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BACK TO BASICS IN TRAINING WORKERS

On-the-job courses in math, reading can boost productivity and self-esteem, many NE Ohio companies report

By SANDRA LIVINGSTON
PLAIN DEALER REPORTER

When Vaughn Denison's children were young, he turned down their entreaties to help out in classrooms and keep score at school baseball games. He didn't tell them why.

He likewise didn't seek promotions at Zircoa Inc., the small manufacturing plant in Solon where he has worked for 17 years.

The reasons were the same. He dropped out of school in ninth grade and couldn't read — not children's books, the names of the players on his son's baseball team or the job descriptions Zircoa posted to fill openings.

Yet he was a good and dedicated worker. He knew how to turn zirconium oxide into Zircoa's industrial products. He also knew how to compensate and carried a hand-made dictionary to check words like "work" that he needed to write on the job.

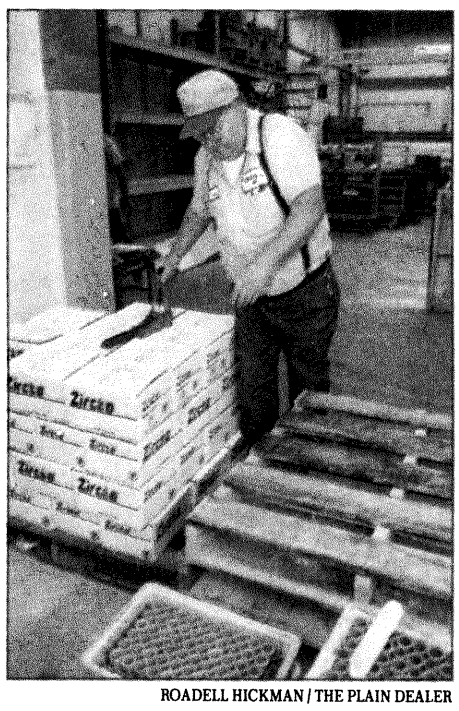
About four years ago, Denison told plant manager Scott Abel he needed help.

Zircoa had already provided classes to improve workers' reading and math skills, but Denison needed a different kind of help. Abel didn't hesitate. The company gave Denison nearly a year of on-site, one-on-one tutoring with a professional teacher.

"It opened up a whole new world for me," said Denison, 58.

Literacy experts say companies can realize significant gains from basic-skills training, but not enough are like Zircoa, willing to give workers time away from their machines for classes in phonics and fractions.

Yet the social and economic cost can be enormous. The Indiana Literacy Foundation estimates that low literacy costs the nation $225 billion annually in workplace accidents, lower productivity and lost tax revenues. Workers with low skills can be insecure, afraid of change, afraid of being found out and reluctant to offer ideas, work in teams or take on added responsibility. They may also lack the foundation for computer and other training essential in today's workplace.



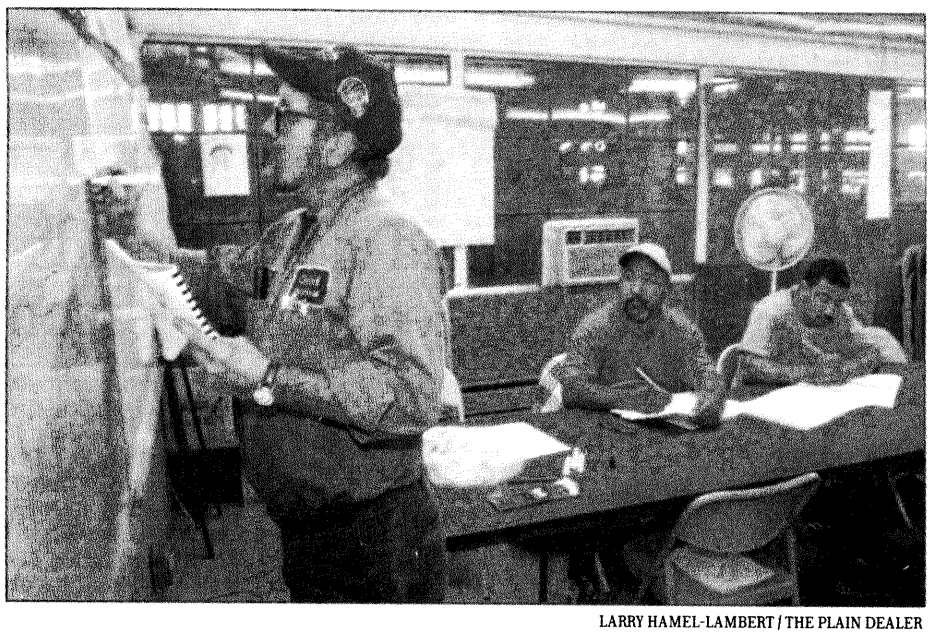
ROADELL HICKMAN / THE PLAIN DEALER

Vaughn Denison said he probably had a second-grade reading level when he asked his employer, Zircoa Inc., for help about four years ago. Now he's an avid reader, hoping to get his high-school equivalency diploma in the spring.

It's not just high-school dropouts who lack skills. Graduates, as well, may be short on the basics.

"On average, 33 percent of the average work force reads below the ninth-grade level," said Carole Richards, founder and president of North Coast Education Services in Chagrin Falls.

SEE TRAIN/4-H



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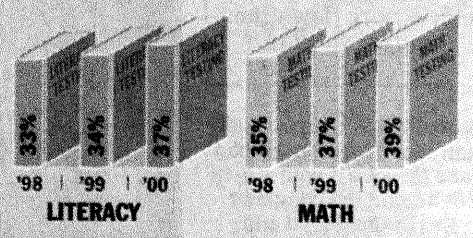
Cleveland Track Material Inc. has provided basic skills training to its workers for several years. Earl Webb, a supervisor at the company's Central Ave. plant, worked on a math problem during a recent class. Seated behind him were co-workers Nelson Ortiz and Gilberto Torres.

Millions can't read this

In the 2000 American Management Association survey, 43 percent of responding firms said they test job applicants for basic literacy and/or math skills

EMPLOYERS WHO TEST

The percentage of employers who test job applicants is growing.



DEFICIENCY RATE

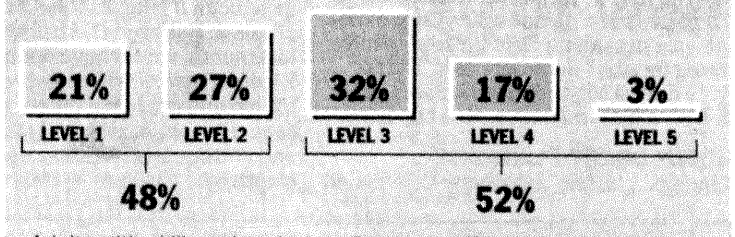
The deficiency rate is the share of applicants tested who lacked the skills necessary to perform the jobs they sought. It rose slightly in 1999 and sharply in 1998.

YEAR TESTED	FOUND DEFICIENT		APPLICANTS TESTED		DEFICIENCY RATE
1997	37,965	/	166,506	=	22.8%
1998	58,867	/	165,684	=	35.5%
1999	93,488	/	243,923	=	38.3%
BREAKDOWN FOR 1999					
Manufacturing	33,244	/	79,629	=	41.7%
Financial services	4,213	/	12,232	=	34.4%
Wholesale and retail	4,291	/	9,171	=	46.8%
Business/professional services	1,668	/	7,996	=	20.1%
Other services	49,893	/	133,726	=	37.3%

SOURCE: 2000 American Management Association Survey of 2,133 human resource managers. Breakdown does not include all categories.

RATING LITERACY

The 1992 National Adult Literacy Survey, considered the best survey estimating adult literacy, classifies results into five levels. Here are the findings for prose literacy. (Findings in document literacy and quantitative literacy were virtually the same.)



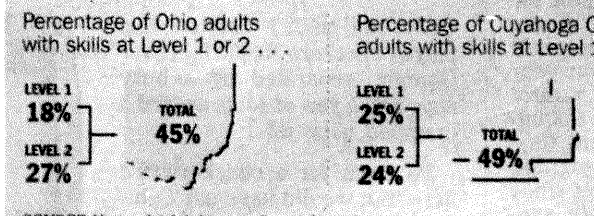
Adults with skills at Levels 1 or 2 lack a sufficient foundation of basic skills to function successfully in society.

LEVEL 1: Can read a little but not well enough to fill out an application, read a food label or read a simple story to a child.

LEVEL 2: Usually can perform more complex tasks such as comparing, contrasting or integrating pieces of information but lack higher-level reading and problem-solving skills.

LEVELS 3-5: Usually can perform more complex tasks on increasingly lengthy and dense texts and documents.

LOCAL LITERACY



SOURCE: National Adult Literacy Survey (1992)

THE PLAIN DEALER

Report card: 9 area companies' experience with skill training

By SANDRA LIVINGSTON
PLAIN DEALER REPORTER

A just-reported study on the impact of basic-skills training followed nine Northeast Ohio manufacturers for as long as 18 months.

The participating companies were: the Milbar Co. division of Stride Tool, Zircoa Inc., Radix Wire Co.'s Electrovations plant, Crescor Inc., Mantaline Corp., Marine Mechanical, Cleveland Glass Block Inc., Ferrous Metal Processing Co. and Cleveland Track Material Inc.

North Coast Education Services made confidential, individualized assessments of 409 employees. Of those, 256 were recommended for math training and 208 were recommended for communications training.

North Coast ran courses over a 12-week period. Sessions ran two hours twice a week at each company. Training also was provided in some cases in blueprint reading and English as a second language. The average class size was five to 10 workers. Two of the companies were involved in basic-skills training well before the study began.

Results varied by company, and not all companies measured benefits in the same way. The study report listed benefits without attributing them to a specific company or worker.

Among the results: 69 percent of workers reported improvements in reading, 63 percent in math. Workers also reported more interest in learning, more accuracy in their communications and math and more confidence and a greater ability in helping their children with homework. In later interviews, workers also reported a greater sense of loyalty.

Supervisors reported that workers were more accurate on the job and more open to change and new work processes. About half the supervisors said improved attitudes had led to better teamwork.

Companies didn't all benefit in the same way or to the same degree. One company reported improved attendance. Two companies indicated that scrap and waste levels fell after training. One said the cost of scrap declined from $256,900 in 1998 to $168,200 in 1999.

A number of different data sources among the participating companies indicated improved profitability and productivity.

One company that already tracked data by person and machine was Marine Mechanical in Euclid, which supplies propulsion systems to the U.S. Navy.

Before the basic skills training, the company had seen errors in capturing data, writing data and communicating inspection results, according to Vice President Al Tusek. The company also found that a number of parts deviated from the allowed tolerances and needed rework.

Workers who went through the training program produced a 60 percent decline in deviations after the course work. "It was significant," Tusek said.

Tusek also said training was time consuming, costing production work that sometimes had to be made up with voluntary Saturday overtime. Was it worth it?

"No question," Tusek said. "There's a huge return both financially and on the intangible side of people feeling good about themselves."

For copies of the study, call WINOC at (216) 520-0770.

TRAIN
FROM 1-H

Courses at work can boost productivity

"That's across the board in manufacturing."

Knowledge builds esteem

To cultivate more employer interest in basic-skills training, the nonprofit Work in Northeast Ohio Council commissioned a study to track benefits enjoyed by workers and employers at nine area manufacturers, including Zircoa.

A report issued last week says the study couldn't isolate training's impact on company productivity versus the impact of new machinery or other factors. But the study did evaluate the post-training benefits reported by employees and supervisors and measured by the companies' data. As similar studies have, it found higher productivity, fewer mistakes and improvement in workers' self-esteem and their desire for further learning.

"It's still very difficult to connect this kind of training with something tangible in a linear sort of way," said Patrick O'Connor, an education professor at Kent State University who wrote the report on the study, which was funded by the Cleveland Foundation and the Greater Cleveland Growth Association.

"It's very difficult to say if you spend $20,000 you get $50,000 back," O'Connor added. "But you will know the impact when employees become more engaged, solve problems more, when accident rates go down and grievances go down."

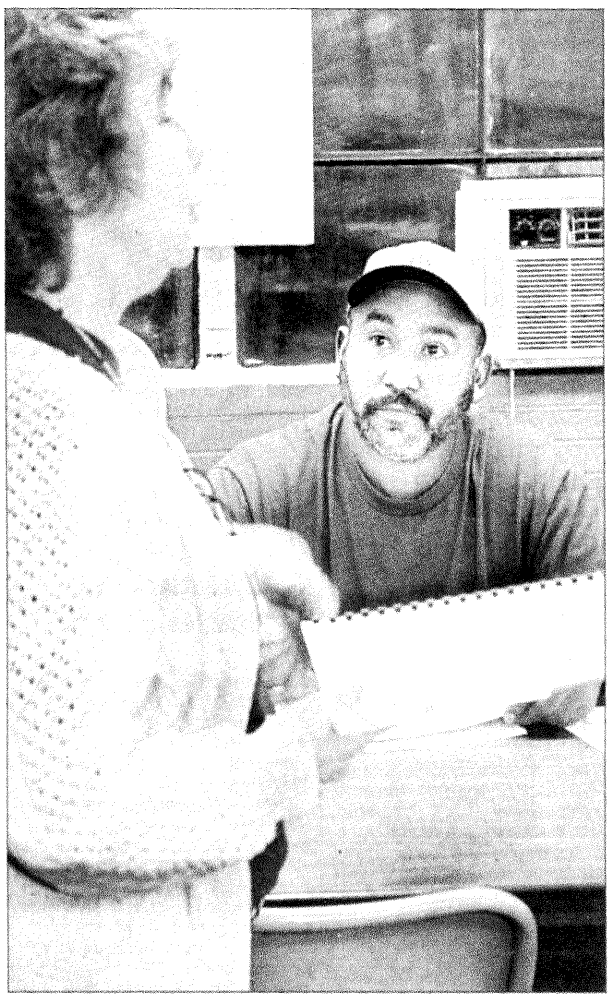
North Coast Education Services did the assessments to determine workers' need for reading and math skills. Its training consisted mostly of separate 12-week communications and math courses that ran in two-hour sessions twice a week at each company. The focus was on improving reading, writing and math.

Richards said 90 percent of reading problems result from an inability to recognize written words, not comprehension. So North Coast teaches a system that workers can use to break down words to figure out how to spell or pronounce them.

With math, the focus is on solving problems. Richards said a worker may know that 500 minus 250 is 250. But that same worker could be stumped when words are added, such as: A box can hold 500 parts and 250 are in the box now. How many more parts do you need to fill the box?

The Milbar Co. can see tangible gains. "Our efficiencies have improved dramatically in the last three years," said Gary Medved, president of Stride Tool, whose Milbar plant in Chagrin Falls makes small hand tools and participated in the study. He said the plant's productivity increased 25 percent during the period, even with training during normal work hours.

"Change is a lot easier to implement in the plant, and we have higher morale," he said, adding that training was "a key component."



PHOTOGRAPHS BY LARRY HAMEL-LAMBERT / THE PLAIN DEALER

Lynn Mathews, an instructor with North Coast Education Services, meets twice a week with workers at Cleveland Track Material Inc. to help them with their math. At right is worker Nelson Ortiz.

Basics a hard sell

The big question now is whether the study will help create the groundswell for basic-skills training the Growth Association says is needed for the region to compete more effectively. But basic skills training can be a hard sell.

The federal National Institute for Literacy estimates that more than 40 million adults in America need stronger literacy skills. Yet most workplace training focuses only on performing specific tasks, according to Sondra Stein, a senior research associate with the institute.

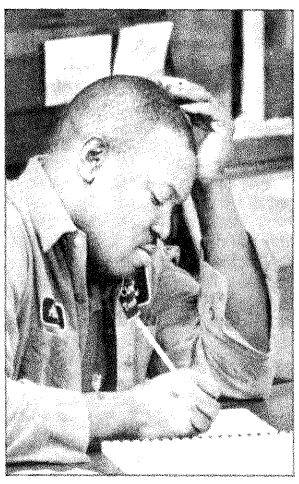
Companies "will train you to sell their products, they'll train you to do something specific to their work, but they won't pay you to develop skills that they think you should have gotten someplace else," she said.

A recent survey by the American Management Association in New York found that employers have cut back on remedial training, with just 13 percent offering literacy and math training last year, down from 24 percent in 1993.

The cost of the training averaged just $289 per person, not including lost work time. Eric Rolfe Greenberg, the AMA's director of management studies, said the decline indicates "a goodly number of companies" do not believe that remedial training is worth the cost. He chalked the problems up to instruction that was "off-the-shelf" rather than customized with training that could be immediately applied to jobs.

The new WINOC study addresses that potential pitfall by stressing the need to relate class content to the job, which is exactly what North Coast did with customized math workbooks and reading that was tailored to each company's work.

Companies also may shy away from basic skills training because of the time taken from production, the uncertainty about how to suggest literacy training to adults, the worry that trained employees will jump ship, and a general lack of understanding about how to get started.



Elbert Woods runs a machine mill at Cleveland Track. He said the skills course he takes is "like refreshing your memory" of high-school math.

"It's a real commitment on the part of companies to participate," said North Coast's Richards.

Milbar demonstrated that commitment. A portion of its workers had trouble reading. Some where shy and introverted. "They were not as eager to participate in new products," said Rosalie Flynn, the human resource manager. "As a company we were changing the way we were doing things, and they were stepping back instead of coming forward."

Vincent White, a 42-year-old high school graduate who has worked at Milbar for five years, took both communications and math courses. The welder said he can now understand more of the newspaper and is no longer too shy to offer quality-improvement suggestions at work.

He wants to go to college next year for training on computer-driven machinery. "This class made me feel I could do it," White said. "It improved what I needed to know."

Communication improves

At the Electrovations plant in Aurora, site manager Kregg Himes sensed literacy difficulties from the way workers from one shift communicated with those on another. "There was a lack of confidence in what they were trying to write," he said. "They wanted to keep everything as short as possible."

That was true among some of the office staff as well.

Ralph Dillon, a 37-year-old lift-truck driver and high school graduate, sometimes used odd words in the notes he left for the next shift when he couldn't spell a more appropriate word.

Before taking the North Coast courses he worried the instructor would make everyone read aloud. She did. "But it was all right," he said. "Everyone was in the same boat."

Dillon said that the classes were fun and that he "learned a lot of stuff I thought I knew that I didn't know about spelling and punctuation." He considered math a refresher course.

Today he finds reading bedtime stories to his children easier and he can leave better notes for the next shift. "Everyone thought it was a good idea," he said. "Especially the guy who comes in after you and can actually read your note."

Himes said the training's value can't be measured in dollars. Electrovations' output of insulated wire used at high temperatures has gone up 7 percent in the last two years, but he attributed that mainly to new lean manufacturing procedures and changes in shop-floor procedures.

For Cleveland Track Material Inc. in Cleveland, basic skills training was a necessity. The company's plant on Bessemer Ave. near Broadway had workers of more than 10 nationalities on the factory floor.

"It was like building the tower of Babel," said Bill Willoughby, president of the company, which makes railway track devices. In addition, the company's plant at E. 71st and Central Ave. had native-born workers lacking basic skills.

The company couldn't compete effectively without upgrading workers' skills. It needed to get computer-driven machinery and use the daily documentation proceses required under international quality standards. Cleveland Track also had to overcome a spate of problems. Some work was done incorrectly because workers couldn't read notes in the margins of drawings. Some supervisors didn't properly discipline workers because they couldn't write warnings or did them with such bad spelling and grammar that the message was lost. And the company had a safety record that was not good.

"You can't have a safe shop if employees don't understand English," said Willoughby's son Bill, the company's vice president.

Cleveland Track signed up with North Coast Education Services in 1993 and has worked with the organization ever since, training workers in classes that include English as a second language.

In the first four years of training, sales quadrupled. The company's accident rate has also plummeted. It now uses computer-driven machinery, and it led its industry in recognition for meeting international quality standards. The company said so many factors were involved in the improvements it is impossible to quantify the impact of training.

"We have some people who had some real breakthroughs in the way they do their jobs," said the older Willoughby. "And we have built terrific loyalty in the organization." He also gives leadership points to any supervisor "who can put his defenses down and take remedial work."

Motivational tool

One supervisor now taking math is Earl Webb, 48. "I didn't feel I needed it, but I'm glad they asked me to take it."

Webb said that his biggest problem in high school had been decimals and fractions but that instructor Lynn Mathews was already making decimals easier. And he hoped his attendance might inspire his workers. "If they see you trying to do it, it gives them more get up and go."

Cleveland Track and Zircoa have been offering training far longer than other companies in the study.

Zircoa said its education has gone well beyond the basics to include training in computer-aided design, accounting and advanced math and engineering. Plant manager Scott Abel said that in the last six to eight years, the company has seen manufacturing costs decrease by at least $300,000 annually. And productivity — excluding the impact of new, faster machinery — is up 2 percent annually.

"Basic skills are part of the total program," Abel said.

By the time Vaughn Denison sought out extra help from Zircoa, he was in a very responsible shop-floor position. He helped trouble-shoot problems on the factory floor, train other operators and make small batches of new products under development.

Denison said that with math and reading classes under his belt, he could now ask engineers designing new products more intelligent questions.

He hopes to get his high school equivalency certificate and is the proud holder of a library card, which he has shown to coworkers, including Bill Roupe, chief steward at the plant for the American Flint Glass Workers Union Local 1033.

Roupe still chokes up thinking about the achievement represented in that card.

"That's amazing," Roupe said. "My God, that's one of the good, good stories."

E-mail: slivings@plaind.com
Phone: (216) 999-4453

Where to turn for help

Organizations providing basic-skills training to workers.

Cuyahoga County

North Coast Education Services: It provided the training for the new basic-skills study; (440) 247-1622.

Cleveland Reads: It is an umbrella organization for 90 literacy programs in Cuyahoga County; (216) 436-2222.

The Cleveland Schools'Office of Adult and Continuing Education: (216) 361-4770.

Project: LEARN: (216) 621-9483.

Old Stone Foundation: (216) 241-0311.

Geauga County

Geauga County Educational Service Center: (440) 285-2222, Ext. 6461.

Lake County

Auburn Career Center: (440) 357-7542 or 1-800-544-9750, Ext. 237.

Lorain County

Lorain County Joint Vocational School Adult Career Center: (440) 774-1051.

Medina County

Medina County Career Center — Adult Education: (330) 725-8461.

Project: LEARN: (330) 723-1314.

Summit County

Akron City Schools — Adult Basic and Literacy Education: (330) 848-0037.

Statewide

Employers also may apply to the Ohio Department of Development for funding assistance for basic skills training.

- The Ohio Job Training Tax Credit provides selected Ohio employers with a tax credit for up to $100,000 a year to help offset training costs. Only C-Corporations subject to the state franchise tax are eligible. Employers can apply for a credit equal to 50 percent of the amount by which their annual eligible training expenses exceed its three-year average.
- The Ohio Industrial Training Program provides financial assistances and resources for customized training. Grants are provided directly to companies making investments that will create new jobs or retain existing jobs in Ohio. The program reimburses half the cost of the instructor's time up to $60 an hour as well as half the cost of instructional materials. Basic skills training may be covered only as a prerequisite to technical training.

For more information call: 1-800-848-1300.