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ABSTRACT

Analysis of the Project ALERT (Adult Literacy Enhanced & Redefined through Training) Workplace Literacy Project produced a description of the needs assessment process, steps, and instruments that can be used for needs assessment in other workplace education projects. The data for the needs assessment were collected through the following methods: a written document detailing actual workplace literacy requirements, descriptions of employees, and organizational climate; records of interviews with employees and management; orientation and planning materials; and a comprehensive program plan. Site-specific components were also added to the needs-assessment model, and the program was pilot tested before being broadly implemented. The data collection instruments used during the needs assessment are appended. (KC)

WORKPLACE EDUCATION

Needs Assessment in Workplace Education

Based on Work Completed during Project ALERT

Funded by the US Department of Education

National Workplace Literacy Program

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Introduction

This description of the needs assessment process, steps, and instruments was assembled over the first twelve months of the project following refinements from field tryouts and internal project team review. Documentation begins with our original concepts for literacy needs assessment as project work began. After a complete iteration of defining parameters, translating the concepts into process and data collection tools, field testing at one site, and revisions for completion at that site, we generalized the results in this form.

Initial Concepts for Literacy Needs Assessment

This section describes the original thinking on performing a literacy needs assessment based upon a thorough review of the literature and the experience of the Principal Investigators. Portions of these concepts were modified through discussions and field testing by the entire project team.

This comprehensive contextual analysis identifies the basic literacy needs of each organizational setting, and addresses those aspects of workplace training needs assessment that are currently being suggested in contemporary literature. Expansion of the typical literacy front-end analysis is seen here as a critical aspect of designing literacy programs that will have the prospects of skill improvement for the worker and organizational productivity and work behavior relevant to both employer and employee.

Manufacturing and organized labor partners have agreed to support these analysis activities. Specifically, analyses will be completed by the project staff, who will use on-site observation, worker/management questionnaires, interviews, and focus groups to determine what programs or workplace materials currently exist to assist workers; to complete a job literacy audit; to determine the nature of the organizational climate; to identify elements that will be important to instruction transfer; to identify elements that will affect this transfer including but not limited to cultural diversity.

Data for this objective will include:

- A written document detailing actual workplace literacy requirements, descriptions of employees, and organizational climate.
- Records of interviews with employees and management
- Orientation and planning materials
- A comprehensive program plan
- Minutes of the Steering Committee

Program planning will begin with a thorough analysis of the workers and manufacturers to be served. To accomplish this, a four-part analysis must be conducted. This pre-design analysis phase is critical to the success of the project. This activity will yield at least the following information:

Job Descriptions, including

- a clear description of each critical job task, including data such as: component procedures, degree of difficulty, quality criterion, required resources, required skills

- a determination of the literacy skills required to be successful with each job task
- projected literacy needs for future hires

Employee Descriptions, including:
- general literacy levels
- an identification of potential program participants, including information such as cultural and ethnic background, educational level and training experience, work experience, literacy level, English proficiency, current attitudes toward employee training
- past interest and/or involvement in available literacy or language-related training

Instructional Environment Descriptions, including:
- a description of existing literacy or language-related instructional programs
- an inventory of available instructional materials
- an inventory of available instructional equipment
- a description of existing instructional facilities and other types of instructional support available

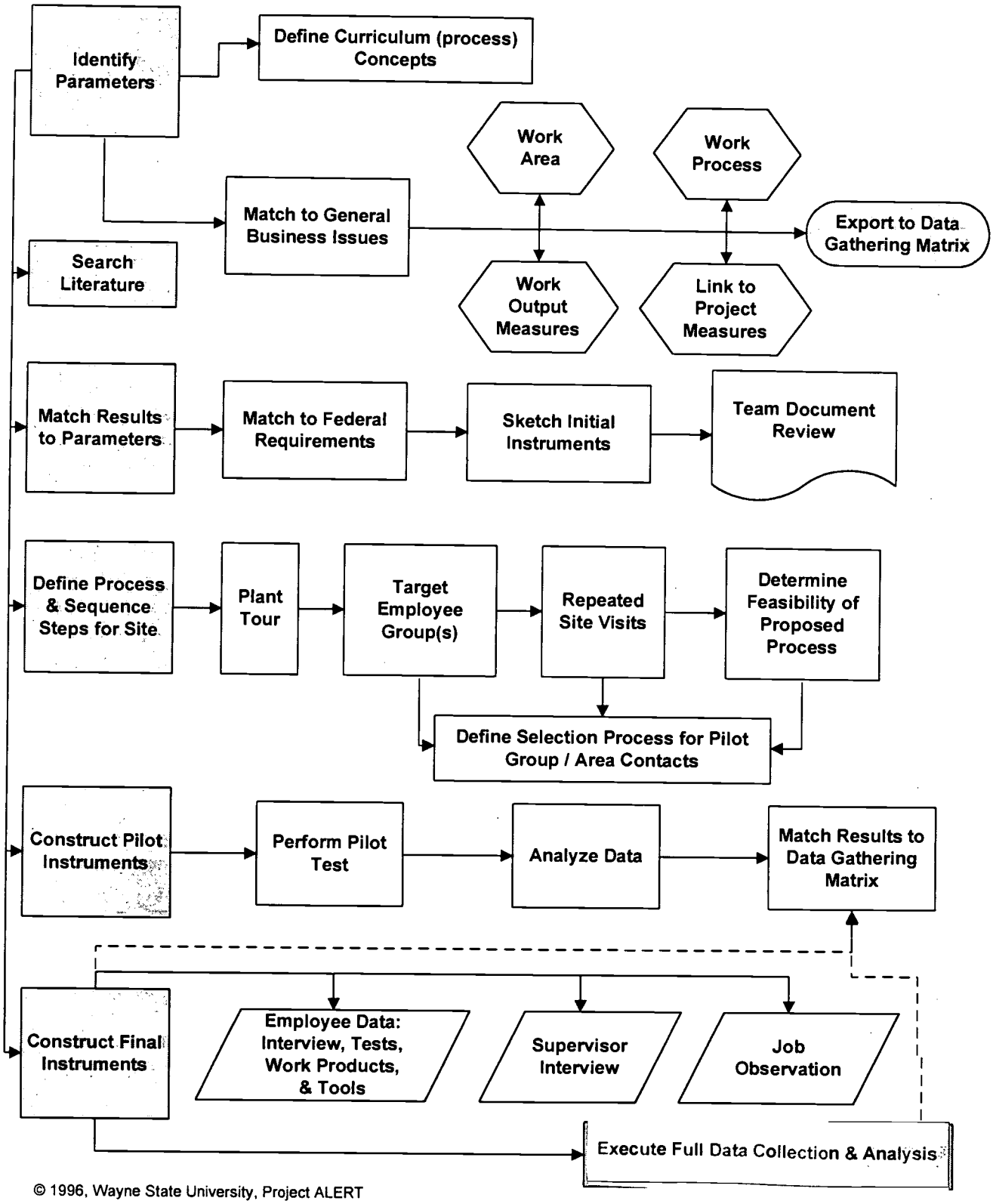
Organizational Climate Descriptions, including:
- an overview of the current organizational climate
- a determination of the existing incentives for literacy and/or language learning in each organization
- a description of those problems within the organization that are affected by literacy and
  language deficiencies
- a determination of the impact of new technology in each workplace
- a description of other existing or anticipated training needs of the organization
- an identification of those aspects of the organizational climate that are likely to facilitate or impede the transfer of literacy and language training.

Refined Needs Assessment Process

The primary goal of our needs assessment was to obtain justification for the instructional program and materials we were going to create at each site. Thus, although the process created was general, specific activities could differ from site to site modified by the context of the site. The data collection instruments at this initial stage of assessment remained the same. At one site, it was also necessary to perform a detailed task analysis, and that is included as part of the multimedia development documentation. Many of the separate activities were defined as a result of the proposal for federal funding, but would be similar for any project of this magnitude having a substantial research component.

Figure 1

Needs Assessment Process



The diagram shown in Figure 1 portrays the steps that were taken to not only collect the data needed for curriculum development, but to set the stage for implementation of the program. The six shaded boxes on the left-hand side indicate major steps in the sequence. The first three steps were executed before we had made any attempts at defining the context at any site. The first step, *Identify Parameters*, is by far the most conceptual of any step. In defining the Curriculum Concepts, our proposal called for the use of Whole Language concepts, Multimedia techniques, and some combination of the two across the three major sites. To these three curricular possibilities, we also added a Traditional component to catch issues not falling into other categories. Each site was to have a particular orientation, that is, one site would be primarily Whole Language, another primarily Multimedia, and the third to be a combination[1]. In order to accommodate these approaches to curriculum development, it was necessary that we specify the concepts that would permit the most advantageous testing for research comparison.

Another important step at this stage was to match the parameters to business needs which was generally performed during initial discussions with company representatives. There was no defined format for these discussions, but we wanted to make sure there was some link one or more business concerns. The data we collected was also to be tiered at three levels, the work area, the work process and the work output. Thus, our data needed to have focus where impact could be observed or measured. We also linked these parameters to overall project measures as defined in the proposal. Looking ahead to actual instruments, we also defined three targets for instruments: the employee, the supervisor, and an observation (as shown in the major process step #6). To manage interaction of the parameters, we created a *Data Gathering Matrix* (shown in Table 1) so that we could keep a big picture of what the end result needed to satisfy. This Data Gathering Matrix is described later.

[1] We are aware that presuming an instructional solution to problems we had yet to observe runs counter to the accepted practice of needs assessment. However, our proposal dictated that these three methods were to be used as described. While we began with this research orientation, the business issues we found resulted in modifying this "pure research" approach. Nonetheless, the requirements of testing Whole Language and Multimedia methods meant the parameters of these concepts had to taken into account for the needs assessment process, and the latter is still a justified reason for including concepts of these methods at an initial stage of the process.

Table 1 – Data Collection Matrix

	Data Gathered from the Instrument						
Instrument	Literacy Content	Target Audience Description	Contextual Description	Measures of Work Output & Productivity	Job Process	Job Tools & Resources	Instructional Environment
Employee Interview	Major focus (on the job use of reading, writing, listening speaking, mathematics)	Major focus (work experience, training experience)	Minor focus (perceptions of environmental support)		Major focus (general description)	Minor focus (obtain examples possible)	
Supervisor/Union Leader Interview	Major focus (perceptions of context needs & organizational problems)	Minor focus (general perceptions of employee back- grounds & characteristics)	Major focus (job pressures management & co-worker support, facilities, etc.)	Major focus (description of & issues related to products of target work area, issues related to interpretation of productivity measures)	Minor focus	Minor focus	Minor focus (identification of teaching area, contrast)
On-Site Observation	Minor focus (verification of previous data)		Major focus (physical facilities, environmental support, etc.)		Major focus (verification & or new data)	Major focus (verification & or new data)	Major focus (verification & or new data)

The Search Literature step was partially performed at the beginning of the project, but this step required reconfirming our results to date with published research. Some new information was found that we could incorporate into some portions of the instruments as well as in the process steps.

The third major step of *Matching Results to Parameters* included adding Federal Grant Requirements to the plan, and then constructing initial items for the three instruments. The entire project team prior to making an initial visit to our first selected site reviewed these documents.

The fourth step of *Defining Process and Sequence Steps for Sites* included more of an iterative process than we first thought. Before we conducted the needs assessment, we found that a number of visits to the sites were necessary. Since there was a long delay between the time initial information was gathered for proposal development and the time the project was funded, we found numerous changes in personnel as well as business issues. In reality, it was starting over again with identifying key personnel contacts. Another factor was that the people who wrote the proposal were not the staff who performed the site visits, and because some were less experienced with the workplace context, it was apparent that a considerable learning curve was needed. Finally, we found that a number of visits were necessary in order to build credibility so that frank discussions about business links and context of match for literacy instruction could occur. The major outcomes for this step included the identification of target employees and work areas for assessment, management - union constraints regarding data collection, and identification of "liaison" personnel who could assist us at this and later stages of the project.

The fifth step of *Constructing Pilot Instruments* occurred only the first time through the process and was taking place simultaneously with the previous step. This piloting followed a typical process with the exception of adding a final step to crosscheck our three instruments with the Data Gathering Matrix.

Following a short pilot test, the instruments were finalized in the sixth step and then used on a consistent basis for all sites. Only very minor modifications had to be made following their use at the first site. Very detailed instruments were developed for Employees (Appendix A), Supervisors (Appendix B), and Observation Checklist (Appendix C). The schedule for conducting the interviews included a mix of employees and supervisors, but the observation form was used only after the interviews were completed and a first pass at the analysis was performed.

About 20 to 25 individuals were interviewed at each site with 5 to 8 supervisors included. Persons were selected separately and jointly by union and management to be representative of either a potential target participant or one who would be knowledgeable and candid about issues in that work area or the facility in general. Employee interviews, while the number of questions appears large, typically lasted from 20 to 45 minutes. Supervisor interviews were generally 30 minutes and the Observation form took about 90 minutes to complete. Two staff used the observation form independently and then notes were compared in order to have one complete data set for each site. All data was entered into a customized database for review and analysis.

Employee Interview Instrument

Appendix A

11. Who do you work with? (Circle all responses)

(01) Alone (02) Co-workers (03) Supervisors (4) Engineers (5) Others

12. What are their job titles?

_____

_____

_____

13. What are their job titles?

_____

_____

14. What are their job titles?

_____

_____

15. Do any of the people you work with have difficulty speaking English because they learned a different language at home? (circle answer)

(01) yes (02) no

16. How many people?_____

17. What language(s) do they speak?_____

_____

18. Do you think this is typical of most areas here?

_____

19. What do you do on your job?

_____

_____

_____

20. On a normal day, how are directions given to you?

(1) Orally (2) Written (3) No directions given

21. Do you think this is typical?

(01) Yes (02) No

22. Any comments regarding the manner in which you get directions?

_____

23. On an average day, how frequently do you get **spoken** directions?

(0) never (1) one to two times (2) three to four times (3)five to six times

(4) seven or more

24. Comment

_____

25. On an average day, how frequently do you get **written** directions?

(0) never (1) one to two times (2) three to four times (3)five to six times

(4) seven or more

26. Comment

_____

27. On an average day, how frequently do you use forms?

(0) never (1) one to two times (2) three to four times (3)five to six times

(4) seven or more

28. Do you use tally sheets? (1) yes (2) no

29. Describe how you use them.

_____

30. Do you use check sheets? (1) yes (2) no

31. Describe how you use them.

_____

32. Do you use log books? (1) yes (2) no

33. Describe how you use them.

_____

34. Do you use charts or graphs? (1) yes (2) no

35. Describe how you use them.

_____

36. Do you use operator guides? (1) yes (2) no

37. Describe how you use them.

_____

38. Do you use any other kind of forms? (1) yes (2) no

39. Describe how you use it.

_____

40. Do you use any other kind of form? (1) yes (2) no

41. Describe how you use it.

_____

42. Do you use computer screens or terminals?

(01) yes (02) no

43. Where are the computer screens or terminals?

_____

44. How do you use the computer screens or terminals?_____

45. How often do you use computer screens or terminals on an average day?

(0) never (1) one to two times (2) three to four times (3) five to six times

(4) seven or more

46. Who do you contact if there is a breakdown or problem?

_____

_____

47. Who else do you contact if there is a breakdown or problem?

_____

48. How do you contact them?

(1) spoken (2) written (3) other

_____

49. Are any notations or written reports made?

(01) yes (02) no

50. Describe them_____

51. Are there any other reports that you need to complete?

(1) yes (2) no

52. Describe them_____

53. What types of tools and equipment do you use on your job? _____

Tools/Equipment	Description

54. How much difficulty do you feel your coworkers have using these tools or equipment?

(0) none (1) not much (2) a fair amount (3) a lot

55. What types of gauges or meters do you use?

_____

56. How much difficulty do you feel your coworkers have using these gauges and meters?

(0) none (1) not much (2) a fair amount (3) a lot

57. What types of computers and electronic equipment do you use?

_____

58. How much difficulty do you feel your coworkers have using these computers and electronic equipment?

(0) none (1) not much (2) a fair amount (3) a lot

59. How important is reading to your job?

(0) not at all (01) not much (02) a fair amount (03) a lot

60. Comments

_____

61. How frequently must you read on an average day?

(0) never (01) one to two times (02) three to four times (3) five to six times

(4) seven or more

62. What is it that you have to read that is most critical to getting the job done right?

_____

63. What do you do if you cannot read something?

_____

64. What happens if you miss read something?

_____

65. What type of math do you need to perform your job?_____

_____

66. What types of numbers do you add?

(0) none (1) whole numbers (2) fractions (3) decimals

67. What types of numbers do you subtract?

(0) none (1) whole numbers (2) fractions (3) decimals

68. What types of numbers do you multiply?

(0) none (1) whole numbers (2) fractions (3) decimals

69. What types of numbers do you divide?

(0) none (1) whole numbers (2) fractions (3) decimals

70. What types of numbers do you compare to each other ?

(0) none (1) whole numbers (2) fractions (3) decimals

71. What types of numbers do use in measuring?

(0) none (1) whole numbers (2) fractions (3) decimals

72. Do you use charting?

(1) yes (2) no

73. Describe

_____

74. Do you use graphing? (1) yes (2) no

75. Describe

_____

76. How frequently must you use math on an average day?

(0) never (01) one to two times (02) three to four times (3) five to six times
(4) seven or more

77. What do you do if you cannot add, multiply, divide or measure something?_____

78. What happens if you make a math mistake?

_____

79. In the average week, how often are you faced with a problem while you do your job?

(0) never (01) one to two times (02) three to four times (3) five to six times
(4) seven or more

80. Describe a typical or common problem.

_____

81. Describe the most recent problem you had to solve.

_____

82. Do you usually solve these types of problems alone or in a group?

(1) alone (2) group

83. How important is problem solving to your job?

(0) not at all (1) a little (2) average (3) very much so

84. Is there a difficult part of your job? (1) yes (2) no

85. Describe

_____

86. Did you have any training connected with this particular job? (1) yes (2) no

87. What training?

_____

88. When did it occur?

(0) none (1) at the very beginning of the job (2) every so often through out the years I've been here (3) quite frequently

89. Comments

_____

90. How was the training conducted? (Choose 2)

(1) individual (2) small group (3) large group (4) instructor led (5) computer based

(6) video (7) other

91. Comments

_____

92. In general, was the training you had helpful? (1) yes (2) no

93. Is there any other training you think would have been helpful to have had?

(1) yes (2) no

94. What is that training?

95. How did you learn to do your job?

(1) formal training (2) someone showed me (3) by myself (4) other

96. How are employees chosen for new job opportunities?

_____

97. Comment

_____

98. .How satisfied are you with your job? (circle answer)

(1) Very Satisfied
(2) Satisfied
(3) Somewhat Satisfied
(4) Somewhat Dissatisfied
(5) Dissatisfied
(6) Very Dissatisfied

_____

99. What could be done to make it easier for you to do your job?

Comments:_____

100. On average, how do you think most of your fellow workers feel about their jobs and/ or work here?

Comments:_____

101. How would you describe the relationship between your co workers and upper management?

(01) Poor (02) Fair (03) Good (04) Very Good (05) Excellent

Comments:_____

102. Do you feel you're good at what you do? (1) yes (2) no

103. Why?

_____

104. How is your job success measured? (what things are looked at to determine if you are good at your job)

_____

105. Is there anything else you would like to tell me about your job?

_____

106. What do you think should be taught in this educational program?

_____

107. I have asked a lot of questions; do you have any for me?

_____

THANK YOU !!!!!!

Supervisor Interview Instrument

Appendix B

Code__ __ __ __ __ Date_____ Start Time_____ End Time_____

1. What is your job title?_____

2. What are the primary responsibilities of your department?

_____

3. What are the measures of productivity in your area?

_____

4. How much of the work involves other departments or external customers?

_____

5. Has the company identified any productivity problems related to your area?

_____

6. How many people do you supervise in your area?

(0) none (1) one to two (2) three to four (3) five to six (4) seven or more

7. What are the job titles in your area?_____

8. Number in this classification

(0) none (1) one to two (2) three to four (3) five to six (4) seven or more

9. What are the job titles in your area?_____

10. Number in this classification

(0) none (1) one to two (2) three to four (3) five to six (4) seven or more

11. What are the job titles in your area?_____

12. Number in this classification.

(0) none (1) one to two (2) three to four (3) five to six (4) seven or more

13. What is the typical work experience in your area?

_____

14. Do any of the people you work with have difficulty speaking English because they learned a different language at home? (circle answer)

(1) Yes (2) No

15. Is this typical of most areas here? (circle answer)

(1) Yes (2) No

16. Comments: _____

_____

17. On a normal day, how do you give directions to the people you supervise?

(1) Orally (2) Written (3) No directions given

18. Do you think this is typical?

(1) yes (2) No

19. On an average day, how frequently do you give spoken directions?

(0) never (1) one to two (2) three to four (3) five to six (4) seven or more

20. Comment

_____

21. How critical are these spoken directions?

(0) not at all (1) a little (2) average (3) very much so

22. On an average day, how frequently do you give written directions?

(0) never (1) one to two (2) three to four (3) five to six (4) seven or more

23. Comment

_____

24. How critical are these written directions?

(0) not at all (1) a little (2) average (3) very much so

25. Is there any difference in this communication when there's a breakdown or material problem?

---

26. What tools and equipment do your employees have problems with?

---

27. On an average week how frequent are those problems?

(0) never (1) one to two (2) three to four (3) five to six (4) seven or more

28. How critical are these problems?

(0) not at all (1) a little (2) average (3) very much so

29. How does this impact productivity?

---

30. Do you think your employees have adequate tools and resources to get the job done?
(circle answer)

(1) Yes (2) No

31. Comments:_____

32. Describe situations involving math that employees seem to have difficulty with.

---

33. On an average week, how frequent are those math problems?

(0) never (1) one to two (2) three to four (3) five to six (4) seven or more

34. How critical are these math problems?

(0) not at all (1) a little (2) average (3) very much so

35. What impact do these math difficulties have on productivity?

---

36. What kind of math do employees need to know?

---

37. Describe any situations involving reading that your employees have problems with.

---

38. On an average week how frequent are those reading problems?

(0) never (1) one to two (2) three to four (3) five to six (4) seven or more

39. How critical are these reading problems?

(0) not at all (1) a little (2) average (3) very much so

40. What impact do these reading difficulties have on productivity?

---

41. Describe any situations involving problem solving that your employees have problems.

---

42. On an average week how frequent are these problem solving problems?

(0) never (1) one to two (2) three to four (3) five to six times (4) seven or more

43. How critical are these problem solving problems?

(0) not at all (1) a little (2) average (3) very much so

44. What impact do these problem solving difficulties have on productivity?

---

45. What kind of problem solving skills do employees need to have?

---

46. Is there any training provided for your employees? (1) Yes (2) No

47. What training?

_____

48. When does it occur?
(0) None (1) at the very beginning of the job

(2) every so often through out the years they have been here (3) quite frequently

49. Comments_____

50. How is the training conducted?

(1) individual (2) small group (3) large group (4) instructor led (5) computer based

(6) video (7) other

51.
Comments._____

_____

52. Is there any other training you think that would have been helpful for your employees to have had?

(1)Yes (2) No

53. What is that training?

_____

54. How do your employees learn to do their jobs?

(1) Formal training (2) somebody showed them (3) by themselves (4) other

55. How are employees chosen for new job opportunities?

_____

56. Comments

_____

57. Describe charges in the next 2 years that may require employees to use higher level skills.

_____

58. How satisfied are your employees with their job? (circle answer)

(1) Very Satisfied
(2) Satisfied
(3) Somewhat Satisfied
(4) Somewhat Dissatisfied
(5) Dissatisfied
(6) Very Dissatisfied

59. Comments:_____

60. How satisfied are supervisors with their jobs? (circle answer)

(1) Very Satisfied
(2) Satisfied
(3) Somewhat Satisfied
(4) Somewhat Dissatisfied
(5) Dissatisfied
(6) Very Dissatisfied

61. Comments:_____

62. What could the company do to make it easier for you to do your job?

_____

63. How would you describe the relationship between other supervisors and the employees?

(01) Poor (2) Fair (3) Good (4) Very Good (5) Excellent

64. Comments _____

65. What do you think should be taught in this educational program?

_____

_____

66. I have asked a lot of questions. Do you have any questions for me?

_____

Thank You!

Observation Checklist

Appendix C

Code_ _ _ _ _ Date_____ Start Time_____ End Time_____

Contextual Description

1. What is the physical environment of the workplace in general?

   A. Clean (01) or Dirty (02)?_____

   B. Quiet (01) or Noisy (02)?_____

   C. Ventilation - Good (01) or Bad (02)?_____

   D. Lighting - Good (01) or Bad (02)?_____

   E. Temperature - Too Hot (01), Just Right (02), or Too Cold (03)?_____

   F. Vandalism/Graffiti - Yes (01) or No (02)?_____

   G. What furnishings are used by employees?

   _____

   H. What personalization of employee work areas exist?

   _____

   I. What is the overall atmosphere of the plant?

   _____

   J. Draw a physical map of the workplace and attach to form.

   K. Comments:_____

   _____

2. What is the physical environment of the individual work areas or lines?

   A. Clean (01) or Dirty (02)?_____

   B. Quiet (01) or Noisy (02)?_____

   C. Ventilation - Good (01) or Bad (02)?_____

   D. Lighting - Good (01) or Bad (02)?_____

   E. Temperature - Too Hot (01), Just Right (02), or Too Cold (03)?_____

F. Vandalism/Graffiti - Yes (01) or No (02)?_____

G. What furnishings are used by employees?

_____

H. What personalization of employee work areas exist?

_____

I. What is the overall atmosphere of the plant?

_____

J. Comments:_____

Job Process

3. What interaction/communication does the worker have with...

Frequency Codes: 01-Frequent, 02-Infrequent, 03-Not at all
Criticality Codes: 01-Very Critical, 02-Critical, 03-Less Critical

	Verbal		**Non-verbal**		**Written**	
Person	**Frequency**	**Criticality**	**Frequency**	**Criticality**	**Frequency**	**Criticality**
01 Supervisor						
02 Co-worker						
03 Clients						
04 Vendors						
05 Front Office						
06 Others						

3A. Comments:_____

4. What is the reaction of the workers to the observers? (circle answer)

01-Friendly 02-Open 03-Suspicious 04-Nervous
05-Relaxed

5. Does the worker have suggestions to improve the job process? (circle answer)

01-No (Skip to 6) 02-Yes

5A. Has the worker communicated the suggestions? (circle answer)

01-No (Skip to 6) 02-Yes

5B. How has the worker communicated the suggestions?

_____

5C. To whom were the suggestions communicated?

_____

5D. What action was taken on the suggestions?

_____

Print Environment

6. What print material is present in the plant in general?

A. Bulletin Boards - Yes (01) or No (02)?_____

B. Newspapers - Yes (01) or No (02)?_____

C. Safety Signs - Yes (01) or No (02)?_____

D. What signs are present?_____

E. What notices or announcements are present_____

F. Comments:_____

7. What print materials are at the work stations?

A. Preventative Maintenance Notices - Yes (01) or No (02)?_____

B. Safety Signs - Yes (01) or No (02)?_____

C. Books or Manuals - Yes (01) or No (02)?_____

D. Tally Sheets - Yes (01) or No (02)?_____

E. Tags in Baskets - Yes (01) or No (02)?_____

F. Comments:_____

8. Is there any indication the worker avoids reading? (circle answer)

01-No (Skip to 9) 02-Yes

8A. What are the indications?_____

_____

9. What documents have to be read?
Frequency Codes: 01-Frequent, 02-Infrequent, 03-Not at all
Criticality Codes: 01-Very Critical, 02-Critical, 03-Less Critical

Document	Frequency	Criticality
01 Tally Sheets		
02 Downtime Sheets		
03 Rejection Tags/Red Tags		
04 Memos		
05 Alerts		
06 Manuals		
07 Logbooks		
08 Other:		
08 Other		
08 Other:		

9A. Comments:_____

10. What documents have to be filled out or written?

Frequency Codes: 01-Frequent, 02-Infrequent, 03-Not at all
Criticality Codes: 01-Very Critical, 02-Critical, 03-Less Critical

Document	Frequency	Criticality
01 Tally Sheets		
02 Downtime Sheets		

Document	Frequency	Criticality
03 Rejection Tags/Red Tags		
04 Memos		
05 Alerts		
06 Manuals		
07 Logbooks		
08 Other:		
08 Other		
08 Other:		

10A. Comments:_____

11. What math computations are performed on the job?

Frequency Codes: 01-Frequent, 02-Infrequent, 03-Not at all
Criticality Codes: 01-Very Critical, 02-Critical, 03-Less Critical

Math	Frequency	Criticality
01 Addition		
02 Subtraction		
03 Multiplication		
04 Division		
05 Fractions		
06 Decimals		
07 Averaging		
08 SPC Charting		
09 Graphing		
10 Measurements		
11 Other:		
11 Other:		

11A. Comments:_____

_____

12. What tools are used on the jobs observed?

Frequency Codes: 01-Frequent, 02-Infrequent, 03-Not at all
Criticality Codes: 01-Very Critical, 02-Critical, 03-Less Critical

Tools	Frequency	Criticality
01 Screw drivers		
02 Hammers		
03 Check Fixtures		
04 Other:		
04 Other:		
04 Other		
04 Other		

12A. Comments:_____

_____

13. Do tools belong to the individual or company? (circle answer)

01-Individual 02-Company

13A. Comments:_____

14. Are there adequate tools to do the job? (circle answer)

01-No (Skip to 15) 02-Yes

14A. What tools are needed?_____

15. Are the tools organized so they're readily available? (circle answer)

01-No 02-Yes

15A. Comments:_____

16. What materials are used?_____

_____

17. Are materials available in a timely manner? (circle answer)

01-No 02-Yes

17A. Comments:_____

18. When are the materials used? (circle answer)

01-Before 02-During 03-After

18A. Comments:_____

_____

19. Are there any hazardous materials? (circle answer)

01-No (Skip to 20) 02-Yes

19A. What types of hazardous materials_____

20. Does the worker have any control over the use of tools or materials? (circle answer)

01-No 02-Yes

20A. Comments:_____

Instructional Environment

21. Describe the instructional environment.

A. Size of room:_____

B. Tables:_____

C. Electrical outlets:_____

D. Storage:_____

E. Lighting:_____

F. Accessibility:_____

G. Areas of privacy:_____

H. Noise:_____

I. Temperature:_____

J. Ventilation:_____

K. Bulletin Boards:_____

L. Chalkboards:_____

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