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ABSTRACT

This study was conducted to assess how the Hartford Area Vocational Center could work with area employers to increase the occupational skill readiness of currently employed workers. A total of 1,381 employers in Vermont and New Hampshire were surveyed through a mailed questionnaire, with a return rate of 518 employers (38 percent). Most employed 10 persons or fewer. The study found that most employers responding to the survey appeared to be heavily involved in training and/or retraining of currently employed workers. Of the 306 respondents who identified the types of training programs they conducted, 272 (89 percent) used on-the-job training. Employers also revealed that on-the-job training was often supplemented with orientation, self-directed learning packets, technical workshops, employer-based apprenticeship, and factory/commercial training courses. Employers also seemed very interested in identifying additional training opportunities for their employees. As a result of the study the following actions were taken: (1) an adult education advisory committee was established at the Hartford Center, and (2) a plan was developed for offering skill development services in addition to the employee training activities provided by area employers. A copy of the survey is included. (KC)

Surveying Private-Sector Employers To Identify Labor Training Needs

By

James R. Frasier

Paper Prepared for Presentation at The

American Educational Research Association Annual Meeting

Chicago, Illinois

March 31, 1985

Establishing linkages with business and industry to find ways of training an emerging work force and retraining individuals who are already in the labor force has surfaced as a high priority item for the vocational education community in the 1980^{s}. How well these linkages are developed between public education and the private sector will vary by business, within communities, and across the nation.

Recognizing the need for current information about the training needs of individuals in the Vermont labor force and a state-wide need of adult vocational education programs to assess employer training needs (Harris & Rocklin, 1984), the Vermont Division of Adult and Vocational-Technical Education funded an employer survey project proposed by the Hartford Area Vocational Center of White River Junction, Vermont. In the spring of 1984, working in consultation with the Center of Evaluation and Policy Research at the University of Vermont, the Hartford Area Vocational Center designed and implemented a Business and Industry Survey.

Purpose

The overall purpose of the study was to assess how the Hartford Area Vocational Center could work with area employers to increase the occupational skill readiness of currently employed workers. The study sought to

(a) determine the nature and degree of employer involvement in the training and/or retraining of currently employed workers, and (b) ascertain whether the Hartford Area Vocational Center should offer skill development services in addition to the employee training activities provided by area employers.

Method

Sample

All private and public sector employers located within a 20 mile radius of the Hartford Area Vocational Center formed the study target group. A total of 1381 employers were surveyed; 738 in Vermont, and 643 in New Hampshire.

The Vermont employer sample was identified from a listing of Unemployment Compensation Insurance contributors registered with the State Department of Employment Security. The New Hampshire employer sample was generated from the local telephone directory "Yellow Pages" because state statutes prohibited the release of employer names contributing to Unemployment Compensation Insurance.

Design of Instrument

A two-step process was used to design the survey instrument. First, a Survey Planning Committee composed of representatives from 20 area business, industry, and educational service providers was convened to assist the project staff in design and development of the survey.

Second, using information gained from the Survey Planning Committee, potential employee training needs were delineated using an occupational group and skill clustering format adapted from Chrismer (1979).

Validation of Instrument

Internal and external review procedures adapted from Sanders and Cunningham (1973) were used in the development of the survey instrument (see Attachment A). An internal review of the instrument was conducted by selected members of the Hartford Area Vocational Center faculty who had expertise in one or more targeted skill clusters. The first of two external reviews was conducted by individuals at the for Evaluation and Policy Research at the University of Vermont, and the second by the Survey Planning Committee's full membership.

Throughout the internal and external review process, each individual was given the same set of instructions for reviewing the survey instrument. Individuals were requested to critically review and comment on the appropriateness of: a) demographic information (e.g. name of firm, number of employees), b) general information questions (e.g. types of employee training programs), c) occupational groupings (e.g. welding, graphics) in relation to local employment opportunities, d) skills listed under

each occupational grouping (e.g. Mig, Tig, Arc, Spot for the Welding occupational group), and e) the survey format.

Data Collection

A mail survey was used to collect information about the training needs of currently employed workers. Three weeks after the first mailing, a second mailing to non-respondents was conducted. Each mailing included an addressed, postage-paid, envelop for respondent convenience in returning the instrument.

To increase employer awareness about the survey, a 30 second informational spot was aired by three area radio stations 10 days prior to the first mailing and gradually increased to 12 times each day immediately before the survey was mailed. In addition, one day after the survey was mailed, a local newspaper and one state-wide newspaper each carried an article about the Business and Industry Survey.

Data Analysis

Respondent survey instruments were compiled on an IBM PC using the pfs: report and pfs: file programs. The data base was organized to tabulate the frequency of training need by individual employer and/or all employers for each occupational skill listed in the survey. In addition, the data base was designed to manipulate:

1. Search and retrieval of each firm's survey results;
2. Search and retrieval of firms indicating combinations of training needs;
3. Production of mailing labels for each firm and/or combinations of firms indicating specific training needs;
4. Production of a personal letter, using the pfs: write program, for each firm and/or combinations of firms indicating specific training needs; and
5. Search and retrieval of a group of firms sorted by type of industry, type of firm training program, or other variable.

Respondent identification of specific skill training needs in the space designated as "other" and training course suggestions were recorded by firm. This listing was used to supplement the analysis of each respondent's employee training needs.

Results

Survey instruments were received from 518 employers of the 1381 surveyed . . . a response rate of 38%. Instruments were received from 415 firms with less than 10 employees, 62 firms with 11-50 employees, and 26 firms with 51 or more employees. Fifteen respondents did not indicate the number of individuals employed.

Three major groups of survey instruments were received from sample employers: a) firms that generally interpreted the instrument correctly by entering numbers of employers in the appropriate space (326 respondents), b) firms that merely checked a space for training needs rather than entering a number (75 respondents), and c) firms that gave no response to training needs but returned the survey with demographic information (117 respondents).

To facilitate clarity in the reporting of data analysis findings, respondents who generally interpreted the instrument correctly, and respondents who merely checked a space for training needs (assigned a numerical value of one for data entry purposes), were combined into a single category titled "Firms Identifying Training Needs" (FITN's).

Of the 401 FITN's, 306 revealed they had training programs for employees. The most common types of training programs conducted by these firms were "Orientation" and "On-the-Job" (see Table 1).

About 41% of the FITN's (163 of 401 firms) disclosed they owned or leased a computer. When asked whether they would respond to a survey about computers and the computer training needs of their employees, 108 of the 163 firms (66%) answered in the affirmative.

Table 1

Types of training conducted by respondent firms

Type of training	Firms (N=306)	%
On-the-job	267	89
Orientation	121	40
Technical Workshops	73	24
Self-directed learning packets	40	13
Apprenticeship (employer-based)	39	13
Factory/commercial training courses	36	12
Apprenticeship (state-based)	19	6

In response to the question: "Would your firm like to receive a quarterly publication that lists adult training programs, courses, and workshops available to area residents, 263 of 401 firms (66%) indicated they would like to receive such a publication.

The occupational groupings common to most employers (e.g. mathematics, communications, retail services) triggered the highest frequency of employee training needs across FITN's (see Table 2). The frequency of employee training needs by industry-specific occupational grouping (e.g. Food Services, Welding, Drafting, Robotics) is shown in Tables 3 and 4.

Many FITN's wrote comments on the instruments related to information requested. Forty-three identified specific training programs conducted by their firm to meet employee training needs. Nineteen indicated they were in the process of purchasing a computer. FITN's also offered 103 additional types of occupational training course suggestions, and 57 FITN's identified training programs of highest priority to them as employers.

A telephone survey of 20 randomly selected non-respondents revealed that firms did not return the Survey for the following reasons: (a) 8 believed their training needs were too specialized and could not be met by the Center; (b) 6 stated their firm employed 1 or 2

Table 2

Employee training needs common across respondent firms

Employee training need	Number of firms	Number of employees
Mathematics		
Basic math	27	518
General math	32	309
Business math	51	140
Algebra	6	22
Geometry	6	23
Trigonometry	4	14
Communications		
Basic reading skills	30	291
Telephone etiquette	126	495
Basic grammara, speech,etc.	46	273
Report writing	54	230
Letter writing	85	252
Interpersonal relations	74	450
Office/Clerical		
Accounting principles	124	229
Bookkeeping procedures	136	240
Money & Banking procedures	73	212
Introduction to typing	41	117
Advanced typing	43	146
Employer/Employee relations	62	108
Office/Computers		
Personal computer operations	67	232
Business computer operations	138	369
Word processing operations	87	235
Accounting operations	110	219
Bookkeeping operations	111	218
Data entry operations	63	169
Retail Services		
Sales techniques	107	364
Marketing	104	225
Customer service	101	503
Customer relations	115	508
Store advertising & display	71	175
Radio/TV/Newspaper advert.	87	159
Supervisory/Management		
Employee relations	135	388
Employee supervision	163	468
Employee training	98	249
Employee evaluation	127	391

Table 3

Employee training needs by industry-specific occupational group

Employee training need	Number of firms	Number of employees
Food services		
Waiter/Waitress techniques	20	164
Food/Beverage Regulations	19	109
Portion/Cost control	26	123
Culinary terms/applications	12	27
Basic baking skills	17	50
Basic food prep techniques	19	71
Graphic Arts		
Sales/Client development	8	19
Customer relations/service	10	25
Computer typesetting skills	12	20
Layout/Design	21	32
Offset printing techniques	10	27
Darkroom/Stripping	7	11
Auto Body		
Cost effective estimating	15	27
Glass installation	5	11
Basic frame straightening	10	16
Surface preparation	8	13
Painting theory/techniques	9	15
Fiberglass panel repair	7	14
Welding		
Mig	15	33
Tig	9	24
Arc	28	64
Ox-Acetylene/Mappe	25	50
Plasma	4	13
Spot	4	8
Blueprint Reading		
Architectural	29	63
Machine	8	38
Electrical/Electronic	26	70
Jigs and fixtures	3	18
Sheet metal	6	15
Fluidics-Pneumatics	2	10
Drafting		
Mechanical	11	36
Architectural	13	20
Computer-Aided Design CCAD)	7	15
Detailing machine & Tool	2	8
Design, machine & Tool	4	11
Descriptive geometry	6	23

Table 4

Employee training needs by industry-specific occupational group

Employee training need	Number of firms	Number of employees
Machining		
Shop mathematics	14	351
Operational procedures	6	243
Machine operation and set-up	9	154
Computer-Aided machining (CAM)	4	27
Material/Equip/Prod cost control	7	19
Robotics		
Design	6	10
Programming	8	17
Servicing (mechanical)	9	15
Servicing (electrical)	7	12
Mechanics		
Gas:Theory/Principles	11	27
Diesel: Theory/Principles	16	32
Diagnostic techniques	13	34
Hydraulics		
Fundamentals	17	44
Pumps, valves, controls	22	60
Circuits	10	39
Equipment maintenance	15	63
Electricity - Electronics		
Resid./Comm. Electricity	22	62
DC &AC fundamentals	24	59
Motors, generators, controllers	21	62
Elect. equipment maintenance	26	70
Electronic equip. service	19	56
Basic electronics	22	60
Computer electronics	16	38
Electrical/electronic specifications for the purchasing agent	5	13
Computer: Design/Service		
Digital circuitry design	5	9
Memory subsystem design	3	7
Computer servicing	8	22
Peripheral servicing	6	13
Programming	18	40

individuals and they didn't need help from the Center; (c) 5 disclosed they just forgot to "do it"; and (d) 1 indicated it could not remember having received a Survey from the Center.

Conclusions

Most employers responding to the survey appeared to be heavily involved in training and/or retraining of currently employed workers. Of the 306 respondents who identified the types of training programs they conducted, 272 (89%) utilized on-the-job training. Employers also revealed that on-the-job training was often supplemented with orientation, self-directed learning packets, technical workshops, employer-based apprenticeship, and factory/commercial training courses. Only 6% (19 of 306 employers) indicated that they utilized state-based apprenticeship training programs.

Employers also seemed very interested in identifying additional training opportunities for their employees. Of the 518 survey respondents, 396 (76%) revealed that many employees could benefit from skill development courses in addition to those provided by the employer. Almost two-thirds of the respondents indicated that they were interested in receiving a quarterly publication about training programs available to area residents.

Follow-up Activities

Study results were shared and discussed with the Survey Planning Committee in August of 1984. At the recommendation of the Survey Planning Committee, the Center Director (a) sent a personal letter acknowledging receipt of the Survey to all respondents, (b) established an Adult Education Advisory Committee, and (c) developed a plan for offering skill development services in addition to the employee training activities provided by area employers.

To increase the skill readiness of currently employed workers, the Center has developed the posture of a "facilitator" for training opportunities. During the 1984-85 school year, the Center utilized the following formats to effect the delivery of adult occupational skill development services:

- Contracting with public and/or private education providers (e.g. the University of Vermont Continuing Education Service Center to provide a one-day seminar on "The Art of Effective Delegation").

- Subcontracting training courses to private industry (e.g. New England Telephone to conduct training sessions in "Telephone Etiquette").

- Connecting private businesses with state funding sources (e.g. Survey respondents who had indicated they wanted training in "Robotics" were introduced to representatives from the Vermont State Agency of Community Development which ultimately funded a 14 month course on "Robotics").

- Funding employer's requests for training through State Vocational Education grants (e.g. Center staff wrote a grant to train single head of households for employment as Nurse's Assistants).

Discussion

Most respondents seemed to take particular care when identifying their employee training needs. Respondents clearly revealed that employees could benefit from additional training in virtually all of the listed skills and many volunteered additional training needs not provided in the instrument. This response appeared to suggest the Center had indeed undertaken an appropriate inquiry within the private business sector.

Of particular note, 80% of the 518 respondents (415 firms) employed less than 10 workers. From a program planning perspective, this heavy response rate from small businesses should be especially encouraging to the Center. Since small firms often lack sufficient resourses and/or

staff for occupational skill enrichment activities beyond on-the-job training, these employers would be most likely to utilize employee training opportunities available through other institutions. By combining the Survey's across employer training need data base with the IBM pfs:write program, training opportunities can be promoted on a personalized basis to respondents and, consequently, appreciably increase potential training enrollment rates.

Although the Business and Industry Survey developed for this study would appear to be readily usable in other localities, local vocational education providers should be careful to revalidate the survey instrument. Particular attention should be given to involvement of business and industry representatives in the development of general information questions, identification of occupational groupings, and delineation of skills under each occupational grouping.

References

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ATTACHMENT A

Business

and

Industry Survey

This survey is being conducted by the
Hartford Area Vocational Center.
The results will be used to develop
future adult occupational skill programs.

Your response will be treated as confidential.
The only identification of your firm will be
as one that cooperated in the study.

Joseph Silver, Director
Hartford Area Vocational Center
White River Junction. Vermont 05001
(802) 295-8630

Business and Industry Survey

PLEASE PRINT:

Name of Firm _____

Mailing Address _____

_____ State _____ Zip _____

Telephone Number _____

Survey Completed by (Name/Title) _____

Type of Business _____

How many employees do you have (check one): ☐ 1-10 ☐ 11-50 ☐ 51 or more.

1 a. Does your firm have any training programs for employees? ☐Yes ☐No

b. If yes, what types of training programs are conducted (check all that apply):

☐Orientation
☐Self-directed learning packets
☐Factory/commercial training courses
☐Technical workshops
☐On-the-job
☐Apprenticeship (employer-based)
☐Apprenticeship (state-based)
☐Other (specify): _____

2 a. Does your firm own or lease a computer? ☐Yes ☐No

b. If yes, would you respond to a survey about computers and the computer training needs of your employees? ☐Yes ☐No

3 Would your firm like to receive a quarterly publication that lists adult training programs, courses/ workshops available to residents of the Upper Valley Region? ☐Yes ☐No

4 Some of the following occupational groupings and skill areas may or may not apply to your firm. If a grouping does apply, please indicate the number of your employees that you think would benefit from skill development courses *in addition to* those training programs conducted by your firm.

EXAMPLE

MATHEMATICS
1.___ Basic math for _____
2. 9 General math for Auto Mechanics
3. 1 Business math for Auto Salesman
etc....

COMMUNICATIONS
1.___ Basic reading skills
2. 4 Telephone etiquette
3. 1 Basic grammar, speech, etc.
etc....

Mathematics

1.____ Basic math for _____
2.____ General math for _____
3.____ Business math for _____
4.____ Algebra for _____
5.____ Geometry for _____
6.____ Trigonometry for _____
7.____ Other (specify): _____

Communications

1.____ Basic reading skills
2.____ Telephone etiquette
3.____ Basic grammar, speech, etc.
4.____ Report writing
5.____ Letter writing
6.____ Interpersonal relations
7.____ Other (specify): _____

Office/Clerical

1.____ Accounting principles
2.____ Bookkeeping procedures
3.____ Money & Banking procedures
4.____ Introduction to typing
5.____ Advanced typing
6.____ Employer/Employee insurance
7.____ Other (specify): _____

Office/Computers

1.____ Personal computer operations
2.____ Business computer operations
3.____ Word processing operations
4.____ Accounting operations
5.____ Bookkeeping operations
6.____ Data entry operations
7.____ Other (specify): _____

Retail Services

1.____ Sales techniques
2.____ Marketing
3.____ Customer service
4.____ Customer relations
5.____ Store advertising & display
6.____ Radio/TV/Newspaper advertising
7.____ Other (specify): _____

Supervisory/Management

1.____ Employee relations
2.____ Employee supervision
3.____ Employee training
4.____ Employee evaluation
5.____ Other (specify): _____
_____
_____

Comments: _____

Food Services

1.____ Waiter/Waitress techniques
2.____ Food/Beverage regulations
3.____ Portion/Cost control
4.____ Culinary terms/applications
5.____ Basic baking skills
6.____ Basic food preparation techniques
7.____ Other (specify): _____

Graphic Arts

1.____ Sales/Client Development
2.____ Customer relations/service
3.____ Computer typesetting skills
4.____ Layout/Design
5.____ Offset printing techniques
6.____ Darkroom/Stripping
7.____ Other (specify): _____

Auto Body

1.____ Cost effective estimating
2.____ Glass installation
3.____ Basic frame straightening
4.____ Surface preparation
5.____ Painting theory/techniques
6.____ Fiberglass panel repair
7.____ Other (specify): _____

Welding

1.____ Mig
2.____ Tig
3.____ Arc
4.____ Ox-Acetylene/Mappe
5.____ Plasma
6.____ Spot
7.____ Other (specify): _____

Comments: _____

Blueprint Reading

1.____ Architectural
2.____ Machine
3.____ Electrical/Electronic
4.____ Jigs and fixtures
5.____ Sheet metal
6.____ Fluidics—Pneumatics
7.____ Other (specify): _____

Drafting

1.____ Mechanical
2.____ Architectural
3.____ Computer-Aided Design (CAD)
4.____ Detailing, machine & tool
5.____ Design, machine & tool
6.____ Descriptive Geometry
7.____ Other (specify): _____

Machining

1.____ Shop mathematics
2.____ Operational procedures
3.____ Machine operation and set-up
4.____ Computer-Aided Machining (CAM)
5.____ Material/Equip/Prod cost control
6.____ Other (specify): _____

Robotics

1.____ Design
2.____ Programming
3.____ Servicing (mechanical)
4.____ Servicing (electrical)
5.____ Other (specify): _____

Mechanics

1.____ Gas: Theory/Principles
2.____ Diesel: Theory/Principles
3.____ Diagnostic techniques
4.____ Other (specify): _____

Hydraulics

1.____ Fundamentals
2.____ Pumps, valves, controls
3.____ Circuits
4.____ Equipment maintenance
5.____ Other (specify): _____

Electricity - Electronics

1.____ Residential/commercial electricity
2.____ DC & AC fundamentals
3.____ Motors, generators, controllers
4.____ Electrical equipment maintenance
5.____ Electronic equipment service
6.____ Basic electronics
7.____ Computer electronics
8.____ Electrical/electronic specifications for the purchasing agent
9.____ Other (specify): _____

Computer: Design/Service

1.____ Digital circuitry design
2.____ Memory subsystem design
3.____ Computer servicing
4.____ Peripheral servicing
5.____ Programming
6.____ Other (specify): _____

Comments: _____

Other Training Course Suggestions:

1.____ _____

2.____ _____

3.____ _____

Of the items you have identified in this survey, are each of equal importance to you in terms of your employee training needs? ☐Yes ☐No

If not, please identify those training programs of highest priority to you as an employer:

_____