

Instruments (hourly employee interview, supervisor interview, observation checklist)

Needs assessment reports (data-base output from each site)

Objective 1.2. To collaboratively design and develop workplace literacy programs that are responsive to the unique needs of the organizations, jobs, and employees.

Project meeting minutes

Notes from project team site visits (including estimates of time spent on various activities)

Evaluator interviews with project personnel and participants

Evaluator visits to program sites

Whole language curriculum materials (curriculum development task list, job task analyses, course description, lesson plans, workplace resource materials, supplemental materials, instructor's manual)

Technology curriculum materials (curriculum development task list, overview plan, instructional strategy, completed software evaluation forms, list of software purchased, job task analyses, in-house software developed)

Objective 1.3. To design and develop a range of culturally sensitive instructional methods and materials that are both technology and non-technology oriented.

Project meeting minutes

Notes from project team site visits (including estimates of time spent on various activities)

Evaluator interviews with project personnel and participants

Evaluator visits to program sites

Reviewing curriculum for bias and accounting for learning styles and workplace culture (reports on process and results: e.g., article on methods with examples)

Whole language curriculum materials (curriculum development task list, job task analyses, course description, lesson plans, workplace resource materials, supplemental materials, instructor's manual)

Technology curriculum materials (curriculum development task list, overview plan, instructional strategy, completed software evaluation forms, list of software purchased, job task analyses, in-house software developed)

Objective 1.4. To design resource-rich classrooms that support traditional and technology-based instruction.

Site plans (including relation to needs assessment)

Project meeting minutes

Notes from project team site visits (including estimates of time spent on various activities)

Evaluator interviews with project personnel and participants

Evaluator visits to program sites

Objective 1.5. To recruit participants, implement the site-specific programs and provide for reinforcement and transfer of training to the workplace.

Project meeting minutes

Notes from project team site visits (including estimates of time spent on various activities)

Evaluator interviews with project personnel and participants

Evaluator visits to program sites

Recruitment materials (plans, flyers)

Site plans, classes held, learners served (including relation to needs assessment)

Instructor recruitment materials

Delivery documentation (database reports, instructor reflections and logs)

Instruction follow-up (review session materials, job aids)

Goal 2. To conduct project evaluation and program impact research.

Project meeting minutes

Notes from project team site visits (including estimates of time spent on various activities)

Project data base (description, output)

Needs assessment reports (data-base output from each site)

Assessment (instruments, pre/post test results, effect on job performance)
— student course evaluations ?

Impact research model (plan, matrix, flow chart, task list)

Impact research results (analysis of instructor logs, reports on sites and learners)

Evaluator interviews with project personnel and participants

Evaluator visits to program sites

External evaluation (program impact measures, reports on achievement of project goals and objectives, cost/benefit analysis)

Goal 3. To disseminate the program, program products, and research findings.

Project meeting minutes

Conference papers (proposals, summaries) — these should be submitted to ERIC and for possible publication

Documentation of replicable model (procedures, curriculum) — are there any others?

Goal 4. To promote program institutionalization and diffusion.

Project meeting minutes

Notes from project team site visits (include estimates of time spent on various activities)

Documentation of replicable model (procedures, curriculum) — are there any others?

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Full List of Information Sources for Evaluation

Proposals (original grant proposal, continuation proposals, human subjects review, résumés for project personnel)

Analysis of costs and benefits (project tracking sheets, report on allocation of team members' time, costs of staff time and expenses, yearly summary of achievements for each goal and objective)

Project meeting minutes

Notes from project team site visits (including estimates of time spent on various activities)

General print information from workplace sites (e.g., Davis Tool description, Detroit Axle description, UAW-Chrysler Course Summary)

Needs assessment process (flow chart, data collection matrix, task analyses, job descriptions)

Instruments (hourly employee interview, supervisor interview, observation checklist)

Needs assessment reports (data-base output from each site)

Whole language curriculum materials (curriculum development task list, job task analyses, course description, lesson plans, workplace resource materials, supplemental materials, instructor's manual)

Technology curriculum materials (curriculum development task list, overview plan, instructional strategy, completed software evaluation forms, list of software purchased, job task analyses, in-house software developed)

Reviewing curriculum for bias and accounting for learning styles and workplace culture (reports on process and results: e.g., article on methods with examples)

Recruitment materials (plans, flyers)

Site plans, classes held, learners served (including relation to needs assessment)

Instructor recruitment materials

Delivery documentation (database reports, instructor reflections and logs)

Instruction follow-up (review session materials, job aids)

Project data base (description, output)

Assessment (instruments, pre/post test results, effect on job performance)
— student course evaluations ?

Impact research model (plan, matrix, flow chart, task list)

Impact research results (analysis of instructor logs, reports on sites and learners)

Conference papers (proposals, summaries) — these should be submitted to ERIC and for possible publication

Evaluator interviews with project personnel and participants

Evaluator visits to program sites

External evaluation (program impact measures, reports on achievement of project goals and objectives, cost/benefit analysis)

Documentation of replicable model (procedures, curriculum) — are there any others?

Wayne State Project ALERT

FORMATIVE EVALUATION REPORT
AUGUST 1995

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Introduction

This formative evaluation report is based on information gathered mainly during July and early August 1995. It should be regarded as a snapshot of Project ALERT taken at this time. The project has since made progress not recorded here on a number of the issues mentioned in the report.

Funded in late 1994 by the National Workplace Literacy Program (NWLP), Project ALERT is a partnership of Wayne State University's College of Education and Labor Studies Center, the Detroit Public Schools, and the unions and management at several Detroit manufacturing firms. These are the Chrysler Detroit Axle Plant and UAW Local 961, the UAW-Chrysler National Training Center, the Davis Tool & Engineering Company and UAW Local 174, and the City Management Corporation.

According to the grant proposal, the stated purpose of the project is:

> "To provide for an innovative institutionalized workplace literacy program that will increase the skills of employees and improve the productivity of the organization and the quality of its products" (p. 16).

The proposal further breaks the purpose out into goals and objectives as follows (pp. 16-17):

Goal 1: To design, develop, and implement innovative workplace literacy programs that are tailored to the organization, and the skills and cultural backgrounds of participants.

Objective 1: To conduct a comprehensive pre-design analysis of jobs, employees, and organizations to gather data requisite to the design of effective literacy training.

Objective 2: To collaboratively design and develop workplace literacy programs that are responsive to the unique needs of the organizations, jobs, and employees.

Objective 3: To design and develop a range of culturally sensitive instructional methods and materials that are both technology and non-technology oriented.

Objective 4: To recruit participants, implement the site-specific programs, and provide for reinforcement and transfer of training to the workplace.

Goal 2: To conduct project evaluation and program impact research.

Goal 3: To disseminate the program, program products, and research findings.

Goal 4: To promote program institutionalization and diffusion.

The project was awarded the federal grant to carry out this proposal in November 1994, which was two months earlier than the project team had expected. A number of project members had prior commitments to finish with before starting work on this project and there were also some necessary changes and additions to the team. Though some work on portions of the project occurred throughout the winter, a full team with clear leadership and team responsibilities was not in place until March 1995.

One casualty of changing leadership and shifting team member responsibilities was the project team's communication with the external evaluators, which was infrequent for several months. Meetings and faxes in late 1994 and early 1995 produced a To Do List for the project team, which asked for:

- a breakout on costs to goals,
- a list of project deliverables divided into Service Provision and Replicable Model, and

- notes of meetings of project personnel.

"Service Provision" was seen as a convenient way to consolidate program delivery and evaluation goals and "Replicable Model" a convenient way to consolidate the dissemination, institutionalization, and diffusion goals. These requests were not addressed by the project team until late spring of 1995.

During May 1995, contact was re-established and a more regular flow of documents began, including minutes of project meetings. The evaluators could then see that the project team had been completed, that there had been much progress on liaison with the workplace partners, and that the whole language curriculum was in an advanced state of development preparatory to teaching the first class at Davis Tool. However, it was clear that the time originally proposed for starting this class would not be achieved; the delay was likely to be about three months.

In July 1995, the evaluators visited Detroit to meet with the project team. During detailed discussion of the progress made to date, the evaluators appreciated the reasons why the schedule had slipped, but urged the team to work toward some concrete deliverables for Year 1, including documentation, curriculum tools, and lessons learned for producing a replicable model. The evaluators emphasized this because the service provision portion of achievements will be at most one workplace class taught before the end of October. The project team was encouraged to document the methods and techniques used in workplace liaison, needs assessment, curriculum development, teacher recruitment, instructional delivery, and learner assessment. An idea suggested for deliverables related to project goals 3 and 4 (Replicable Model) is the production of draft chapters of a guide to setting up such a project. These deliverables could demonstrate the Year 1 progress in developing a model for an innovative workplace literacy program which could be institutionalized, replicated, and disseminated.

Since the July meeting, there has been further contact between the project team and the evaluators, including discussion of draft

curriculum and assessments for the first class at Davis Tool, and the conducting of extended formative evaluation interviews with key project personnel.

Evaluation Goals and Sources of Information

The purpose of a formative evaluation is to monitor the progress of a program while it is still under way, in order to recommend changes needed to help the project team keep the program on track. Four areas often examined in such evaluations are program goals, resources, processes and impact. By early August, no classes had been held and curricular materials were still being developed. For these reasons, the evaluation will concentrate primarily upon consensus of goals and sufficiency of resources.

It is an assumption of this evaluation model that, for a program to be most effective, program goals should be shared and understood by all stakeholders, including such groups as the principal investigators, curriculum developers, company personnel, and union officials. The rationale for this assumption is that, when goals are shared and understood by all, communication problems are reduced, teams can work more efficiently, and the likelihood of goals being reached increases. Sometimes, misunderstandings may occur as to what a program is supposed to accomplish. These disagreements need to be clarified and resolved before the program continues very far.

In addition, formative evaluation should address a program's resources, such as time, work space, materials, and expertise. Are sufficient resources available to meet the stated program goals, and is the program making reasonable progress toward these goals? Resources can include time for curriculum development, class time allocated to achieve goals, appropriate learning materials and space for instruction, and personnel with the training and expertise needed to accomplish goals.

The evaluators have gathered evidence of the project's activities and progress through documents, observations and interviews. The project team has sent evaluators a number of relevant documents,

including the original project proposal, minutes of team meetings, instruments used for the needs assessment, and samples of the whole language curriculum and its learner assessments. The evaluators learned more about the project on a trip to Detroit to talk with the team and visit some of the workplaces involved in the project. And, finally, the evaluators conducted extended telephone interviews, in which the project personnel were asked about program goals and resources. The following project personnel participated in individual interviews:

Dr Dale Brandenburg, Co-Principal Investigator,
Dr Gary Powell, Co-Principal Investigator,
Dr Rita Richey, Co-Principal Investigator,
Dr Hal Stack, Co-Principal Investigator,
Ms Nancy Ruetz, Assistant Project Director of Curriculum,
Ms Mary Jarvis, Graduate Research Assistant (Reading),
Ms Irene Sinclair, Program Coordinator,
Ms Sheila Reed, Project Secretary,
Mr Steve Nelson, Davis Tool Human Resources, and
Mr Mike Wysocki, Davis Tool Union Chairman.

Interviews consisted of specific questions followed by standard non-directive prompts (i.e., Can you think of any more examples?) as a means for prompting recollection and full answers. The specific questions that the interviewees were asked are as follows:

Goals

1. What do you see as the main purposes, goals and objectives of the project?
2. Can you give me some examples of what you see the project producing?

Resources

For a project to be fully effective, it needs sufficient resources. This means people, time, space and materials. Can you comment on how you see the resources of this project, giving specific examples?

1. People (background, training, etc)
2. Time to reach goals
3. Work space (development, delivery)
4. Materials (development, teaching)

Results

The following summary of project goals and resources is based on the documents, observations and interviews described above. The section headings below correspond to the telephone interview questions just listed.

Purposes, goals and objectives

The proposal (pp. 16-17) lists the principal goals of the project as:

Goal 1: To design, develop, and implement innovative workplace literacy programs that are tailored to the organization, and the skills and cultural backgrounds of participants.

Goal 2: To conduct project evaluation and program impact research.

Goal 3: To disseminate the program, program products, and research findings.

Goal 4: To promote program institutionalization and diffusion.

Each of these goals will be considered in turn, together with the source of the information connected with it. As will be seen from the details given below, most activities of the project so far relate to curriculum design and delivery.

Goals 1 and 2: Service Provision and Evaluation

Goal 1: Design, development and implementation

Since the spring of 1995, a good deal of progress has been made in designing needs assessment instruments, setting curriculum goals with partners at one of the cooperating industries, and developing custom-designed curricular materials. Evidence for this progress comes from several areas.

Documents: The evaluators have reviewed several documents connected with program design and development. These relate to the needs assessment, the whole language curriculum, and liaison with the participating workplaces. Project personnel have developed a detailed flow chart for performing each of the major steps of a complex needs

assessment. The information in this needs assessment is gathered in such a way that all key stakeholders are contacted and results are of use for both curriculum development and later impact research. This flow chart is an outgrowth of the experience of personnel in contacting business and union partners. In addition to documenting design and development accomplishments, the flowchart will be of use in project goals related to producing a replicable model. Project personnel have also developed several interview forms for use at the workplaces: an hourly employee interview, a supervisor interview, and an observation checklist. The evaluators have seen blank copies only, although the forms have been used at Davis Tool. Prototype results from the data-base output include samples of the information gathered at Davis.

For the whole language curriculum, a complete set of lesson plans for the Test-Taking class has been reviewed, plus about 50% of the projected lessons for the Reading and Math classes, as well as instruments for learner assessment of the class on test-taking. The lessons are clearly designed, are linked to learning goals established with business partners, and provide enough detail to be of use to teachers. The lesson framework is also replicable and should prove useful in the continued development of lessons.

For the interactive technology curriculum, the only documents seen so far are an overview of the curriculum plan and some sample software evaluation forms. The overview describes, in general terms, what the custom-designed job simulations will look like and how they will be supplemented with commercially available software. The overview also lists the desirable characteristics of the technology classrooms. The software evaluation form contains rating scales for assessing the value of commercial software to the project. The major areas rated are learner/computer interactions, learner control, and sequencing of instructional events. This general material is professional and appears to be useful. However, a significant amount of project resources have been allocated to the technology curriculum.

The evaluators are concerned about a mismatch between allocated resources and progress toward deliverables in this area.

Observations and Conversations: During the visit on July 19, the evaluators discussed with the project team a full range of issues connected with program design and development, and also made site visits to Davis Tool and the UAW-Chrysler Wayne Center. Information gathered through these observations and conversations presents a picture of a good deal of effort on the part of project personnel—but also a good deal of frustration. Decisions with businesses were often slow in coming, contact people at sites changed jobs, and on more than one occasion efforts at reaching agreement which took many meetings and dozens of hours were lost due to budgetary and administrative priority changes. Though these setbacks are discouraging in relation to service provision goals, careful documentation of starts, false-starts, and dead stops can be of use in documenting for others the stages and frustrations in developing cooperative workplace literacy programs.

Project personnel reported that the needs assessment had been completed at Davis Tool and that, using the flow chart mentioned above, needs assessments were now being conducted at Chrysler Detroit Axle, City Management, and the Wayne Center.

Regarding curriculum, the project team reported that the test-taking module of the whole language curriculum at Davis Tool was complete, and that the other two modules—math and reading—were making good progress. For the interactive technology curriculum, it was reported that the high-tech classrooms had been installed at Detroit Axle and the Wayne Center, and that off-the-shelf literacy software was being reviewed as supplementary instructional material, to use until the project's own custom-designed software is ready.

The evaluators' site visit to Davis Tool revealed management and union partners who were enthusiastic about the project, and were very cooperative with the curriculum developers. The proposed teaching area, two rooms up a stairway at one end of the factory floor, was still

in preparation. The larger room contained tables, chairs and a chalkboard, but was not yet fully set up as a classroom. The smaller room, which is to be used for individual consultations with workers, was still in use as a storage area, but has since been cleared and made ready.

A visit was also made to the Chrysler Wayne Center. The Wayne Center offers a wide range of classes and other educational opportunities to Chrysler employees, family, and the local community. In July, negotiations were under way to determine how Project Alert and the Wayne Center might best work cooperatively. It was clear that meetings and discussions had transpired and evaluators were shown rooms and computer facilities which might be made available once learner populations and goals had been established. Several possible populations and classes were mentioned. Later, in August, the evaluators were notified that, due to budget cuts, this location would be included in the service provision portion of the project through the second year only, and dropped in the third year.

Other topics of discussion with project personnel related to plans and concerns for curriculum development and delivery as well as recruitment of learners and of classroom teachers. It was clear that the team was aware of what needed to be done and was involved in solving problems to accomplish project goals.

To reflect the ethnic diversity at the participating workplaces, Arabic and African American union representatives were selected as liaisons specifically for this project at Detroit Axle, and a recruiter was identified at Davis Tool. Regarding instructor recruitment, it was reported that the project team was working hard to find a teacher for the whole language curriculum at Davis Tool, but was having some difficulty finding a suitable person. By the second week of August, an instructor had been recruited, and a pool of six to eight other possible candidates had been found.

Formal Interviews: In their individual interviews, project personnel were in general agreement on the importance of curriculum

development and cooperating with the workplace partners to enhance workers' skills. Interviewee's statements indicating this recognition of curriculum development and service delivery as an important project goal included:

"The initial emphasis is on curriculum development."

"One goal is to deliver models of instruction based on separate philosophies and media, accommodating the workplace sites."

"To design resource-rich classrooms and establish bonds with our workplace partners."

"We aim to deliver good services to real people to make a difference."

"To improve the basic literacy skills of the entire workforce, and make them better at their jobs."

"To bring an instructional program that meets the needs of employers, employees, and the promises of the grant."

Goal 2: Evaluation and impact research

Documents: During the July meeting, the project team shared with evaluators a conceptual framework for conducting impact research. The framework broadly considered impact in terms of both learner gain and organizational impact, including a comparison of the project's alternative delivery systems. At the time of the visit, instruments had not yet been fully developed. Since the July visit, the project team has developed for the class at Davis Tool a pre/post evaluation plan which includes a mix of standardized measures (i.e., the TABE Math and Reading), custom-designed measures matched to the class curriculum, and a series of questions and rating scales to assess attitudinal changes. The Davis Tool class is being designed to address the need for workers to pass a company selected test being used as an indicator for access to particular jobs. During telephone conversations in July, project personnel discussed the possibility of setting up a control group of employees not able to enter the first class. This group could also be pre- and post-tested and compared to the class group on gains as well as performance on the company-selected test. It was later learned that this suggestion was vetoed by personnel at Davis Tool.

The mix of multiple measures selected and developed by the project team is appropriate to the class and to the larger conceptual framework shared during the July meeting. Solid dates for the class beginning and duration have not yet been communicated to the evaluators. We have some concern about whether there will be sufficient time for gathering pre- and post-data on what is likely to be the only class delivered by the project during its first year.

In addition to pre- and post-data, project personnel are developing a data-base for compiling learner and task assessment data. A mock-up of data-base output has been shared with the evaluators. Though it is too soon to tell conclusively, the data-base shows promise as a tool for being able to consolidate and manipulate assessment information for the large number of learners involved in the project across multiple sites. The data-base should also serve as a new tool available to other programs attempting to replicate the Project Alert model.

Observations and Conversations: At the July 19 meeting, the project team was mainly focused upon the immediate concerns of curriculum development, hiring instructors, and securing from work-site partners final understandings about classes. With the exception of the general conceptual model for conducting impact research, the evaluators were able to observe little in terms of an impact evaluation infrastructure. Concern about this was expressed during the visit. Since that time, a good deal more work appears to have been done.

Formal Interviews: Only a few of the project personnel interviewed mentioned measuring the impact of the program as a major project goal. These comments come mainly from the Co-Principal Investigators. All the comments on this topic are given here:

"To test the output of curricula in a variety of workplace settings: is it effective?"

"To compare instructional approaches."

"To determine impact."

"Testing to see what works."

It can be argued that evaluation is mainly the concern of the Co-Principal Investigators and need not concern curriculum developers, instructors, supervisors, and others. And it may be that other project personnel consider evaluation a goal, even though they did not mentioned it after repeated probes of, "Can you give me any more examples?"

Goals 3 and 4 : Creating and Disseminating a Replicable Model

Goal 3: Dissemination

Documents: Little has occurred in this area as yet, but a first conference presentation arising from the project has been delivered. Gary Powell and Lauri Elliott presented at the Adult Literacy and Technology Conference held in Philadelphia during August. The evaluators were given a copy of their proposal.

Observations and Conversations: In discussions during the July visit, the value of documenting project methods and techniques as they occur was emphasized by the evaluators. This will serve both to capture the processes while they are fresh and to show progress on deliverables connected with the replicable model. Plans for carrying out this documentation were discussed at the project's meeting on July 28.

Formal Interviews: None of those interviewed mentioned as a goal documenting the program model in ways that will allow it to be disseminated. However, several did mention this area in connection with "Examples of products and deliverables" below.

Goal 4: Institutionalization and diffusion

Documents and Observations: The evaluators have seen little evidence in this area, but the project team reports that the curriculum developers have been keeping logs of their activities, which they have used in team discussions about institutionalizing the model.

Formal Interviews: Only a few of those interviewed mentioned documenting the program model in ways that will allow it to be institutionalized. All the comments on this topic are given here:

"In the process of institutionalization, the organizations [workplaces] need to absorb the project's aims."

"To produce a replicable model."

"To introduce and institutionalize, extracting from experiences—particularly in joint labor/management cooperation, and to diffuse more broadly. D.P.S. has a role in continuing after this project."

Examples of products and deliverables

Documents: Considering the two main types of deliverable—curriculum materials and a documented model, evidence gathered by the evaluators so far relates mainly to curriculum development, including lesson plans and learner assessment for the first class at Davis Tool. These appear to be of high quality, and very relevant to the needs and objectives of the workers at Davis. For the program model, materials seen to this point include organization charts and needs assessment tools. In order for other programs to use these assessment tools, cover sheets with instructions for interviewing and use with different populations would be helpful.

Formal Interviews: Again there was general agreement among team members on what products they expected to see as a result of the project: most interviewees mentioned curriculum materials and a documented model. However, in reference to the model, the aspects mentioned were very diverse, usually reflecting the particular role that the interviewee played in the project. For example:

"Journals and stories of development at the workplace, model for needs assessment."

"Knowledge and information about the learning process: transfer, improved literacy skills, productivity."

"Assessment tools and instruments, 'how to' advice on union liaison, ongoing capacity in D.P.S. to do new things, people with skills that make a difference."

"Instructor recruitment strategies."

"Assessment tools—pre/post, scenario on SPC; log/guide on development."

"Environment to continue training at workplaces beyond grant, staff development."

"Workable model taking account of workplace realities, delivering high quality training."

A few interviewees mentioned additional products of a less tangible nature. These included producing workers with improved skills and developing environments at the participating workplaces conducive to later institutionalization of the program model.

Resources: personnel (background, training, etc)

Documents: The evaluators have received copies of the resumes of all four Co-Principal Investigators, and these show that the nature and range of expertise of these members of the project team are suited to this project. They include a mix of instructional and workplace experience which should blend well together in carrying out the project's goals. Dale Brandenburg has considerable expertise in training evaluation and economic development, Hal Stack brings a wealth of experience in labor-management relations and the setting up of workplace programs, Gary Powell contributes his expertise in relation to multimedia and instructional design, and Rita Richey has considerable experience in needs assessment and impact research.

Resumes have also been received for Nancy Ruetz and Chauncey Cooper. These show that Nancy has much experience with workplace programs, both as instructor and administrator, and that Chauncey has worked for many years with adult students and workplace classes.

Observations and Conversations: It appears that those involved in curriculum development have a complementary mix of academic knowledge and workplace experience suitable for the nature of the project. Nancy Ruetz and Irene Sinclair have considerable experience in adult education, workplace curriculum development, and basic skills instruction. Each has expended considerable effort since joining the project to master new information in the project areas. Mary Jarvis and Lauri Elliott bring expertise and a knowledge of curriculum development, the one in whole language, the other in technology.

Formal Interviews: Program personnel are very much agreed that they have a strong team together now, with a good mix of expertise. This includes the areas of program administration, research methods, curriculum development, and workplace liaison. As some of the interviewees put it:

"The team is now sufficient and complete."

"We have purposely put together a team with different backgrounds and expertise."

"Generally we have a very good team now with the skills to make the project work and to make good use of resources."

"We can get expert advice on almost any topic."

The only area where recruiting suitable personnel has proved difficult is that of worksite instructors. Until early August, it was not possible to find a teacher to start the first class at Davis Tool, despite extensive searching. (As of August 11, an instructor has been signed on for this class and a pool of six to eight other possible candidates found.)

On the other hand, one innovative feature of the project is the selection and training of workplace liaisons at the Chrysler Detroit Axle plant. These union representatives have been chosen to assist with recruitment of workers to participate in the program, and should provide a valuable link between the project team and Detroit Axle.

Resources: time to reach goals

Documents: Allowing for the start-up date of November rather than January, the project is now in its tenth month. Therefore, according to the timeline in the original proposal, project activities have fallen behind by about three or four months. But every effort is now being made to catch up on this delay.

Observations and Conversations: In addition to the overall delay during this first year, the project has a particular problem with the technology curriculum, which has not begun development yet because liaison with the workplaces where it is to be used is still incomplete.

The evaluators discussed this with the project team on July 19, and it was agreed that the hundreds of hours required for developing even a single hour of computer-based instruction would mean either cutting back on the amount of new multi-media curriculum to be developed by the project or a major reallocation of resources. Even though this portion of the project was delayed, personnel salaries related to this goal were not reallocated to other goals or delayed until this personnel time could be more productively used.

Formal Interviews: As described in the introduction to this report, the project made a slow start in this its first year. A number of those interviewed described the difficulties of the early months, with enforced changes in personnel and delays in recruiting a full team. It is, however, generally agreed now that the project is in good shape and getting back on track. Comments included:

"At first we were playing catch-up—we made a slow start, our act was not together. But now we are up and running."

"We have been scrambling since Day One."

"It was frustrating with the slow start—we missed the first goal of a class by June. But it should go better from now on."

"Ouch! We're not on track. By the end of the third year, we will catch up."

The one concern specifically mentioned was the technology-based curriculum, which has not progressed far enough yet for the project team to have a clear idea how that will look eventually:

"We have a problem in the technology area—time will probably become a constraint."

Resources: work space for development and delivery

Observations and Conversations: Of the work space devoted to the project, the evaluators saw during their visit only the College of Education basement "war room", the classrooms at Davis Tool, and the Wayne Center. The computer lab at the Wayne Center appeared to be an excellent facility, well equipped for conducting computer-based

learning. The former SPC room at Davis was still in process of conversion, but clearly had the potential to become a good learning space.

The curriculum development area in the College of Education, known to its inhabitants as the "war room", had a most exciting and business-like air, with its pin-up curriculum ideas and whole language curriculum team working well together. A potential problem with this area was the limited communication facilities: a single telephone line had to serve all who worked in the room and prevented their having electronic mail or a fax machine. It was mentioned during the visit that the project team has begun action to provide extra lines, but without positive results as yet. These restrictions appeared to hamper the curriculum development team, although they were clearly making the best of the situation.

Formal Interviews: The teaching space available for the project, both for the project team and at the workplaces, is agreed to be adequate or, in some cases, very good. The teaching rooms with computers at the Chrysler Detroit Axle plant appear to be excellent. Interview comments included:

> "Work space on site is in good shape—the plants are really good at accommodating the project."
>
> "There is a wide variety of instructional space, but some is not settled yet."

Interview comments also, however, underscored the concern about space in the "war room" which was observed during the July visit. In addition to communications bottlenecks caused by a single phone line, if more project personnel will be working in the "war room" when the technology-based curriculum is being developed, the facilities will become very crowded. Comments on this issue came from both those who worked in this area and those who did not:

> "There are some limitations in the basement, where a number of key staff work."
>
> "We have two small rooms in the basement and share one 'phone. It's very frustrating and tight, and we need an extra

line for e-mail. And soon there will be two or three others in there, working on the technology curriculum."

"We have plenty of space—I have my own office. But the basement is cramped—there is only one 'phone line, two computers, and the fax is way upstairs."

Resources: materials for development and delivery

Formal Interviews: The project seems to have sufficient resources for development materials, and team members agree that this has presented no difficulties. The arrangements at the worksites are still in progress, but the picture there seems to be good as far as it is known. Representative comments about materials follow below:

"Too soon to tell—first year or so is fine. In Year 2, we'll need some reshaping of the materials budget."

"There's plenty of money in the budget for that—perfect. Plenty of software and hardware."

"No problem—we have received anything requested."

Once classes are operating and demand for materials increases, this area should be re-examined.

Conclusion and Suggestions

The current team for Project ALERT works well together, and is generally agreed on what the project is trying to achieve and how well the resources available help them toward their goals. This is especially true in the area of service delivery and to a lesser extent in terms of evaluation and developing a replicable model. Several factors mentioned earlier have caused the project to fall behind its projected time line. Exemplary progress during the last few months suggests the new team has the project moving ahead and may be able to make up a good deal of the time lost during the first six months of Year One. The overall picture of the project's progress is positive at this time, but there are a number of areas of concern to project personnel and to the evaluators. Evaluator perceptions of project strengths and weaknesses will be summarized here goal by goal (Goals 1-4, as listed in the

original proposal, pp. 16-17), and suggestions made for changes the project team should consider.

Goal 1: To design, develop, and implement innovative workplace literacy programs that are tailored to the organization, and the skills and cultural backgrounds of participants.

After a slow start, the project team has made great progress in working with its first workplace, Davis Tool. At Davis, the needs assessment has been completed, development of the whole language curriculum is well advanced, and arrangements are in process for establishing a suitable teaching area. Recruitment for the first class is now under way, and interest is apparently very high among the workforce.

At the other sites, the computer-based teaching areas have been established and workplace liaison and needs assessment have begun, and appear to be proceeding smoothly. Once the needs of these workplaces are known, development of the customized technology curriculum will be able to commence. The project team is justifiably concerned about this aspect of the project, considering the hundreds of hours of development time required for it, and will have a clearer idea of how this will work out once the first modules are being developed.

More generally, the possible products from the project all sound attractive. It does not seem likely, however, that the project will have the resources to produce all of them. The diversity of products mentioned suggests decisions have not yet been made about which products have highest priority and who has responsibility for producing them. If this is the case, such decisions should be made in the relatively near future so that project personnel can be gathering the information they need to produce such products.

Materials and work space for the project, both at the worksites and for project personnel, are generally satisfactory and sometimes very good. Availability of materials is certainly not a problem for the project

team, and the participating workplaces have been very forthcoming in providing job materials to assist with developing custom-designed curriculum. Teaching areas at the worksites should be ready in good time for the start of classes, and the computer rooms at the three sites that are to use the technology curriculum are very well equipped. The only area of concern with regard to work space is the "war room" in the basement of the College of Education. Here conditions are somewhat cramped and communications are difficult. This problem will only be exacerbated if additional project personnel are to work in this area.

Suggestion 1

Recruitment of suitable personnel as worksite instructors has proved difficult, and various strategies have been tried. Since instructor recruitment may prove a problem for other programs, the team should document the variety of recruitment strategies employed.

Suggestion 2

The technology-based curriculum may need to be reduced in scope because of the large amounts of time required for its development: several hundred hours for each hour of finished curriculum. The time factor is particularly relevant in view of the fact that Dr Powell's allocation of time to the project will be reduced in Year 3. Therefore, it may be wise for the emphasis here to be very much on a multi-media approach that includes relatively few computer-based lesson units within a wider framework of print materials. For example, 20 hours of instruction might include 5 hours of computer-based learning modules. Even so, those 5 hours will need something like 1000-1500 hours of development time—which is 150-200 person days. However, the amount of technology-based curriculum that can be produced will be easier to determine once work starts on the first modules. The team should also consider establishing some "drop-dead" dates for this portion of the project: if a suitable subject for technology development has not been selected by XX date, then the limited resources require goals to be reduced to XX level. Coming to a new

understanding about feasible goals and action plans for the technology-based curriculum should be a very high priority.

Suggestion 3

With regard to work space, a serious concern is the basement "war room", which is seen as barely adequate at present and which will become very crowded if more project personnel are working there in future. Given the key role of service provision and curriculum development in this project, some reallocation of space seems in order. Is there any possibility of obtaining additional or different space for the project to accommodate those working in this area?

Goal 2: To conduct project evaluation and program impact research.

The first year of the project has concentrated on workplace liaison and curriculum development, and so little has been done in the way of evaluation. Some assessment instruments for Davis Tool have been developed and a database has been set up to contain all project data and documentation. This will facilitate later impact research.

However, it appears from interviews that the project team as a whole does not see evaluation as a high priority. This could affect project efficiency. Teachers and curriculum developers who share evaluation as a goal are often able to think of useful assessment approaches, gather corroborating evidence, and spot developing evaluation problems. When these people do not see impact evaluation as a major goal, careful data collection sometimes suffers and projects do not benefit from the timely evaluation insights of those closest to service delivery.

Suggestion 4

Simultaneous development of curriculum and impact assessments should be occurring. When curriculum developers do needs assessments, they can gather information about base-line data for productivity and organizational goals at the same time. When discussions for class recruitment occur, so can discussions for setting up the control groups indicated in the project proposal.

Goal 3: To disseminate the program, program products, and research findings.

The project team has given this limited attention so far. Getting a cohesive team in place, solidifying workplace contacts and developing curriculum has demanded higher priority. One conference presentation arising from the project has been delivered. The project team as a whole seems to be in the initial stages of considering the goal of producing and disseminating a replicable model. It can be argued that dissemination responsibilities fall mainly to the Principal Investigators. If, however, all personnel are aware of the twin goals of service provision and producing a replicable model, then documentation of the model and lessons learned become a part of daily practice. The importance of keeping track of key events and problems/solutions as they happen at various stages of program development was discussed during the evaluators' visit.

Suggestion 5

All of the project team is urged to document the methods and techniques used in workplace liaison, needs assessment, curriculum development, teacher recruitment, instructional delivery, and learner assessment. The core of this already exists in some of the flow-charts and tools which have been developed. However, before these would be useful in disseminating a model, the charts would require descriptions of their use which would be essential for any other program developer who wanted to follow the model being piloted here. In addition, explanations of lessons learned in developing these tools can make them a good deal more valuable to other program developers. Accomplishing this goal involves more communication among project personnel about documenting the model, for example, sharing draft descriptions of processes and exchanging ideas on both the content of such descriptions and ways of laying them out clearly and consistently across all areas.

Goal 4: To promote program institutionalization and diffusion.

Although this goal will be addressed more toward the end of the project, when responsibility for the program will devolve to the workplace participants, documenting methodologies now will assist this future activity just as for the dissemination goal discussed above.

In summary, Project ALERT has put together a strong team, which is now forging ahead very purposefully with its tasks. There are a few areas of concern to the evaluators, which are discussed above, but the future of the project appears to be in good hands and this should result in the innovative workplace literacy program described in the proposal.

Appendix — Project Documents Received

Proposals

- Original grant proposal
- Year 2 continuation proposal
- Revised Year 3 proposal

Resumes for project personnel

- Dr Dale Brandenburg, Co-Principal Investigator
- Dr Gary Powell, Co-Principal Investigator
- Dr Rita Richey, Co-Principal Investigator
- Dr Hal Stack, Co-Principal Investigator
- Ms Nancy Ruetz, Assistant Project Director of Curriculum
- Ms Chauncey Cooper, Workplace Instructor

Human Subjects Review

Project meeting minutes

- 14 meetings between February and August 1995

Time spent by project team

- Project tracking sheets
- Report on allocation of team members' time

Needs assessment

- Flow chart
- Data collection matrix
- Hourly employee interview
- Supervisor interview
- Observation checklist
- Data-base sample output

Information about workplace sites

- Davis Tool description
- Detroit Axle description
- UAW-Chrysler Course Summary

Curriculum materials

Whole language curriculum:

complete set of lessons for Test-taking

about half of set of lessons for Reading and for Math

assessment measures for Test-taking

Technology curriculum:

overview plan

software evaluation forms

proposal for conference paper (Computer-based simulations for adult literacy)

Formative interviews with project personnel

Dr Dale Brandenburg, Co-Principal Investigator
Dr Gary Powell, Co-Principal Investigator
Dr Rita Richey, Co-Principal Investigator
Dr Hal Stack, Co-Principal Investigator
Ms Nancy Ruetz, Assistant Project Director of Curriculum
Ms Mary Jarvis, Graduate Research Assistant (Reading)
Ms Irene Sinclair, Program Coordinator
Ms Sheila Reed, Project Secretary
Mr Steve Nelson, Davis Tool Human Resources
Mr Mike Wysocki, Davis Tool Union Chairman

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