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ABSTRACT

The six articles in this publication provide information on how basic skills education and training can contribute to corporate profitability, using case studies and examples from corporations that promote employee training. The following articles are included: "Laying the Foundations for a Competitive Advantage: Emson's Skills Enhancement Program" (Zane Bail); "Education Drives America" (Michele Perry); "Designing Curriculum for Workplace Literacy Programs" (Eunice N. Askov); "Proving It Works? Overcoming Business Roadblocks to Re-Educating the American Worker" (Edward E. Gordon); "Using ROI [Return on Investment] to Link Community College Resources and Workplace Training Needs" (Denise P. Rzonca, Jim M. Graber); and "Problem Solving, Teamwork, and Continuous Learning--Cornerstones for Success" (J. William McVey). (KC)

ILRDC Special
Vol. 1 January, 1995

FOUNDATIONS
For a Competitive Advantage

Inside...

A Note From the ILRDC

Dear Friend:

This innovative publication, *Foundations for a Competitive Advantage,* provides you with the latest information on how basic skills education and training can contribute to corporate profitability. With everything from case studies to "nuts and bolts" demonstrations of evaluation techniques, you will find the articles practical and useful whether you've been doing this for years or are just hearing about it for the first time.

Our lead story, *Emson's Skills Enhancement Program,* is about a company from Bridgeport Connecticut. EMSON Inc. Vice President John Clark and Human Resource Manager Eleanor Arno describe their company's basic skills odyssey to Zane Bail. The result is a "beginning to end" story on putting a basic skills program into place. John convincingly describes how the program contributes to the company's "bottom line."

The next article, by Michele Perry, *Education Drives America,* highlights the work that has taken place at the WILL-BURT Company in Orrville, Ohio. It has been spearheaded by the devoted CEO and Chairman of the Board, Harry E. Featherstone. The article tells you how he turned a failing company around in a four year time period by using education and training to improve manufacturing efficiency from 65% to 110% and reduce employee turnover from 35% to 1%.

The third article is written by Eunice N. Askov and entitled *Designing Curriculum for Work Place Literacy Programs.* She tells you how to prepare for worker instruction by setting clear goals, looking at jobs required of workers, gathering input from workers and supervisors and examining work-related materials. She then goes on to detail the steps of designing instruction and conducting assessment and evaluation.

Edward E. Gordon provides us with the next article, *PROVING IT WORKS? Overcoming Business Roadblocks to Re-Educating the American Worker.* This articles provides the reader with information about the need for a well educated work force and three strategies to determine the "return on the investment" of basic skills programs.

The fifth article, *Using ROI to link Community College Resources and Work place Training Needs,* is a follow-up piece to the previous article and provides you with a case study of how such an analysis can be used with a company training program. Denise Rzonca and Jim Graber have prepared this article.

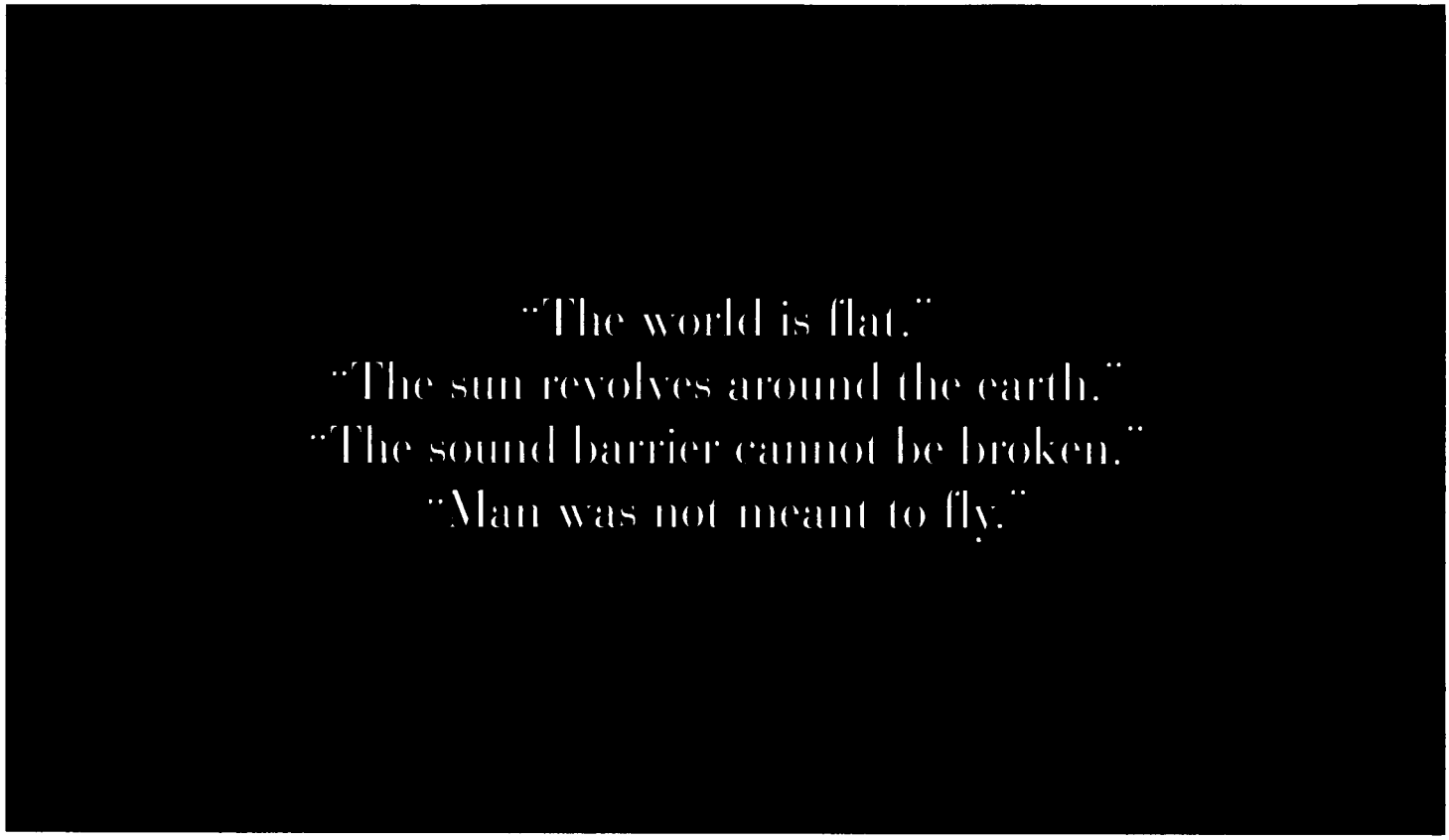
This special publication ends with an article by J. William McVey which is aptly called, *Problem Solving, Teamwork, and Continuous Learning—Cornerstones for Success.* The article stresses that both large and small companies can achieve a high performance work place and become internationally competitive. It features two companies, General Motor's Saturn assembly plant in Spring Hill Tennessee, and Grand Rapids Spring and Wire Point in Michigan. Both sites reveal that basic skills programs provide a solid foundation for team building and problem-solving.

We hope you find this publication a treasure-trove of information and that it places you on the cutting edge in the work place basic skills arena. Successfully competing in the global marketplace is not an easy task. One first step is to ensure that the front line workers of today have the skills to effectively perform the job tasks of today and tomorrow by providing the education and training required. Not only will you be helping the company to attain excellence, but you will be helping workers to become more skilled on their job as well as at home and in their community.

With that final note, enjoy reading.....it is a gift that so many of us take for granted.

Suzanne Knell, Executive Director, and Barb Geissler, Associate Director

A special thanks to Zane Bail for putting together this publication. Her enthusiasm and dedication made this possible.



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Laying the Foundations for a Competitive Advantage: Emson's Skills Enhancement Program

By Zane Bail, Research Assistant/Conference Coordinator, ILRDC

Zane Bail is research assistant and conference coordinator for the ILRDC. This article is based on an interview with John Clark, Vice President of Manufacturing, and Eleanor Arno, Human Resources Manager, of Emson, Inc.

John Clark, vice president of manufacturing at Emson, Inc., was in charge of introducing statistical process control (SPC) at his plant in Bridgeport, Connecticut. He was reviewing some training videotapes at home when he realized the tapes assumed solid knowledge of statistics. John, a college graduate with a background in statistics, felt uncomfortable with the tapes. He realized if he was having difficulty with the materials his plant workers would be overwhelmed.

While thinking about the level of education needed to understand the tapes, he recalled a literacy study recently given to him by a representative from the local United Way. John picked up the study and the words jumped out at him, *"Thirty percent of employees at manufacturing plants in the Greater Bridgeport Region read below the 5th grade level."* John then knew he could forget about SPC training tapes, there was a bigger problem that needed to be addressed. Workers at his plant needed training at a much more basic level. Reflecting back on those days, John now says, "I think I was naive. I grew up with educated people, all my friends and associates are well-educated and you just assume that everyone else is...but you can't."

More information on Emson, Inc.

Emson, Inc., is headquartered in Bridgeport, Connecticut and was founded in 1952. The Bridgeport location has 350 employees. Emson, Inc. is a world leader in the manufacturing and distribution of spray pumps. Emson's customers include many manufacturers with a wide range of consumer products marketed worldwide. Customers include: Helene Curtis, Inc., 3M Pharmaceuticals, Revelon, Avon and Unilever.

GETTING STARTED

Fortunately, John found someone to turn to, the study's author Eleanor Arno, Director of the United Way Council to Foster Literacy. She helped John get started and introduced him to Literacy Volunteers of America of Greater Bridgeport (LVA). With the help of both Eleanor and LVA, John was able to form a picture of what the company needed. Emson, Inc. needed basic skills classes for employees that would address: basic reading, math and English as a second language. He also knew who he wanted to help him, Eleanor as Director of the United Way Council to Foster Literacy and LVA as the educational provider. Now it was time to get Emson's employees and union behind the plan.

First, John met with union representatives and explained what the company was about to embark on and why. His message was clear, "unless the company engages in some work place literacy skills training, people are in jeopardy of loosing their jobs. The company needs this to be competitive in the global marketplace." John did not expect any objections from the union and he was right—there were none. Next, John took Eleanor's advice to recruit natural leaders from the plant floor. The natural leaders, including union stewards, attended a leadership development series sponsored by the United Way. The leadership series was a local initiative developed to address the current skills issue in America.

ADVISORY COMMITTEE

The group attending the United Way's leadership series became Emson's 12-member employee advisory committee. At the leadership series, the employee-leaders learned about employee resistance and were trained in how to gain buy-in from co-workers. The United Way also assisted them with development of presentations for their co-workers. They fully understood the issues and saw that Emson was ready, willing and able to provide training at the company on paid release time. The advisory committee went back and presented the information at group meetings outlining the skills required for the workplace of the future and the skills enhancement program.

According to John, the advisory committee and the leadership series were crucial in reinforcing the credibility of their plan. The credibility has carried over through the implementation phases. Whenever snags occurred in the program the management team met with the on-going advisory committee to discuss program issues and concerns. The advisory committee was and still is the focal point for program policy recommendations, curriculum development, recruitment and implementation strategies.

EMSON'S SKILLS ENHANCEMENT PROGRAM

In order to determine the extent of the problem at Emson, LVA tested all employees from supervisors to line workers. LVA coordinated and trained volunteers from the community to give the assessment at Emson to all three shifts. LVA kept all the test information confidential. Emson received general data regarding the needs of groups of employees so that plans for program implementation could be made. Assessment results indicated that 85 employees out the tested 125 were in need of basic skills training.

After the original assessment, employees could choose to participate in the skills enhancement program. Employees who decided to participate in the program were assessed again by LVA to see where improvement was needed. A course of action was then recommended to individual employees. Individuals were able to give input to their action plans. For

Bridgeport Literacy effort benefits from United Way study

In 1989, the United Way of Eastern Fairfield County (UWEFC) initiated a study on adult literacy which encompassed a regional needs assessment, the development of a pilot program and an agenda of recommendations for UWEFC. The impetus for the study came when Literacy Volunteers of America-Greater Bridgeport applied for United Way membership. Before taking on a new issue the United Way conducted research to find out the extent of the problem, what was already being done and what needed to be done.

The research included a literacy survey of 183 companies in Greater Bridgeport. The survey analyzed the perception of the illiteracy issues by the business community, raised awareness on the issue, gathered information on areas of most concern and sought partners for an on-site survey of employees and work related materials. Sixty-three companies responded representing over 21,000 employees. Over 600 employees were interviewed and assessed at six diverse worksites. The report, *In the Community Interest: To Foster Literacy in the Greater Bridgeport Region* was released in early 1991.

After the study was released, the UWEFC Board allocated $90,000 per year for three years to assist companies and literacy programs to develop new resources to meet the literacy needs of the community.

example, some employees were reluctant to work in a group and preferred to have a one-on-one tutoring session or work on a computer.

The components of Emson's program were, and remain today: LVA trained tutors from within the company, as well as outside volunteers; computer-assisted learning with progress monitored by LVA; and additional training opportunities designed by Eleanor. (In February, 1994, Eleanor became Emson's Human Resources Manager).

Emson found that accessibility was vital to participation. By having the program at the work-site and during work hours, critical barriers to taking part in the program were eliminated. An added benefit was that workers saw co-workers going to class. For those who were reluctant to sign up for the program, it gave them time to watch and see others. According to Eleanor, "it has taken time for people to come forward. As one might expect, people with the most self-confidence or with higher skills or both came forward first. They were much less intimidated."

Three years into their program, Emson is still getting people who are signing up for classes for the first time. Eleanor stated that they are not new employees who are signing up, they are employees that have been with the company for e time, but were holding back. "They wanted to make sure it was a safe thing to do."

LONG TERM COMMITMENT

Emson has found that basic skills programming is a long-term commitment for other reasons. Very few employees who began skills training have graduated from the classes. John said, "it is important for companies to realize that if they think they can put a program in place and by this time next year people will be high school graduates, they are not approaching this with success in mind. A skills enhancement program must be viewed as an integral part of a company's overall training plan, which in turn supports the company's business mission." In Emson's case the mission is to be a world leader!

Emson's long-term commitment to training has also spurred a newly found positive attitude toward learning. Emson recently introduced a course designed to build accuracy in working with numbers. The participants came to class ready to learn. What would have been a strange environment for employees a few years ago is now a comfortable environment. According to John, "we have a training spirit within the company, and people are not fearful. As we move into team building and team training, our workers will be ready and willing."

THE BOTTOM LINE

Over the past three years, Emson has realized a number of payoffs from their skills enhancement program. Employees have gained skills in speaking English, reading instructions and applying math to their work. Employees who were unable or reluctant to talk to their supervisors or visitors are now eager to participate at new levels. They are much more willing to offer an opinion or suggestion because they have gained

Key Elements of Successful Skills Enhancement Programs

Through research and experience several key elements which make unique contributions to successful workplace skill enhancement programs have been identified.

1. Training is readily accessible to workers;
2. Employees are compensated for their instructional time;
3. Curriculum is developed on work-related applications and supports operational priorities;
4. Management and employees share vested interests;
5. Basic skills training is integral to the company wide training effort;
6. Peer advisory ensures participatory planning, implementation and management.

The first two key elements enhance the probability of the goal achievement by reducing critical barriers. The other factors represent the critical consensus required for success. These elements were incorporated in Emson's Skill Enhancement Program with the help of the United Way's Literacy Council and LVA-Greater Bridgeport.

communication skills and increased their self-confidence. They are easier to understand, ask more questions about their work and offer information about the operation of the equipment and quality of work. Emson has also noticed an increased camaraderie between office and factory personnel. Participants and tutors in the skills enhancement program have a better appreciation of the contribution they each make to the success of the company. This camaraderie has also positively influenced moral in the plant.

Emson's philosophy is a long-term commitment to training. They believe that you need to get people basically skilled first; then move into job-specific training second; and make employees a part of team that empowers them as well as holds them responsible.

John said it is important to put a system in place within the company that is team oriented. "You just can't do it piece-meal, you must do it across the board." Prior to establishing the skills enhancement program the management team at Emson put together a group of people who formulated a plan to change from a historical military hierarchy chain-of-command to a more free-flowing team oriented approach. Skills enhancement training and the follow-up to that, which is the job-specific training, have to be dovetailed into the organizational changes that the company is making in order to work. According to John, "at Emson this is proceeding, I won't say it is proceeding at a rapid pace, but it is going to happen."

In order to sell skills enhancement programs to other people, it all comes back to "what's the bottom line result." John said "I think our company has experienced bottom line results, however, it is probably a very small percentage." Efficiency in the plant has increased over the last three years, absenteeism is below the national average and turnover is practically non-existent. John said it is difficult to measure the exact effects of the program on the amount of scrap and rework reductions. "When people understand how to read instructions, how to do checks and tests, know the difference between a good pump and a bad pump, and are armed with the tools and empowered to make decision we will see a reduction in scrap and rework. That is the bottom line to Emson's skills enhancement program."

Success like this can't be accomplished by business alone, insist Eleanor and John. Partner with everyone and look at this as a long-term investment. Build and develop relationships inside (with employees and union members) and outside with resources in the community. As Emson Inc. has found, a strong foundation is an essential element of any business structure. ¶

The Illinois Literacy Resource Development Center (ILRDC) is...

AN INDEPENDENT, NOT-FOR-PROFIT ORGANIZATION supported by the Illinois State Board of Education-Adult Education and Literacy Section, The Joyce Foundation, Lloyd A. Fry Foundation, Polk Bros. Foundation, Chicago Tribune Charities, Secretary of State Literacy Office, Illinois State Library and the Illinois Network of Adult Education and Literacy Resources.

THE CENTER WAS ORGANIZED IN 1987 through the cooperative efforts of the six major literacy entities in the state. The founding agencies envisioned a broad mission for the organization: "to promote literacy efforts in the state of Illinois." Since its inception, the ILRDC has grown to serve over 4500 interested individuals and organizations in the state and nation. In its role as an intermediary organization, the ILRDC provides technical assistance, conducts action oriented research, disseminates informa-tion and influences relevant public policy. The Center has focused its efforts on five issue areas: work force education, family literacy, public policy, evaluation/ program development and resource development.

THE ILRDC HAS PRODUCED EIGHT NATIONALLY RECOGNIZED PUBLICATIONS, including Learning That Works: Basic Skills Programs in Illinois Corporations, Programs and Structures, Report 1 and Learning That Works: Basic Skills Programs in Illinois Corporations, Policy, Report 2. According to Forrest Chisman, President of the Southport Institute for Policy Analysis, "This is clearly the most important and best informed analysis of work place education at the state level yet prepared. It should serve as a wake-up call to educators, policy makers and the business community that the time has come to put upgrading the skills of on-board workers high on their priorities."

TO ORDER YOUR COPY OF THE REPORTS OR TO RECEIVE MORE INFORMATION about how the ILRDC can help you with your work force education activities, call 217/355-6068.

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Education Drives America

By Michele Perry, Coordinator of Special Training, ILRDC

Michele Perry is an educator; coordinator of special training and newsletter editor for the ILRDC. This article was based upon Mr. Featherstone's keynote address at the Fifth Illinois Work Force Education Conference, May 13, 1994.

Education Drives America! This is the message that Harry Featherstone, Chief Executive Officer and Chairman of the Board of the Will-Burt Company in Orrville, Ohio brought to the ILRDC's Fifth Illinois Work Force Education Conference entitled *It's More Than Jobs: Learning, Work and Improving the Bottom Line.* Featherstone's extraordinary career success and strong belief in the education of workers were highlighted in his keynote address.

The Mission

Harry Featherstone is a man with drive and a zest for life. He provided amusing anecdotes of a childhood and adult years lived "on the edge." His life was and remains a series of personal challenges and triumphs. "Call Harry Featherstone the CEO with a mission.' For 5 years, Featherstone has been crisscrossing the country carrying to businesses, workers and educators the message of the importance of workplace education. At 65 years of age, I have found a new world in manufacturing. It is my task to get every manufacturer to value education and knowledge." (Chicago Tribune, May 13, 1994)

Formerly employed by Ford Motor Company as a "turnaround" person (troubleshooter for problem areas), his job was to ask "What is the ailment?" With often only three months to repair the problem, he employed the sequence of going to the location, assessing the problem, determining how to repair the problem and then doing so. In every case he found out what was wrong by talking with the workers on the lines.

Changing Times

Many of the strategies Featherstone developed at Ford served him well in future endeavors. In his address, he cited 1985 as a key date across the nation. Workers were in trouble with company downsizing and layoffs. A variety of studies pointed to a national crisis in worker education. Workers lacked the ability to [illegible]critical thinking skills—as one headline stated: "They Know 2 + 2 = 4, But Not The Reasoning Behind It."

This upheaval in the workplace coincided with Featherstone's move in 1985 to take command of the Will-Burt Company. Will-Burt Company is a midsize metal fabricating plant involved in auto parts, masts, environmental buildings, fabrication/machinery and assembly. Featherstone set out to turn around a troubled company by implementing a number of strategies. He began by setting up an ESOP (employee stock ownership plan).

With raising quality standards world-wide, Featherstone knew the Will-Burt Company needed a competitive edge, something to set them apart. He decided to shoot for perfect quality and on-time delivery. Perfect quality meant manufacturing parts to blueprint—zero defects. Company employees would have to work smarter and be involved in order to pull this off. His work force, though, was hardly eager to pioneer newfangled techniques.

Featherstone expected his employees to become full partners. His firm belief that employees have "basic knowledge and great ability to learn," helped effect a complete turn around in worker attitude, productivity and loyalty to the organization.

During his speech, conference participants learned about some of the challenges Featherstone and his workers overcame. As he stated, "Any company of any size that is not into education by the year 2000 will either be owned by someone else or working strictly locally. That's just the way it is."

Strategies For Change

Strongly influenced by time spent working with Ford in Japan, Featherstone was really interested in how the Japanese did things. "I studied them and decided that their success hinged on education, training and their emphasis on business. I mean they teach business principles in grade school. So I synthesized all I'd learned and put it into a coherent package and turned it loose at Will-Burt. I had no idea where we'd end up." (INC/July 1990)

Getting started had its pitfalls. Featherstone approached three universities for assistance in instituting his workplace education plan. They said they offered continuing education, not workplace education. Finally a fourth university—the University of Akron, worked with him to create a program to teach workers. The Will-Burt workplace education program incorporates what Featherstone refers to as the "Points of Education and Behavior Values."

- Integrity
- Discipline
- Leadership
- Logic
- Curiosity
- Creativity
- Sequencing
- Spatial Thinking
- Openness
- Self Esteem

These factors of success receive attention in the education of Will-Burt workers. All workers participate in a mandatory core competency program, on company time, that includes basic blueprint reading, advanced blueprint reading, geometry, geometric tolerance and Statistical Process Control. Featherstone believes that every worker, from office staff to sales, line workers and engineers, need to learn every aspect of production. "Hourly and professional people must mix."

His plans met with worker skepticism, fear and resistance, but he persevered. As education began and then progressed workers became more productive, took more pride in their products and coalesced as a team. Featherstone began to see his dreams take shape as he reflected on the following:

> "...only by drawing on the combined brainpower of all its employees, can a firm face up to its turbulence and constraints in today's environment and WIN.."
>
> *Conclusion of speech by Konosuke Matsushita, creator of $22 billion sales electronic group, Matsushita Electric.*

Along with worker education, criteria/responsibilities for team leaders and teams were established. Team leaders act as a team member—not as a supervisor, coordinate scheduling, track team productivity, document lost time and corrective action and participate in productivity review. Each team member rotates through the following areas over 6 month time spans—customer quality, production control, safety, personnel and costing.

The hiring process at Will-Burt is another example of team effort in action. While the front office screens applicants, many plant employees (teams) make the recommendations to hire. This is possible because all employees are trained in personnel practices and human relations. As Featherstone related, "Teams always hire the best for their team."

Key to the success of Will-Burt's workplace education initiative is management's strong commitment to not only basic education, but also advanced education for employees. Featherstone noted that:

- Basic education must be group study/think
- Basic education must be on company time mandatory/voluntary
- Advanced education must have educator and a professional in that discipline
- Advanced education must be complete/no excuse program

The Payoff

Employee education has resulted in many "firsts" for Will-Burt. Between 1986 and 1990 manufacturing efficiency improved from 65% to 110% and employee turnover was reduced from 35% to 1%. Employee turnover at Will-Burt is not due to firings or leaving for other like-industry jobs, but individuals who leave to build their own enterprises. Featherstone speaks with pride of these cases and the jobs they now add to the economy.

Will-Burt's safety record reflects education and awareness. In 1980–85 $100,000/year in accidents—by 1993 $662/year in accidents. Cost of quality is down from 6% to 2%. They also lead in establishing "Primary Care" in the corporation. Featherstone first placed family psychologists in the factories in 1986-87. Rehabilitation is another key concept. He instituted a disability program that provides full pay for up to six months. A coordinated team effort for employee rehab that involves a physician, an associate, an insurance representative and management is in effect ensuring that workers are returned to productivity in as short a time possible. Will-Burt is the only company in Ohio to receive self-insured status. In 1986 they paid $486/month/ family for health insurance. They have recently signed a two-year contract at $285/month/family.

Formula For Success

Will-Burt's combination for success that includes Education—Primary Care—Rehabilitation, puts them well on the way to refuting the statement that follows:

> "We are going to WIN and the Industrial West is going to LOSE OUT. There is nothing you can do about it because the reasons for your failure are within yourselves."
>
> *Quote from speech by Konosuke Matsushita, Owner of Matsushita Electric.*

Harry Featherstone says "This cannot happen!" Companies grounded in the beliefs that "Leaders emerge with education" and that "constant respect for people and uncompromising integrity" are keys to success will prevail in a world economy. As one conference participant summed it up when reflecting on Featherstone's efforts and missionary zeal, "One person can make a difference." ¶

Designing Curriculum for Workplace Literacy Programs

By Eunice N. Askov, Professor of Education; Director, Institute for the Study of Adult Literacy, College of Education The Pennsylvania State University

Dr. Eunice N. Askov is currently Professor of Education at The Pennsylvania State University and Director of the Institute for the Study of Adult Literacy, which is internationally recognized for its literacy research, development, and dissemination. She is a newly elected member of AAACE's Board of Directors and director of their Commission for Business, Industry, and Labor. She was recently named the first Literacy Leader Fellow by the National Institute for Literacy.

The nature of work and the workplace is changing; workers must increasingly use reading, writing, and computational skills in order to solve problems in the workplace. Basic literacy skills, such as reading, writing, computation, and reasoning, are used primarily as tools for completing other tasks. The skills are usually not used in isolation; most jobs require a mixture of skills to solve problems in the workplace. This use of skills "to do" contrasts with the "to learn" emphasis typical of school settings.

Recent studies, however, conclude that many Americans lack the skills needed to tackle complex problem-solving tasks in the workplace; other studies indicate a growing mismatch between the skills needed for new jobs and the skills of available workers. Technological advances and restructuring in the workplace are also increasing the range of higher-order thinking skills required there.

Employers and labor union leaders who are concerned about these changes in the workplace may seek out adult educators as partners in designing workplace literacy programs. Increasingly, adult basic education providers are being invited to help in the retraining of the workforce. They are negotiating their role with business, industry, and labor groups to design and implement programs at the worksite.

Preparing for Instruction

The first step in designing instruction is to determine the goals of the program in the eyes of the major stakeholders, including management, unions and/or workers, trainers, and human resource personnel. Sometimes the goal is *general enhancement of the workforce,* offering educational opportunities at the worksite; usually these programs are offered before or after shifts on employees' own time as part of an employees' benefit program. Usually, the curriculum is similar to that delivered at an adult education center.

However, if the goal is *training for the demands of new technology or the changing workplace,* the workplace literacy program may be held "on the clock" during work time. These programs should offer basic skills instruction within the "functional context" of the job, in which work-related basic skills are first determined and then taught using job materials, reinforcing not only work-related basic skills but also job knowledge.

The first step is to determine the jobs which will be the target of the workplace literacy program. It may be that hourly positions within certain departments will be the initial focus, or the program may be opened up to the entire plant. The next step is to determine the essential job tasks of those jobs. Usually the workers themselves are the best source of information about those tasks that occur often as part of the job and involve application of literacy skills. Supervisors and trainers also can identify the essential job tasks within a department.

The functional context approach to instruction usually begins with literacy task analysis as the means of developing the curriculum for workplace literacy. The adult educator, with the cooperation of the management and labor partners, studies the major job tasks of the targeted jobs to determine the essential basic skills required for work, observing and interviewing experienced workers, interviewing supervisors and trainers, and collecting all written materials and information on the targeted jobs, including job descriptions, job training materials, manuals and procedures, print and computer materials (including schematics, routing sheets, directions, and signs) used on the job. Those job-related basic skills and work materials become the basis for the curriculum to be delivered at the workplace.

Some problems exist with this approach if instruction is focused only on specific jobs. Usually many jobs, rather than a few, are targeted within an industry. These jobs may be very different in the specific basic skills required even though they may all be under the same roof. Classes are usually scheduled, especially in manufacturing industries, so that only a few workers from each job area miss work at one time. The instructor is thus faced with a class of workers who not only have very different jobs but also different basic skills needs and abilities within the same industry. The resources are usually not present for developing individualized curricula for the various jobs within the industry.

A solution may be to offer "customized basic skills instruction" which is work-related, focused on the needs and materials of the workplace, but not linked precisely to specific jobs. Since workplace literacy programs are often developed because jobs are changing, teaching only the basic skills associated with a specific job may not be as useful as thought initially. It makes more sense to offer more general work-related basic skills instruction that includes the workers in the decision-making process.

The workers themselves are often aware of what they need; their input can be gathered through an anonymous needs assessment conducted by the union or worker advisory group. The purpose is to determine the commonalities in the types of written and oral communication and problem-solving skills that are required for the targeted jobs. Trainers and supervisors can help add

specificity to the nature of the needs of the future workplace.

In addition, the adult educator can look for some general workplace literacy skills in the literacy task analyses; these should be developed using work-related materials:

- *technical vocabulary*, including abbreviations, used in the industry not only on the job but also as part of the training materials, signs, bulletin boards, and employee handbooks.
- *schematics*—graphs, charts, tables, diagrams, blue prints, and maps—that are used in the industry.
- *following directions or procedures.*, including procedural guidelines, checklists, routing sheets, and print and computer directions.
- *main ideas and details*, especially in training materials; usually materials used directly on the job do not require this skill, but workers are expected to have mastered the content before doing their jobs.
- *problem solving and critical thinking*, identifying problems and fixing them quickly—or at least knowing whom to notify in case of a problem.
- *interpersonal and communication skills*, discussing a problem with other team members who may be from diverse cultural groups and reporting action taken, sometimes orally and sometimes in writing.

Designing Instruction

After identifying essential basic skills and collecting work materials, the next step is to "customize" as much of the instruction as possible. A variety of approaches can be used to customize instruction, including computer-assisted instruction, learner-provided and learner-generated materials, and cooperative learning exercises.

Some inexpensive software programs can be easily customized with the technical vocabulary, definitions and sentences of the workplace. Some other software programs offer mini-authoring systems. The instructor can insert practice reading materials and create practice exercises from materials used on the job, in training, or in the employee handbook. These programs give immediate instruction and reinforcement to the vocabulary that is needed on the job using reading materials from the workplace.

Another solution to designing instruction for workers with different jobs within the same industry is to ask the workers to bring materials from the job. These materials can be used as the basis for instruction, especially in designing instruction in understanding schematics, following directions, and reading for the main ideas and details.

Learner-generated materials can also be used in designing customized basic skills instruction. For example, workers can write their own job descriptions; they can also analyze the tasks related to their own jobs. This process encourages workers to analyze their strengths and weaknesses in job-related basic skills; it encourages metacognitive (learning how to learn) abilities, helping workers to think about their own learning and skill development.

Team-building is crucial in the modern industrial plant as well as in other occupations such as food and health service. Instructors can use interpersonal and communication skills needed on the job as the basis for group discussion, instruction, and practice. Cooperative learning strategies (with the instructor or experienced peer leader as facilitator) and role playing to solve the work-related problems can develop higher order and communication skills. This type of activity can form the basis of the curriculum and also focus on the real problems in the workplace.

Assessment and Evaluation

Similarly, assessment and evaluation must be planned to reflect the goals of the workplace literacy program. It is inappropriate to use general adult basic education tests to assess workers and to evaluate the impact of a workplace literacy program if a customized curriculum has been developed. Curriculum-based assessments or criterion-referenced tests, customized to the curriculum, measure acquisition of the skills being taught using work-related materials, more accurately assess strengths and weaknesses of workers as well as provide evidence of the impact of the program. These assessments, as part of the instructional process, should also be designed with input from workers, trainers, and supervisors.

Evaluation should be considered ongoing, with all stakeholders having the opportunity to suggest indicators of success. Evaluation should help shape the development of the curriculum to make it appropriate and responsive to needs of all involved. Program expectations should be realistic; for example, a workplace literacy program is more likely to affect performance on customized assessments of basic skills than to increase productivity, quality, and safety, although the latter indicators may be important to management and may, in fact, be positively altered over time. These indicators, however, are indirect and do not directly reflect the outcomes of a workplace literacy program.

A Final Note

Workers' needs will be met by an ongoing program with multiple opportunities for training and education. The training program should provide a relevant and motivating context for developing adult basic skills. The integration of work-related materials and instruction in relevant basic skills builds on the workers' background of experience and knowledge while improving their abilities to use communication and computational skills more effectively in the workplace. A forward-looking curriculum, that is customized to the needs of the workplace but focuses on the needs of the future rather than the present, will help the current workforce grow and develop, and ultimately accomplish the goal of becoming more productive workers.

Resources for Further Reading

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Continued, page 18

Life Long Learning is the key to the success of our country, our businesses and our own individual growth.

Nabisco supports the efforts of all those who are making a difference in Illinois' workplace educational endeavors and in particular the Illinois Literacy Resource Development Center.

Proving It Works? Overcoming Business Roadblocks To Re-Educating the American Worker

By Edward E. Gordon, Ph.D.

Dr. Edward E. Gordon *is President of Imperial Corporate Training and Development. He is an instructor at Loyola University, Chicago. Dr. Gordon discusses skill training's return-on-investment (ROI) (and other Work Force Education issues) in his recently released book,* FutureWork: The Revolution Reshaping American Business *(Praeger, 1994).*

U.S. Economic Decline

Why are so few companies reskilling their employees? A newly released U.S. Labor Department survey (October, 1994) of nearly 12,000 businesses found that, as of 1993, fewer than half were offering their workers formal job-skills training essential for improved productivity. Worse yet, fewer than 3 percent were offering training in basic reading, writing, math or English-as-a-second language.

The equally depressing news from the National Education Goals Panel (October, 1994) was the report that only 52 percent of the U.S. adult population scored at level 3 or higher on the prose portion of the National Adult Literacy Survey (NALS) conducted in 1992. This means that nearly half of all American adults were not able to perform the range of complex job tasks considered important for the U.S. competing successfully in a global economy.

We do not have to look far to see how these results are playing out in daily American life. Recently released U.S. Census Bureau data (October, 1994) reveal that the median income of the average American family has declined each year since 1991. This trend persists despite rising employment, productivity, and total national income. Why? According to a Wall Street Journal report of October 26, 1994, economists believe "that the most valuable spark to setting median income on an upward trajectory may now lie primarily in long-term costly solutions — particularly retraining workers for high-skill jobs and investing in education." If this economic trend does not change, how will the American middle-class propel our consumer-driven economy? It seems that hard times lie ahead for many American businesses.

In light of these potentially grave economic consequences, why do so few businesses attempt to re-educate their own workers? There seems to be two major roadblocks:

1. A lack of confidence in the providers of business skills training as well as in the results of such training.
2. Failure to comprehend the economic value added (return-on-investment) that good skills training will provide to any business.

Lack of Credibility

In the minds of most senior business managers, worker retraining programs lack credibility. Managers don't think they work. They view particularly basic skills programs as social service programs producing mediocre results. Most published research seems to substantiate their view.

This management viewpoint continues to accelerate U.S. business' flight to overseas locations. One example is the over 300 American manufacturing plants in a 70-mile corridor between Glasgow and Edinburgh. A recent "Relocate In Scotland" ad in the *Wall Street Journal* stated, "We have a 400 year old history of a well educated workforce and teaching them not just facts but how to think." This is not a rare exception. U.S. high-tech manufacturers are increasingly locating overseas in Singapore, Korea, China, Ireland, and Holland due to the availability of better educated workers. Labor costs are also a factor. However, average U.S. labor costs are now below those of many European nations.

The current skills training programs offered by American business also signifies its lack of confidence that the average American employee can be re-educated for the high-tech workplace. The majority of these educational skill programs are not supplied by the same professional training sources that have long provided American business its managerial training and development programs. Look at this fact. Almost $50 billion is expended annually on management training programs provided by in-house corporate trainers, purchased training packages, outside professional consultants, university and college instructors, or governmental agencies. However, this is not the current mix of providers for basic skills educational skills programs!

The majority of business basic skill programs are established through some form of governmental grant/subsidy and are usually only continued if a low cost training source is available. This was clearly not the intent of many well-intentioned governmental grant programs. They were established to encourage businesses to see the worth of employee skill improvement programs and then adopt them as part of their overall training and development budgets. However, today's reality is far different. Many companies only seem interested in beginning or continuing skills training if it remains heavily subsidized by a governmental agency. Furthermore, unlike management development, they do not see these programs as a permanent feature of doing business in a high-tech environment.

This has created a "catch 22" situation since low cost training usually produces lousy results! As one nonprofit provider told this author, "They come to me for cheap skills training and go to you (as a management consultant) for expensive management training!" Retraining the American worker will remain in limbo until corporate America uses the same variety of quality providers for skills training they now use for management training. To encourage this major business culture shift, we must answer the bottom-line question, "can business determine the economic value added (return-on-investment [ROI]) of its training and development programs?"

Economic Value Added

The good news is that senior executives are showing increasing interest in determining the economic bottom line for every department of a business, including training. The demand for a precise return-on-investment is becoming louder because of international competition and quality pressures.

However, in the past finance managers have argued that it is not realistic to measure the long-term, qualitative effects of training and educational programs. We beg to differ. Here are several alternative economic evaluation programs.

Utility Analysis (Added Value)

How much is any training program worth? Utility analysis is a hard-data method for determining return-on-investment (ROI) of training by calculating the value of an intervention (i.e. a training program) minus its cost. Economic gain equals the training effect times the monetary value of that effect. This produced the following utility analysis equation:

Where F = N[(E x M)-C]

F=financial utility
N=number of people trained
E=effect of the training on the business
M=monetary value of the training effect
C=cost of the training per person

Casio (*Training and Development in Organizations*, Jossey-Bass, 1989) and Godkeivitsch (*Training* magazine, May 1987) have both written clear and detailed descriptions of how to use the utility analysis method over a broad range of training content and methods.

Time Value of Money

The National Planning Association has addressed training ROI in Crawrods and Webley's *Continuing Education and Training of the Workforce* (1992). This is also an added value approach through calculating the opportunity cost of training. The authors offer a set of economic formulas that compare a company's investment in a specific training program to other potential forms of investment. They give a step-by-step method for a company's financial officer to determine if the training productivity increase will give a greater ROI than investing the company's money in capital improvements, commercial paper, etc.

Performance Value

A third method is offered by Swanson and Gradous in *Forecasting Financial Benefits of Human Resource Development* (Jossey-Bass, 1988). They argue that it is better to forecast the potential results than to later evaluate the effect of training. Performance value helps to choose among training program options before investing in any program, rather than waiting to evaluate them until after the training has been completed.

This forecasting approach forces the business to determine the fiscal value of the operational problems to be addressed by the training program. How will quality, time, costs, and output issues translate into specific quantifiable training results? The authors offer a worksheet to calculate the performance value of a training program.

How Practical?

To accomplish effective ROI, trainers must first receive approval from senior management and their financial advisers for a specific financial analysis model and an acceptable rate of return. They need to be involved in determining how a financial return on training is calculated and measured. Remember that achieving a good, feasible rate-of-return (profit) in senior management's eyes is what the business is all about. Bringing the training department "on line" as another "revenue center" rather than just another "cost" means trainers are finally providing the monetary proof that "investing in people" will be profitable for any business. This holds equally true for either basic skill programs or more traditional management development. Total Quality Management (TQM) and other quality team efforts are contemporary areas in which ROI for training is gaining widespread interest. Poor quality in products or services may often cost tens of percent of economic value added. High potential training payoffs will only be reached if the specific education programs precisely uncover local TQM operational problems. European Union (EU) members and the Japanese have clearly demonstrated how high productivity gains can be achieved by using training to correct substantial business problems.

When will American senior managers also acknowledge the realities of FutureWork, and place work force education on the cutting edge of business? ¶

Designing Curriculum, continued

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Using ROI to Link Community College Resources and Workplace Training Needs

By Denise P. Rzonca and Jim M. Graber

Denise Rzonca *is Project Manager for the Chicago Southland Regional Workforce Preparation Initiative (CSRWPI). She has worked at South Suburban College for the past 4 years as a Workplace Literacy Training Consultant. She is an ILRDC Board Member and Vice President of the Business Association of Calumet City. She is also a Literacy Volunteer of America, and a member of the Board of Directors for a community library.*

Jim Graber, Ph.D. *is the Technical Study Consultant for CSRWPI. He is an Organizational Psychologist and has been with Graber Management Consultants, Evanston, IL since 1981. He designs and implements systems for training needs analysis, employee selection, performance appraisal, compensation, and organization diagnosis. He has been a visiting member of the faculty at the University of Illinois - Chicago since 1987.*

EDITOR'S NOTE: The previous article by Dr. Edward Gordon describes three economic analyses which could be applied to determining the Return-on-Investment (ROI) of a skills training program. This next article provides a case study. The authors describe how ROI was used in the Chicago Southland Regional Workforce Preparation Initiative to help companies understand the importance and financial impact of their skill gaps.

In the Chicago Southland area, modernization of plants and Total Quality Management (TQM) initiatives have been the driving force in training. Recent training delivered by Moraine Valley, Prairie State, and South Suburban College has confirmed a low level of basic skills. For example, instruction in statistical process control has been unsuccessful unless preceded by a class in basic math. In this study, we found that 48% of the participants had basic skills below the tenth grade level.

Most small to midsized companies find themselves in a real dilemma. They need to provide basic skills and higher level technical training. If they can't get the training, the companies have little chance of success. On the other hand, the cost for this training is prohibitive.

Community colleges have done a good job keeping the cost of training low. However, the largest percentage of wasted training dollars may be due to poor decision making on who a[illegible]t to train. For example, many companies use a "Grocery Store" training allocation approach that allows employees to pick and choose from the offerings, without a good measure of the benefit to be received. Others allocate training like a "Tidal Wave", flooding the same training over the whole organization, regardless of whether everyone needs the training or not. Cost effective training requires that we provide the *right* training for the *right* people at the *right* time and the *right* cost.

Our challenge is to identify the training with the biggest impact, so that the greatest possible return can be obtained for each dollar spent. This requires workforce audits so that companies know how to structure their training programs.

Because of the crucial need to link community college resources with the most critical training needs of the business community and individual workers, we formed the Chicago Southland regional Workforce Preparation Initiative (CSRWPI). It consists of the business and industry outreach divisions of Moraine Valley Community College, Prairie State College, and South Suburban College.

The initial effort of the consortium was a pilot study with nine companies and 572 employees from manufacturing, banking, and health care. The two main activities were:

1. Assessment of six basic skills of employees using the "Test of Adult Basic Education" (TABE). The skills are vocabulary, reading comprehension, language mechanics, language expression, mathematics computation, and mathematics concepts/applications.

2. Evaluation of job-specific skill gaps for employees using the "Training and Development Investment Manager" (TDIM), a skills assessment and software system. Project job analysts helped identify skill requirements. We used self-ratings, supervisor ratings, and test scores to evaluate employee skills.

The principal accomplishments were:

- Development of an **effective Return on Investment (ROI) training needs analysis model for community colleges** to accurately assess and prioritize workplace training gaps and link them with college resources.
- Determination of **basic skill levels** at nine companies for 572 employees.
- Evaluation of **job-specific skill levels and emerging gaps** for 321 employees in 84 jobs.
- Calculation of a **ranked critical skills list** showing the financial impact of 214 skills gaps found at the companies included in the study. Separate ranked lists of critical skill needs were developed for each company.
- Recommendation of a **high ROI curriculum** showing the community college courses that met the top ranked skill needs of the participating companies.
- Listing of **course rosters** indicating the individuals who can

benefit most from the suggested courses.

The application of ROI principles is one of the most important recent developments in training, and it is at the foundation of our work. Organizations cannot afford to make haphazard training investments. A poorly conceived training program often has little or no impact on productivity or effectiveness, and it precludes spending dollars on more worthwhile endeavors.

ROI analyses of training impact are still relatively rare, and there is no consensus yet on the single best approach. We used a variant of the Training & Development Investment Management (TDIM) ROI approach developed by SDC Corporation of Libertyville, Illinois. It has components of several of the approaches described by Dr. Gordon in the preceding article.

TDIM is a forecasting approach like the third approach described by Gordon. That is, it tells us the expected value of each training alternative *before* we train people. Having "foresight" has advantages over traditional evaluations that measure impact after training is delivered. Foresight helps avoid costly training mistakes, and it is more effective for persuading companies to undertake training.

Like "Utility Analysis (Added Value)," the first approach discussed by Gordon, TDIM estimates both the benefits and the costs of training. The benefit side of the equation considers:

- The size of skill gaps (the distance between current employee skill levels and optimum skill levels)
- The number of people who need a particular skill
- The relative value of a particular skill compared to other skills for a job
- The relative value of a job compared to other jobs within a company

The cost of the training is calculated by summing tuition or a share of instructor and development costs, lost productivity due to time away from work, training materials, facility costs, travel, meals, etc.

To evaluate the value of employee training, we begin by estimating the impact of an employee on the company. At a minimum, the value of an employee is the cost of his wages and benefits; otherwise, the company is losing money on that individual. Therefore, an employee making $35,000 a year and receiving a typical benefits package (about 40% of salary) has a value to the company of approximately $50,000 per year. However, some would argue that employee value should be estimated as sales per employee. In this case, a company that grosses $10 million per year and has 100 employees would have an average employee value of $100,000. We worked with the companies in this study to establish employee values that they were comfortable with, since it is the companies that must accept the results.

Once we have agreed on employee value, the cost of skill gaps can be calculated. For example, assume that John Smith's job is valued at $50,000. Through job analysis we determine that John has five key job accountabilities, and we determine a percentage weight of each, adding up to 100%. Suppose accountability "A" is judged to be 20% of his job. Therefore, it has an approximate impact of $10,000. If there are five critical skills that are considered necessary to perform this accountability, the impact of each of the skills would be approximately $2,000. Now, if John is only at a 50% proficiency level on a skill worth $2,000, we estimate that there is an annual performance gap of approximately $1,000.

Creating a database of training options is another important component. We evaluate training opportunities (e.g. college courses, internal company training, etc.) to determine the skills taught and the level of instruction, from beginning to advanced. Then, we can search the training database to determine our alternatives for addressing identified employee training gaps. Based on the cost of the selected training and its predicted benefit, we can calculate ROI.

We can tell a company that if they send John Smith to a particular training class, we estimate a 30% return. Is this a good investment? Maybe yes, but it depends on how this return compares with other training options. It is possible that we can get a **better** ROI from funding other training!

Using the ROI approach, we provided the following types of information to the companies:

Skill development needs lists for the nine companies (see figure 1)

These reports show the skill gaps and their ranked impact, the number of jobs for which the skill is critical, the average size of the gap, the average cost of the gap, and the total cost of the gap to the company.

Curriculum Recommendations (see figure 2)

The curriculum reports recommend the college courses that are likely to provide the best ROI to the company. Since we want to recommend a complete curriculum, we identify how many programs should be taught based on the number of

FIGURE 1: Skill Development Needs Lists for the Nine Companies

Need Rank	Skill	No. Jobs Critical	Avg. Job Gap	Avg. Cost	Total Cost
1	Read blueprints	134	0.017	$1,219	$163,293
2	Basic reading	239	0.007	$ 574	$137,184
3	Machine set-up	154	0.012	$ 889	$136,950

FIGURE 2: Scenario "A" Curriculum Course Detail

Rank	Abbreviated Title	No. of Programs	Total Cost	Net Return	% Net Return	No. of Trainees
1	Shop Process	2	$16,380	$47,762	291.6	22
2	Print Reading	2	$17,360	$43,362	249.8	24
2	Inventory Control	2	$ 7,900	$16,124	204.1	10

persons that would benefit and the maximum allowable class size. The ROI and the total number of trainees served is also provided. We can vary assumptions, such as the size of the available training budget, and then produce a number of training "scenarios" from which to choose.

Training Roster Reports (see figure 3)

Roster reports tell companies which employees are likely to gain the most from the courses suggested in the curriculum.

Basic Skills Profiles (see figure 4)

Company skill profile reports summarize achievement based on TABE test scores. In addition, reports are provided showing individual employee profiles (without names).

A variety of other reports can be provided using the data already collected, such as skill-based job descriptions and individual feedback reports, though we did not give these to the companies in this study.

Once we had the reports in hand, we sat down with company representatives to discuss the results. The number of critical skills we identified for each company varied, ranging from forty to ninety skills. As we expected, the companies did focus on the skill gaps showing the largest financial impact, generally on the order of five to ten skills. We also found that the companies, including those that had procrastinated for years on scheduling training, were motivated by these results to move ahead.

In conclusion, we believe that the wasteful approaches of the past for allocating training are simply not good enough. The ROI methods used in CSRWPI's pilot project are the kind that will be **required** in the future to gain the attention of employers. Most importantly, calculating ROI allows us to give top value to all of our clients, and that is truly our mission. ¶

FIGURE 3: Negotiation Skills Class Roster

Rank	Employee Name	Employee Title	Net benefit	% Net Return
1	John Smith	Manual Tapper	$4,208	532.7%
2	Vicky Jones	Gluer Feeder	$1,310	165.8%
3	Betsy Hernandez	Acct. Sup.	$ 425	53.8%

FIGURE 4: Company Basic Skills Profile

Count of Employees - 55

Average Employee Age - 38

Average Years of Education - 12.5

Average Years Employed - 9 years

Vocabulary	1.6 – 12.9	Average 5.9
Language	1.1 – 12.9	Average 5.7
Math	1.4 – 12.9	Average 8.6

Overall Grade Level - 6.7

Total Recommended For Training - 32

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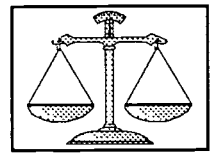
b) Scale 

c) Adding machine 

d) TDIM 

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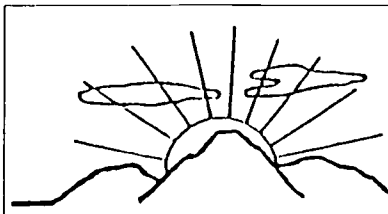

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Problem Solving, Teamwork, and Continuous Learning—Cornerstones for Success

By J. William McVey, Director, Center for Workforce Education

J. William McVey is director of the Center for Workforce Education, a unit of Laubach Literacy International, Syracuse, New York. McVey, with 27 years of adult education and training experience, focuses on workplace basic skills education. During his career, McVey has been a full-time adult basic skills educator, a vice president with a major educational publishing company, and the author of numerous adult education books, training materials, and articles.

In the new world business order in which U.S. firms struggle to re-establish the pre-eminence of U.S. business in the global marketplace, frontline workers need basic skills that go beyond the traditional. Skills such as higher-order thinking and the interpersonal skills required to solve problems and function effectively on work teams are basic to success. However, these "new basic skills" are not being widely taught by U.S. businesses in spite of the business community's apparent acceptance that they are key to future success and growth. To date, even those businesses that have begun training workers in the "new basic skills" have tended to move slowly to initiate continuous education and training programs that will ensure long-lasting improvements. U.S. businesses must take a hard look at their vested interests and enthusiastically embrace the "new basic skills" that will dramatically increase their competitiveness.

During the past several years, many U.S. enterprises have moved to bring in new technology and to build high performance work organizations in an effort to catch up with their foreign competition. But unlike their foreign competitors, especially the Germans and Japanese, most U.S. enterprises seem not to have learned that flexible, high performance work systems are made to work by empowered, involved, highly-skilled workers who not only can use machines equipped with the latest technological advances but who can make decisions and take responsibility previously undertaken only by bosses—people who can work together cooperatively with others to solve problems and implement change.

Do Employers Mean What They Say?

Progress in basic skills education e development of continuous learning environments in U.S. businesses, especially for frontline workers, has been painfully slow in spite of the stated desires of employers to have dramatically better trained and educated employees.

The skills employers claim to need and want today were clearly stated in a widely reported study of workplace basic skills conducted over a 34-month period beginning in 1986 by the American Society for Training and Development. "The skills that employers are looking for include problem solving, personal management, and interpersonal skills as well as the abilities to conceptualize, organize, and verbalize thoughts; to resolve conflicts; and to work in teams—all of these skills are critical but often lacking," said ASTD in its report *The Skills Employers Want.*

Many other studies and reports have substantiated the ASTD findings, including a major national report, *What Work Requires of Schools,* released in June 1991 by the U.S. Department of Labor Secretary's Commission on Achieving Necessary Skills (SCANS). The SCANS Report noted that workers will continue to need the traditional skills of reading, writing, and mathematics, but virtually all other skills needed to work effectively in today's workplace are those often thought of as "soft skills:"

- interpersonal skills (teamwork, teaching others, customer service, leading, negotiating, and working with people from culturally diverse backgrounds)
- information skills (acquiring and evaluating data, interpreting, and communicating)
- thinking skills (thinking creatively, making decisions, solving problems, knowing how to learn, and reasoning)
- personal qualities (individual responsibility, self-esteem, sociability, self-management, and integrity)

Yet in spite of their professed needs, few U.S. companies are providing even the barest traditional basic skills training to their workforces much less the higher order skills required to work effectively in the new work organizations they are in the process of creating. Across the nation, businesses are redesigning their organizations, but they are redesigning their work forces either haphazardly or not at all. Most employers continue to focus on one-time band-aid math and band-aid reading classes rather than teach employees the problem-solving and interpersonal skills that are the foundation for developing and implementing teamwork and self-management principles. Only a handful of companies are instituting continuous learning programs to accompany the often highly publicized continuous improvement programs that are part of their reengineered organizations. Employers need to discover that problem solving, teamwork, and continuous learning form the cornerstone for success in high performance organizations.

In a report, T*oday's Dilemma: Tomorrow's Competitive Edge*, the National Association of Manufacturers noted that only 23% of manufacturing companies offer basic skills training of any kind (either in the workplace or off site) to their workers. Yet, more than 50% of surveyed manufacturing companies report serious deficiencies not only in basic math and reading but also in problem-solving skills. In fact, the 1991 NAM report says that more than 25% of manufacturing companies report serious problem-solving deficiencies throughout their entire employee populations, not just in frontline workers.

Corroborating the NAM figures is a *Survey of Human Resources Trends* conducted by HRStrategies, Inc. in which manufacturing companies indicated that more than 50% of their frontline workers have serious literacy problems. These workers, they report, lack the ability to put basic ideas onto paper, and they lack the problem-solving and teamwork skills needed in the workplace.

Regarding the long-term commitment of employers to providing basic skills training, NAM's Senior Policy Director Phyllis Eisen said in an October 1993 article in the *Vocational Education Journal* that "only 4 percent of American businesses have invested in continuous training for employees, integration of technology into production and other attributes of high performance workplaces."

These trends continue in spite of evidence that impressive gains can be made by implementing continuous learning programs that emphasize development of higher order skills at all levels of the workforce. In 1993 the federal advisory Competitiveness Policy Council, after studying successful high performance companies, said that "the world's most competitive enterprises, those with peerless productivity and quality, have discovered that technology alone will not ensure competitiveness." In its report *Building High Performance Workplaces* the council says, "Technology must be utilized by a workforce that gives 'wisdom to the machine'—workers who have the kinds of skills that will allow powerful new technologies to be fully and effectively employed." The Competitiveness Council goes on to say, "The world's high performing firms, including many in the U.S., achieve impressive levels of productivity and quality by breaking down the walls of tradition—investing in people as well as machines, opening up decision-making, rewarding and encouraging constant improvement."

The Future of Workforce Basic Skills Education

The future of workforce basic skills education is not a series of disparate band-aid math, band-aid reading, or band-aid ESL classes. Truly competitive U.S. enterprises will provide continuous learning programs that will include extensive training in problem-solving, interpersonal, and communication skills for employees at all levels; the frontline worker will be seen as an equal and integral part of the equation for success. A number of established and highly publicized programs in large businesses demonstrate the point, but perhaps more importantly, continuous learning programs incorporating higher order skills are being successfully implemented in some small companies where, according to census data, fully two-thirds of the industrial workforce produce more than half the value added to U.S. manufacturing.

Saturn Makes the Case for Large Business

A much publicized success story is the education and training program at General Motors' Saturn assembly plant in Spring Hill, Tennessee. Some of the lessons and principles of the Saturn program were shared recently with a group of adult educators when Robert Boruff, Saturn's Vice President of Manufacturing in Spring Hill, spoke at a "Literacy and Work Roundtable" sponsored by the National Center on Adult Literacy at the October 1994 Annual Conference of the American Association for Adult and Continuing Education.

Make no mistake about it, said Saturn's Boruff, "we are in a global war to retain what we have, and that war will be fought and won on the manufacturing work floor." The war will be fought by high performance organizations, he said, but in order to achieve high performance, a number of basic skills are needed—major among them are problem solving and the oral and interpersonal skills needed to work together with others.

Everyone from the CEO down needs these basic skills, contends Boruff. "In the workplace," he says, "everyone will need soft skills" such as problem solving, communication, and knowing how to learn. And they will need an orientation to lifetime learning. He continues by saying, "We need to prepare both the high road and the low road learner," and in order to achieve our ends, continuous learning environments must be established and maintained.

At the Spring Hill Saturn plant, 1½ million hours of training have taken place with large and increasing amounts of total training time devoted to what Boruff describes as "basic skills:"

- gaining a general understanding of business and economic principles
- creativity and change
- problem solving and bringing problems to closure
- communicating ideas and concepts (a skill that provides access to the decision- making process)
- orientation to lifetime learning
- learning to learn
- leadership (a skill needed in high performance organizations if decision making is to be successfully placed in the hands of the workforce)

Grand Rapids Spring and Wire Points the Way for Small Business

Small companies can put high performance work organizations and continuous learning programs into place also. In Grand Rapids, Michigan, a small spring and wire company tripled its sales from 1985 to 1994 while increasing its labor force only 50%, largely due to a continuous education program that resulted in a redesigned workforce whose expectations, involvement, willingness to accept responsibility, and ability to make decisions enabled the company to upgrade equipment, provide faster delivery, and produce parts with near-zero defects.

Grand Rapids Spring and Wire president Jim Zawacki believes that continuous improvement requires continuous effort and an understanding of why things are being done. Zawacki is convinced that these goals are achieved in turn through education, training, and communication. As a result, every GRS&W employee, regardless of job, participates for at least one hour every other week in formal education activities that may include the introduction of new technologies and procedures but more frequently expose employees to concepts that foster personal growth and improvement. Through videotapes or sessions with external experts, employees learn techniques for improving their skills in communications, problem solving, conflict resolution, and other interpersonal relations.

Zawacki started his continuous learning program in a familiar way—he hired a local adult education provider to give a 48-hour math

course to his employees because they could not successfully participate in Statistical Process Control training. This course was followed by other stand-alone courses, but after only a short time, Zawacki initiated courses such as "how to send criticism" and "how to receive criticism" and made them mandatory for all employees. The positive results convinced Zawacki that a continuous education program that continually exposes employees to new ideas and concepts is a powerful tool for achieving business growth and for providing opportunities for personal growth to employees at the same time.

What Is Required?

If the success of Saturn and Grand Rapids Spring and Wire are to become commonplace rather than anomalies worthy of writing about because they stand out as oases in a desert, we must acknowledge that business globally is moving to high performance work systems, and these systems require a workforce dramatically different from that of the past.

If U.S. companies are to reestablish themselves in the elite of world-class business enterprises, they must give more than lip service to the importance of people to the process of improvement. U.S. business must recognize that continuous training and education that provides frontline workers with increasingly sophisticated skills is the key to success in today's marketplace. Business should be inspired by the experiences of Saturn and Grand Rapids Spring and Wire and initiate continuous, integrated training and education programs that may include traditional skill instruction but also provides the opportunity for employees to work steadily up the skills ladder until they acquire all of the "new basic skills" needed to operate world-class enterprises.

High performance work "is not just another workforce fad—it is a corporate culture change that is enormous in its long-term impact," says NAM's Eisen. And the success of that change depends to a great extent on the ability of an organization to provide meaningful, continuous education and training in the "new basic skills" of problem solving, teamwork, and the related skills of communication and interpersonal relations to its entire workforce, but especially to frontline workers. ☆

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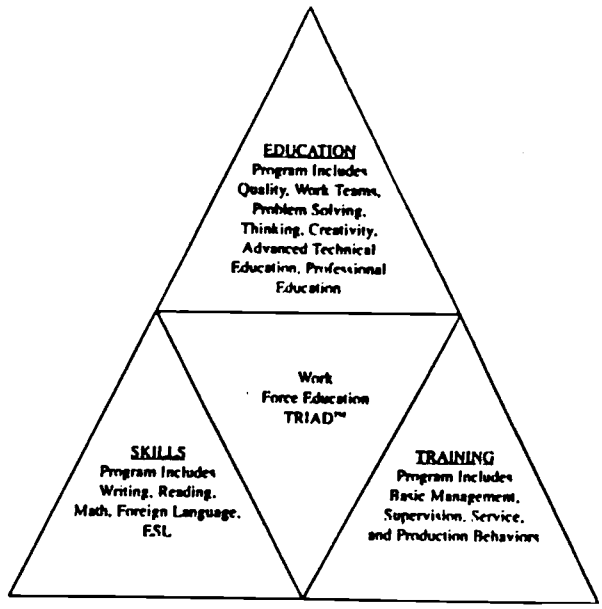

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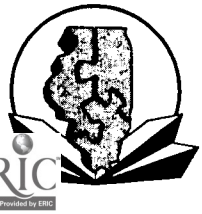

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