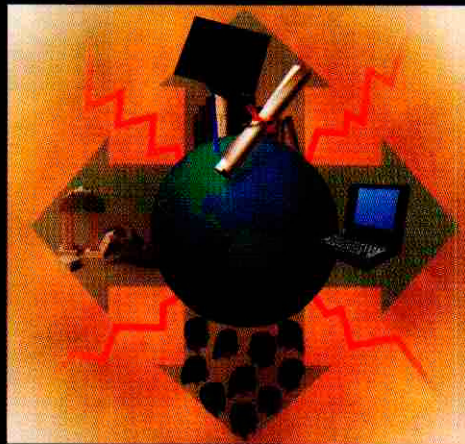


T R E N D S



Position Yourself for the Future

THE TEN TRENDS MOST LIKELY TO AFFECT
YOUR FUTURE, PLUS VIEWS OF THE WORKPLACE
IN 2020 AND BEYOND. THIS SPECIAL SECTION
PRESENTS THE RESULTS OF RESEARCH AND
STRATEGIC PLANNING BY THE AMERICAN SOCIETY
FOR TRAINING AND DEVELOPMENT ON THE
FUTURE OF THE PROFESSION .

The Top Ten Trends

BY LAURIE J. BASSI, GEORGE BENSON, AND SCOTT CHENEY

HERE'S SOLID DATA ABOUT THE TRENDS MOST LIKELY TO

AFFECT YOUR FUTURE. BUT READ CAREFULLY:

SOME OF THE FINDINGS GO AGAINST CONVENTIONAL WISDOM.

Knowing how your profession is evolving can help you position yourself for the future. Some of the trends we describe are already emerging; others can be foretold from certain signs. All are supported by studies, experts, and other data. First, a backdrop against which to view these 10 critical trends for HRD practitioners, training professionals, and performance specialists.

Two major forces—global competition and rapid technological advances—have profoundly changed, and will continue to change, the nature and content of work—especially in the United States, which for decades had enjoyed an unchallenged competitive advantage in many economic sectors.

Sustainable competitive advantage is no longer based on technology or machinery. Corporate leaders are saying, "People are our most important advantage." Even so, corporate America has undergone massive downsizing, restructuring, and reorganization.

At the same time, many organizations are creating high-performance work systems and transforming themselves into learning organizations. They're giving more responsibility to workers, who have been asked to do more with less, often for less. But it's not known whether such efforts will, in

fact, be successful, especially in light of the increasing pressure on workers.

Those changes have made the tasks of training professionals and departments more important, and more difficult. They too are being downsized, but they're also being asked to become a core part of their organizations—a refreshing new role. The training function is expanding beyond managing employees to shaping strategic direction. Training has become a strategic investment, not just a cost to be budgeted.

On surveys, training executives say aligning training with core business goals is a top priority. Yet, many business leaders think that training professionals don't fully understand the mission and business of the companies they work in. It will be critical for HRD and training departments to close the gap between the recognized goals of alignment and the perceptions of senior management.

The HRD profession also faces these challenges:

- how to ensure successful customer satisfaction
- how to move from training to performance improvement
- how to keep up with the pace of reengineering
- how to manage and train current and new employees
- how to attract qualified workers
- how to maximize training technology.

One strategy is to move



training closer to people's jobs through just-in-time and just-what's-needed interventions. That approach addresses strategic business concerns and makes more efficient use of time and resources. Modular training in short, flexible courses focused on specific needs is already replacing traditional classes.

Though such developments may improve an organization's capacity to meet short-term training needs, they may not be consistent with long-term goals, such as promoting organizational learning and skill building. And they may not be the best way to attract the most desirable workers. Decreasing wages and less job security will make workers more interested in having flexible skills deemed essential by their organizations and the marketplace.

In other words, the most cost-effective training strategies in the short run may not meet an organization's long-run needs. Training strategies that focus on narrow, specific needs can make it difficult to attract and retain the most qualified workers, who will expect their employers to provide opportunities for helping ensure their ongoing employability.

Here are the top 10 trends you need to know about. They aren't listed in order of importance. In fact, they're inter-related and reinforcing. They herald where the profession is going and how you can direct your development accordingly.

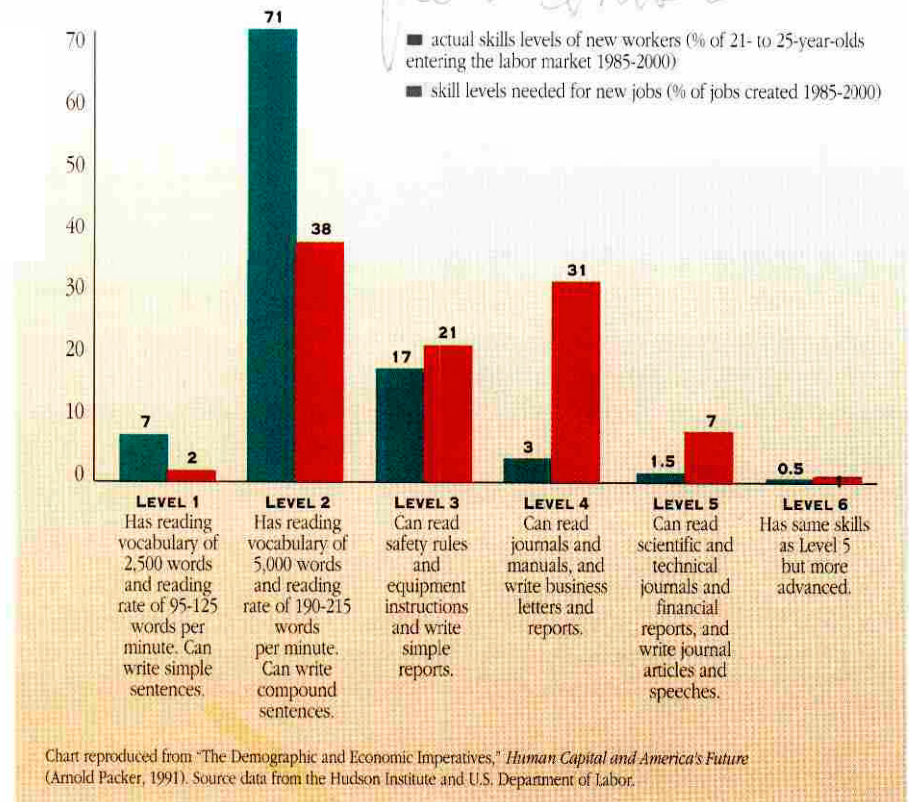
TREND 1

SKILL REQUIREMENTS WILL CONTINUE TO INCREASE IN RESPONSE TO RAPID TECHNOLOGICAL CHANGE.

This demand has been growing substantially during the past 20 years. Simply put, more sophisticated machinery and work processes require more sophisticated workers.

The increase in the demand for skills has led to an increase in the need for training. Between 1981 and 1993, there was a 17 percent increase in the number of employees that reported getting any type of skill-improvement training at work, according to the Current Population Survey by the U.S. Department of Commerce, Bureau of the Census. During that same period, there has been a 45 percent increase in the number of workers receiving formal training. ASTD estimates that the amount that U.S. employers spend on formal training for employees has risen since 1983 nearly 20 percent—adjusted for inflation—but that it has not kept pace with the number of workers ("Expenditures on Employer-Provided

FIGURE 1: THE JOB SKILLS GAP 1985-2000



Training," Laurie J. Bassi, ASTD, July 1996).

As the demand for training in critical skills grows, training professionals will have to ensure that more workers receive such training, and cost-effectively.

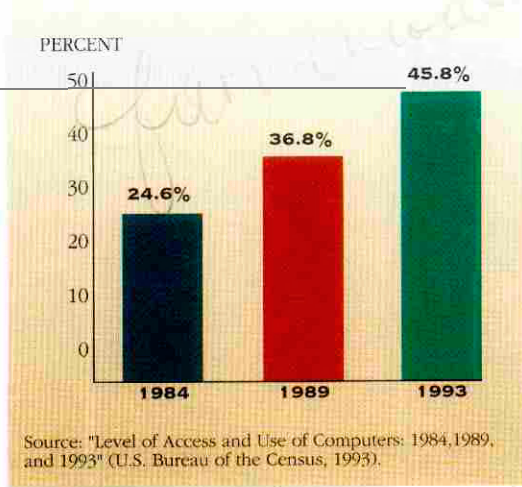
SKILL REQUIREMENTS. More than half of the new jobs created between 1984 and 2005 will require some education beyond high school, up from 31 percent of all jobs in 1983 requiring such education, according to the Hudson Institute of Indianapolis, Indiana, and the U.S. Department of Labor. (See *Workforce 2000: Work and Workers for the 21st Century*, 1987.)

From 1970 through 1990, job requirements increasingly included cognitive and interpersonal skills. The number of jobs requiring cognitive skills increased 11 percent; those requiring interpersonal skills increased 19 percent. The jobs requiring motor skills decreased 4.5 percent.

A job-skill gap is also forming. For jobs created from 1985 to 2000, the skills most in demand will be at levels requiring the ability to read manuals, technical journals, and financial reports and the ability to write business letters, journal articles, and detailed reports. However, the reading and writing skills of workers entering the labor market during the same time is, and will continue to be, much lower. (See Figure 1.)

COMPUTER LITERACY. Information from the U.S.

FIGURE 2: WORKERS USING A COMPUTER IN THEIR JOBS



Bureau of the Census clearly demonstrates the growing demand for computer skills in the workplace. Since 1984, the number of workers that use a computer in their jobs has risen from 25 percent to 46 percent. (See Figure 2.)

Between 1990 and 1993, the need for computer literacy for managers and other professionals rose 35 percent, according to "Managing Today's Workplace"—a report from the Olsten Forum for Information Management of the Olsten Corporation, based in Westbury, New York. Now, more than 70 percent of management positions require computer-literacy skills.

Incidentally, the increase in the need for such skills for administrative workers has been less dramatic because many companies had already mandated computer-literacy skills for that group of workers by 1990.

In a survey of 994 training professionals conducted at the 1996 International Conference of the American Society for Training and Development, nearly 73 percent said that computer skills are essential for employment.

SKILLS-WAGE GAP. The importance of technology has created a wage premium for workers with the appropriate skills.

The Department of Labor reports a significant widening during the 1980s in the difference in earnings between high school graduates and workers with a college education. In 1979, a male college graduate age 25 to 64 working full-time could expect to earn 49 percent more than his counterpart with a high school diploma. By 1993, the wage difference rose to 89 percent.

The wage gap of the 1980s, however, has probably reached a plateau, says University of Chicago economist Kevin M. Murphy ("Wage Gap Finally Hits Plateau for College, High School Degree" by Michael M. Phillips, *Wall Street Journal Interactive Edition*, July 22, 1996). Murphy theorizes that more use of computers and other technologies has raised the wage potential of workers with strong skills so that more job applicants are seeking college educations and job training.

Though the widening of the skills wage gap appears to have slowed, there is still a well-docu-

mented relationship between schooling and earnings. Economists disagree on the extent of the effect, but many studies show that education leads to higher earnings. Each additional year of formal schooling is associated with a five to 15 percent increase in total earnings over a lifetime.

TREND 2

THE AMERICAN WORKFORCE WILL BE SIGNIFICANTLY MORE EDUCATED AND MORE DIVERSE.

Traditionally, the most educated workers receive the most training from employers. Women and minorities—as well as temporary, part-time, and older workers—receive less training than prime-age white male workers.

If those patterns continue, they will cause conflicting forces in the workplace. For example, workers' higher education levels suggest that more training should take place, but the increasing diversity among workers suggests that providing the appropriate training may be difficult. Given Trend 1, it seems likely that the first force will prevail: The demand for training to reach more workers will grow.

The challenge for training professionals is clear: Training practices must become more sophisticated and adaptable to meet the diverse learning needs of the new workforce.

WORKFORCE EDUCATION. Americans are staying in school longer than ever before. Yet, recruiting skilled workers was listed as the third most difficult challenge of HRD executives, according to *Human Resource Executive* (January, 1996).

A 1993 National Adult Literacy Survey, conducted by the U.S. Department of Education, showed that 90 million adults in the United States had low-level literacy skills. Such adults would have trouble adding up checks on a bank deposit slip, making inferences from printed material, and writing compound sentences. Yet, more than one-third of the 90 million were employed full-time.

Regarding federal- and state-government training policies, the trend is away from providing training programs towards providing information and financial assistance to people so that they can seek appropriate training on their own. In addition, federal and state governments are starting to encourage private-sector development and "ownership" of such aspects of training as certification, skill standards, youth apprenticeship, and labor-market information.

A MORE DIVERSE WORKFORCE. The percentage of women and nonwhite people in the American workforce will grow through 2005, according to the Bureau of Labor Statistics. (See Table 1.)

The number of Hispanic and Asian workers will increase, though the number of nonHispanic white workers will decrease from 77 percent in 1994 to 73 percent by 2005. The percentage of black nonHispanic workers will stay the same.

AN AGING WORKFORCE. The Bureau of Labor Statistics estimates that the number of workers age 55 to 64 will increase from 9 percent in 1994 to 12 percent in 2005; the number of workers age 25 to 34 will decrease between 1994 and 2005, from 26 percent to 21 percent. Currently, 18 percent of part-time workers are age 55 or older.

Some studies show that the work prospects for older employees have diminished. For example, job insecurity due to downsizing may affect older workers more than younger workers. In fact, job loss among older workers, especially men, has risen, says Henry S. Farber of Princeton University in his paper, "The Changing Face of Job Loss in the United States 1981-1993." The reasons may be that many older workers find it harder than younger workers to adjust to new ways of working, to adapt to new technologies, and to become more competitive.

THE TEMPORARY WORKFORCE. The number of self-employed and contract workers grew consistently from the early 1970s through 1994. The temporary-staffing industry now accounts for \$39.2 billion in revenues annually, according to "High-Tech Firms Rely More on the New Breed of Temp Worker" by Omar L. Gallaga (*Wall Street Journal Interactive Edition*, July 31, 1996).

A Bureau of Labor Statistics report, "Employment Outlook: 1994-2005 Job Quality and Other Aspects of Projected Employment Growth," estimates that employment in personnel-supply services will continue to grow 4.3 percent annually, the fourth largest industry growth from 1994 to 2005. The industries with the highest growth will be health services (5.7 percent), residential care (5.6 percent), and data-processing and computer services (4.9 percent).

Such growth is not just a short-term response to downturns in business cycles. Following the recession in the early 1990s, the temporary-staffing industry accounted for 9.9 percent of the growth in overall employment in the United States, far in excess of its share of total, nonfarm employment.

The composition of workers in this industry has also changed. Gallaga's article in the *Wall Street Interactive Edition* reports that the industry payroll for technical and professional temporary workers jumped from \$2.2 billion in 1991 to \$4.9 billion last year.

TREND 3

CORPORATE RESTRUCTURING WILL CONTINUE TO RESHAPE THE BUSINESS ENVIRONMENT.

The same forces creating a growing need for training are also making it difficult to provide training. Histori-



TABLE 1: U.S. LABOR FORCE BY GENDER, RACE, AND AGE 1994-2005

U.S. LABOR FORCE	1994	2005 (ESTIMATED)
Men	54%	52%
Women	46%	48%
White, nonHispanic	77%	73%
Black, nonHispanic	11%	11%
Hispanic	9%	11%
Asian, other nonHispanic	3%	4%
Age 16-19	6%	6%
20-24	11%	10%
25-34	26%	21%
35-44	27%	24%
45-54	19%	24%
55-64	9%	12%
65 and older	3%	3%

Source: "Employment Outlook: 1994-2005 Job Quality and Other Aspects of Projected Employment Growth" (U.S. Department of Labor, Bureau of Labor Statistics, 1995).

cally, *Fortune* 500 employers accounted for a bigger share of training because their workers had stable job prospects. Though job tenure hasn't declined overall, it has declined for males over age 40. Employment in *Fortune* 500 firms shrank as job creation shifted to small- and medium-sized firms, which traditionally have provided less formal training than large employers.

In general, employees give large companies high marks for providing new job skills and low marks for their loyalty to employees. Interestingly, employees that rank their employers low on loyalty tend to be more receptive to learning new skills.

Those indicators suggest that performance improvement specialists operate in complex work environments. Large firms no longer provide stable environments for training, and small firms experiencing growth offered little training in the past. But now, the kind of companies that provided the least training in the past appear to be the most promising prospects for training in the future.

THE DOWNSIZED WORKFORCE.

Though the number of companies that eliminated jobs increased in the past three years, there are indications of a slowdown. The percentage of firms that downsized decreased from 32.6 in 1992 to 30.6 in

FIGURE 3: DOWNWARD DOWNSIZING



Source: "Corporate Downsizing, Job Elimination, and Job Creation: Summary of Key Findings" (American Management Association, 1995).

1993 to 27.3 in 1994. Among respondents to a 1995 survey of American business leaders conducted by Wilton, Connecticut-based Deloitte and Touche, 69 percent of senior executives and 62 percent of HRD executives said that their organizations are not planning to downsize in the near future. (See Figure 3.)

Still, managers are being displaced at rates disproportionate to their percentage in the labor market, and they have continued to account for higher percentages of all displaced workers, according to the 1995 report "Corporate Downsizing, Job Elimination, and Job Creation: Summary of Findings" from the American Management Association, based in New York. Older and more educated workers have also experienced more job loss.

THE GROWTH OF SMALL BUSINESS. Job creation during the first part of the 1990s was dominated by firms with fewer than 500 employees, according to data from the Small Business Adminis-

tration, based in Washington, D.C.

That's a sign that the training industry must prepare to meet the needs of small- and medium-sized employers. More small businesses also mean more one-person, full-service training departments and more training done by nontraditional training staff.

JOB SECURITY. There is a growing perception that job security is a thing of the past. In the Deloitte and Touche survey, 53 percent of senior executives and 49 percent of HRD executives said that there is no such thing as job security. Still, the length of time on average that workers have been with the same employer has changed little since the early 1980s.

But for some demographic groups, there have been significant changes in job tenure from 1983 to 1991, according to the Department of Labor's "1996 Report on the American Workforce." Among men over age 40, median tenure has declined; for women of the same age, median tenure has risen. Median job tenure declined for workers without a high school education. The median tenure of men and women with four or more years of post-secondary education increased.

EMPLOYEE MORALE. Not surprisingly, employee morale has taken a tumble. Generally, employees are proud of their work and their employers, according to a 1995 employee-attitude survey conducted by the Hay Group, based in Philadelphia. But the survey also found that many workers don't have a high regard for their supervisors or job training.

In large companies, most workers say that they are satisfied with their jobs and opportunities. In a survey conducted by *Inc.* magazine and the Gallup Organization, 84 percent of respondents answered "yes" to this question: "This past year, have you had opportunities at work to learn and grow?"

Yet, many workers have poor perceptions of others' job security and the state of the economy.

TABLE 2: EMPLOYEES RATE U.S. COMPANIES

How would you rate large companies in America on these points?

	EXCELLENT	PRETTY GOOD	ONLY FAIR	POOR	NOT SURE
● training employees in new job skills	8%	31%	40%	19%	2%
● providing reasonable wages, salaries, and benefits	4%	32%	47%	16%	15%
● creating new job opportunities	4%	26%	45%	24%	1%
● providing job security	3%	19%	36%	41%	1%
● showing loyalty to employees	3%	18%	38%	40%	1%

Source: Survey of 1,004 employees (*Business Week* and Louis Harris & Associates, 1996).

In a survey by *Business Week* and the Harris Poll, 77 percent of respondents rated large companies "fair" to "poor" in providing job security (see Table 2). (See also "America: Land of the Shaken" edited by Mark N. Vamos, *Business Week*, March 11, 1996, and "The Happiest Workers in the World" by Jeffrey L. Seglin, *Inc.*, May 1996.)

There also seems to be a communications gap between employers and employees on how to improve morale. In "Employee Motivation: Addressing a Crucial Factor in Your Organization's Performance" (*Employment Relations Today*, Summer 1995), Kenneth A. Kovach reports on a poll that asked 1,000 employees and 1,000 employers to rank morale boosters. The booster that employees gave the highest ranking was "interesting work." In contrast, employers ranked "higher wages" at the top of what employees want.

TREND 4

CORPORATE TRAINING DEPARTMENTS WILL CHANGE DRAMATICALLY IN SIZE AND COMPOSITION.

Already, training departments have shrunk, and outsourcing has become prevalent.

An implication of those changes is that a greater proportion of training professionals will operate as independent consultants outside of traditional organizational training departments. They will have to be responsible for their own development, and they will have to approach training with a more entrepreneurial view as the consultative role takes precedence.

DOWNSIZING THE DEPARTMENTS. According to the booklet *Rethinking Human Resources: A Research Report* (the Conference Board, New York, 1995)—in which such companies as Chevron, IBM, Motorola, and Xerox were interviewed—58 percent of large U.S. corporations have downsized their HRD departments.

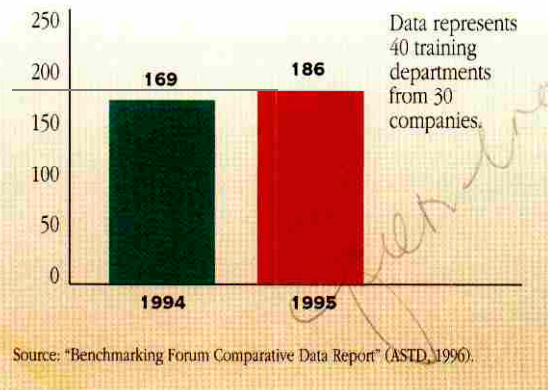
In "Views From the Top" (*Human Resource Executive*, January 1996), Angela Walker reports on a survey in which 31 percent of responding companies said that they experienced a decrease in the size of their training departments in 1995; 18 percent experienced an increase.

Among the 50 member companies of ASTD's Benchmarking Forum, the number of training staff declined in 1995 by 50 percent and more in some companies. But across Forum companies, the number of employees served by each training staff member increased from 169 to 186. (See Figure 4.)

Sixty-six percent of the respondents to FaxForum in *Training & Development* (January, 1996) said that they expect to be external providers within 10 years; 24 percent described themselves as external providers now.

CHANGING DEMOGRAPHICS. Periodic *Training & Development* reader surveys show that in the past 10 years, the percentage of women members in ASTD has increased every year and is now 55 per-

FIGURE 4: NUMBER OF EMPLOYEES SERVED PER TRAINING STAFF MEMBER



cent. The proportion of women in the training profession will likely continue to grow as well, based on their tenure in the field.

The 1995 *T&D* Reader Survey shows that most respondents with less than one year in the profession are women. Most of the respondents with more than 20 years of experience are men. The survey also found that 65 percent of one-person training operations are staffed by women. It seems that women, who were more likely to work in small-and medium-sized businesses in the past, are now providing a large share of training.

TREND 5

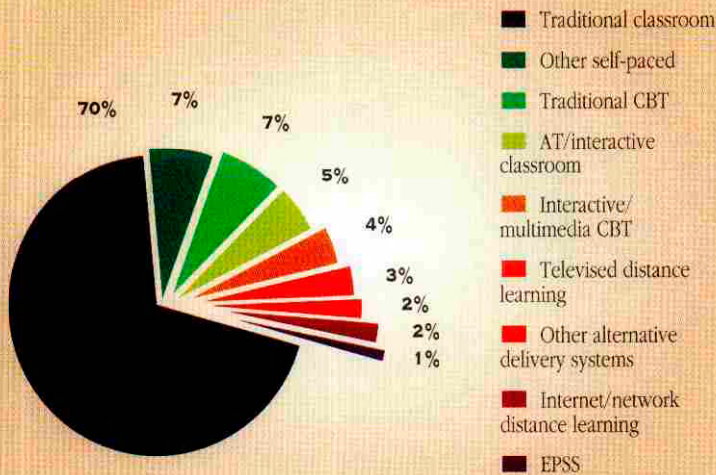
ADVANCES IN TECHNOLOGY WILL REVOLUTIONIZE THE WAY TRAINING IS DELIVERED.

Traditional classroom delivery of training still predominates, but the use of technology-based delivery will increase immensely. Advances in hardware, computer networking, multimedia software, and videoconferencing have tremendous potential for multiple-site delivery and for bringing training closer to people's work sites.

Within organizations, the increased use of technology is due to many forces: smaller training departments, shorter product cycle times, less employee travel to cut costs and time away from work for training, and the need to keep employees updated on changing skill requirements. But in order to use technology effectively, training professionals must know the appropriate situations and content for each learning platform.

A major implication of the shift towards technology-based training is the need for training professionals to work in tandem with technical experts to develop such systems. Training departments must partner with such departments as information technology and information systems. In many cases, those departments are leading the way in developing expert systems and electronic performance support systems, and in delivering training via computer networks.

FIGURE 5: TRAINING TIME BY DELIVERY SYSTEM



Source: ASTD and Members of the Benchmarking Forum, 1996.

Though the use of technology is gaining ground, evidence indicates that many companies are cautious about how, and how much, technology-based delivery should be part of training. Surveys of the member companies of ASTD's Benchmarking Forum show that many still don't use technologies for a significant part of training delivery. Although reliance on classroom training is decreasing, classroom sessions accounted for 70 percent of all training in Forum companies in 1995. (See Figure 5.)

As the quality of technology continues to improve and technology-delivered training becomes more pervasive, technology-based delivery will become a tried-and-true approach.

EPSS AND EMBEDDED SUPPORT. In a 1994 survey on emerging technologies conducted by the International Society for Performance Improvement in Washington, D.C., responding companies predicted that EPSS applications would become the most commonly introduced new technology. In contrast, the 1995 *Training & Development* Reader Survey shows that it is the least-used technology.

Though one-third of the training departments in the Benchmarking Forum companies say that they already use EPSS for training delivery, it typically accounts for less than 10 percent of all training time.

COMPUTER-BASED TRAINING. Based on various surveys, computer-based training budgets are on the rise, especially for off-the-shelf courseware. Improvements in the quality of CBT packages and in the hardware capabilities of multimedia, animation, and video have made trainers more confident in using such technology.

The market for multimedia training increased

by 53 percent between 1991 and 1995, according to "Study Projects Multimedia Industry To Quadruple by 2000" by Luc Hatlestad (*InfoWorld*, IDG Communications, San Mateo, California, May 8, 1995).

A 1996 report on computer-based training, "A Comprehensive Study of CBT and Multimedia as Instructional Delivery Systems," (SB Communications, Hingham, Massachusetts) by Floyd Kemske—author of *Human Resources: A Corporate Nightmare* and *The Virtual Boss* (Catbird Press)—found that the use of CD-ROM as a delivery platform for CBT had increased and that the emergence of CD-ROM and LAN-based delivery systems indicates a trend towards centralized CBT delivery overall.

THE INTERNET AND INTRANETS. The Internet offers people access to data, other users, and a wealth of information at a speed and scope never before possible. Internet use has taken off since 1990, gaining two new users per minute.

Recent advances in software programs have made it easier to access and use the Internet. For trainers and HRD professionals, the Internet has almost unlimited potential, especially for professional development. Newsgroups, listservs, and the World Wide Web offer ways to exchange information and experiences with colleagues around the world. The Internet provides connection to a wealth of resources as training professionals continue to look outside their organizations for development opportunities.

We're also beginning to see the application of the Internet and company intranets (internal computer networks) for multiple-site delivery of training and performance support. The Internet has tremendous advantages over current CBT technology in both cost and convenience. Using the WWW is paperless, requiring no postage and limited printing costs. You can make course updates instantaneously, without recalling diskettes or reprinting CD-ROMs. Courses delivered via the Web are independent of platforms and operating systems, requiring only a modem and Internet access.

Still, the Internet has a long way to go before it eventually becomes an integral part of every trainer's tool kit. Limited bandwidth capabilities and the sometimes snail's pace of downloading still make the delivery of video, sound, and animation somewhat cumbersome. And the Internet's limited interactivity in many cases makes it inappropriate for some training applications.

DISTANCE LEARNING. The new techniques and technologies of distance learning have the potential to revolutionize executive education, says Alan F. White, senior associate dean with the Sloan School of Management of the Massachusetts Institute of Technology ("Virtual B-Schools,"

John A. Byrne, *Business Week*, October 23, 1995).

MIT, Harvard, Dartmouth, and the University of Michigan are among a growing number of universities whose business schools are making standard courses and customized instruction available to executives through the use of distance-learning technologies.

The use of distance-learning technology and short, customized training meets the needs of corporate executives, especially with reductions in training staff and budgets.

For example, Westcott Communications—an education and training firm based in Carrollton, Texas—is working with eight business schools (including the Wharton School at the University of Pennsylvania) to provide high-tech executive education. The venture, the Executive Education Network, has nearly 100 corporate classrooms at such companies as Eastman Kodak, Walt Disney, and Texas Instruments.

TREND 6

TRAINING DEPARTMENTS WILL FIND NEW WAYS TO DELIVER SERVICES.

Training and HRD departments have hardly been immune to the massive changes in U.S. organizations. Such departments have been downsized, restructured, outsourced, and asked to do more with less. At the same time, they're being pushed to move instruction closer to people's work sites in order to reduce costs and deliver training in more flexible environments. Training departments are being realigned right along with strategic business units, reflecting the overall trend away from traditional, hierarchical bureaucratic structures.

That ongoing shift raises new challenges for training professionals, who are finding that they're increasingly responsible for purchasing training from outside. To cope with the growing demand for quality instruction, training departments are creating structures to support networks of internal and external training providers. An organization's training department is no longer seen as the sole provider of training; increasingly, it acts as a broker of learning services.

Training professionals face a daunting challenge in having to ensure that purchased training meets specific needs and that it's available when and where it is needed, at a price that makes sense.

As reliance on external providers grows, trainers will become more responsible for managing training suppliers. They will need skills in contract negotiation and make-or-buy analysis. Trainers will take on internal consulting roles as the responsibility for training and development moves to line managers, supervisors, and employees. Train-the-trainer course development will become more common, and more critical.

Generally, training professionals will have to

be ready to explore new ways to organize internal and external networks of experts and resources in order to get the job done in even leaner environments.

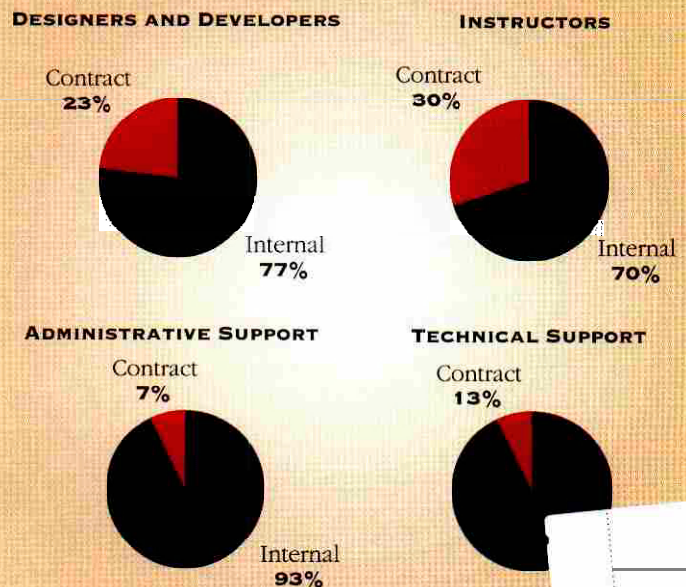
OUTSOURCING. For one perspective on outsourcing, it's widespread, but not dominant, among ASTD Benchmarking Forum companies, which are some of the most successful companies in the world, including Xerox, AT&T, Boeing, Aetna, Chase Manhattan Bank, Unisys, American Express Financial Services, Pacific Bell, Chevron, Andersen Consulting, General Motors, Polaroid, and IBM.

In Forum firms, contract workers make up on average 23 percent of the training design and development staff and 30 percent of instructors. Outsourcing is less common for technical support, averaging 13 percent of contract staff in Forum companies. The least outsourced function is administrative support. (See Figure 6.)

The "1995 Summary of Employer-Provided Training" from the Bureau of Labor Statistics shows that size influences the proportion of a company's total training expenditure on external suppliers. Companies with fewer than 100 employees are more likely to have a larger percentage of training dollars go to outside suppliers.

The management of suppliers creates a new role for training professionals. They must know how to select qualified suppliers and how to assure that they provide effective, on-target services. The relationship between a buyer and a supplier involves more than the procurement of services

FIGURE 6: PERCENTAGE OF INTERNAL AND CONTRACT STAFF BY JOB FUNCTION



Source: "Benchmarking Forum Comparative Data Report" (ASTD, 1996)

based on a cost-benefit analysis. The buyer should be able to impart the larger mission and culture of his or her organization to the supplier.

The Benchmarking Forum companies use several criteria when selecting training suppliers. More than cost, the most frequently used criteria are the fit between a potential supplier's skills and the project requirements, the quality of the supplier's project design, and the supplier's understanding of the organization's work requirements.

PARTNERSHIPS. Many community colleges and universities are developing departments to respond to the needs of businesses and their employees. The American Association of Community and Junior Colleges, based in Washington, D.C., estimates that 90 percent of its member colleges are, to some extent, in the business of training workers at companies, instead of just teaching subjects or trades. About 50 percent have average yearly revenues of \$1 million, according to David Stamps in "Community Colleges Go Corporate" (*Training*, December 1995).

The Consortium for Supplier Training—made up of six companies: Bayer, Chrysler, Eastman Kodak, Motorola, Texas Instruments, and Xerox—has established formal ties with six community colleges and one university to provide training to the member companies' network of suppliers. The Consortium chooses the training courses, trains and certifies the colleges to provide the training, and makes the training available to the suppliers.

Many community colleges are also busy designing their services to be more amenable to the needs of businesses. For example, Kellogg Community College in Battle Creek, Michigan, provides just-in-time training, an open-entry/open-exit policy, and an open-registration procedure that lets companies send employees to the college's regional manufacturing technology center at a moment's notice. Kellogg's curriculum lets employees choose only the skills they need to master, providing a more cost-effective service.

TREND 7

TRAINING PROFESSIONALS WILL FOCUS MORE ON INTERVENTIONS IN PERFORMANCE IMPROVEMENT.

The relentless drumbeat of global competition has caused organizations to focus on every aspect of their operations, questioning how each function and process can contribute to strategic goals. Training departments are also under pressure to demonstrate their organizational value in the same terms. A paradigm shift is well underway in which training professionals must redirect their focus from tra-

ditional development inputs (classes, hours, and so forth) to outputs (performance at individual and organizational levels).

In the survey of training professionals at ASTD's 1996 International Conference, almost 89 percent "strongly agreed" or "agreed" that a shift from training to performance improvement is one of the most important trends in the field.

That shift is manifesting itself in changing titles, changing perceptions, and changing skill requirements for training professionals. They now borrow from such areas as organizational development, industrial and organizational psychology, and strategic human resources to provide performance improvement interventions, moving away from traditional training approaches. That, in turn, is resulting in more focus on aligning work practices and human resource management with high-performance work systems.

The shift to performance improvement has great potential for transforming training and increasing its value to organizations. In that area, however, trainers still have a lot to learn.

CHANGING PERCEPTIONS. ASTD's 1993 National HRD Executive Survey asked about changes taking place in training. Sixty percent of the respondents "disagreed" or "strongly disagreed" that the functions of a training department as we've known it would fade by 1995 or disappear by 2000. But when the same question was posed in 1995, 42 percent of respondents "strongly agreed" and 42 percent "agreed"—84 percent total—that the functions of the training department were already changing rapidly and that by 2000, training would balance with performance support.

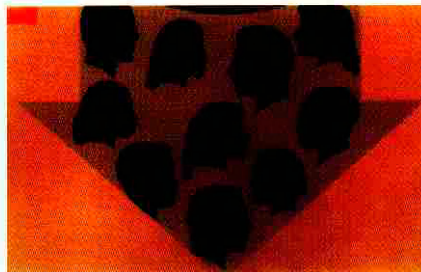
CHANGING TITLES. When *Training & Development* asked readers in the December 1995 FaxForum which term best described them professionally, 40 percent of the respondents said, "performance improvement specialist."

Among the Benchmarking Forum companies, many training departments have far from traditional titles.

Here are just a few:

- Performance and Organizational Support Services
- Skills, Strategy, and Vitality
- Learning Strategy
- Learning Consultants
- Strategic Requirements Group.

But does a title change mean a change in responsibility? Perhaps. Many HRD practitioners now actively promote a shift from *training* to *improving employee performance*. They acknowledge that training alone isn't likely to solve a performance problem.



Joe Harless, a pioneer of performance technology, says that in the interventions that he and his associates have performed in more than 600 companies, 85 percent of the time the performance problem was not related to a lack of skill or knowledge. That means that if the company had implemented a training fix, the performance problem wouldn't have gone away.

CHANGING COMPETENCIES AND SKILL REQUIREMENTS. An immediate implication of the move to performance support is that trainers and HRD practitioners must expand their competencies. *ASTD Models for Human Performance Improvement: Roles, Competencies, and Outputs* by William Rothwell (ASTD, 1996) describes the essential competencies for the roles and steps in human performance improvement. (See the box on page 40, "Competencies for the Future.")

In ASTD's 1995 HRD Executive Survey, 73 percent of the executives responding think that training managers and staff are not prepared for performance support, up from 68 percent in the 1993 survey.

MEASUREMENT AND EVALUATION. One indication of being unprepared is the little amount of evaluation being done. Among the Benchmarking Forum companies, only Level 1 evaluations (based on Donald Kirkpatrick's four-level framework) are common, conducted for 94 percent of all courses. Only 13 percent are evaluated in terms of on-the-job performance; just three percent are evaluated for financial impact. Two-thirds of the training departments don't perform any rigorous, quantitative studies to determine the return on their training investment. (See Figure 7.)

AME newsletter—published by Linkage, based in Boston—confirms the lack of extensive evaluation. It says that 42 percent of U.S. companies perform Level 1 evaluations, 43 percent conduct Level 2 evaluations, 34 percent conduct Level 3 evaluations, and 16 percent conduct Level 4 evaluations.

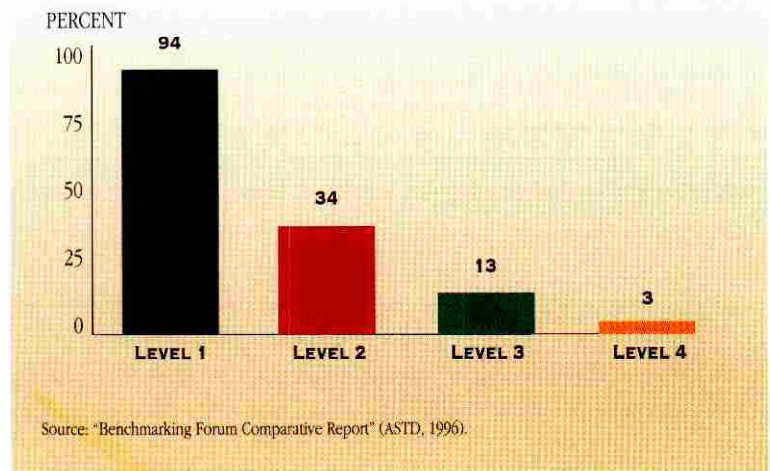
A possible reason for the lack of measurement is that the measures aren't efficient. In "Performance Takes Training to New Heights" (*Training & Development*, September 1995), performance consultants James Robinson and Dana Gaines Robinson say that traditional training departments tend to be held accountable for these kinds of measures:

- the number of instructor and trainee days per year
- the number of different or new courses in a year
- the overall results from trainee-reaction surveys and tests completed as part of a training program
- the number of training days per employee.

They advise that performance improvement departments should focus instead on these measurements:

FIGURE 7: WHICH LEVEL EVALUATION?

Percentage of courses evaluated at each level of Donald Kirkpatrick's four-level framework.



- the degree to which new skills transfer to the workforce
- the degree to which individual and group performance improves
- the degree to which training contributes to specific business goals
- the quantity and quality of client relationships
- the number of performance contracts agreed to and met in a year.

TREND 8

INTEGRATED HIGH-PERFORMANCE WORK SYSTEMS WILL PROLIFERATE.

Training departments—like all business units—are being forced to re-examine their role and to focus more on creating measurable results. The new emphasis will be on creating systems that align the separate efforts of functions, departments, and people.

(For further reading, see "Synergy: The Power of High-Performance Work Systems" by Martha Gephardt and Mark Van Buren, *Training & Development*, October 1996.)

Creating high-performance work systems is an ongoing, arduous task. The organizations that have initiated such efforts appear to be reaping rewards. But it's crucial not to underestimate the investment required. High-performance systems require, at minimum, that the people working within them be highly effective. That requires training.

The evidence is clear: Companies that use high-performance work practices provide more training than those that don't engage in such practices.

Within high-performance work systems, training will be aligned and integrated with actual

TABLE 3: GROWTH OF HIGH-PERFORMANCE WORK PRACTICES 1990-1993

HIGH-PERFORMANCE PRACTICE	PERCENTAGE OF FIRMS	
	1990	1993
Employee-participation groups	70%	90%
Self-managed work teams	47%	68%
Team or group compensation	59%	70%
Gainsharing	26%	42%
Employee stock-ownership plans	61%	71%
Knowledge- and skill-based pay systems	40%	60%

Source: *Creating High-Performance Organizations: Practices and Results of Employee Involvement and Total Quality Management* by Ed E. Lawler, Susan Albers Mohrman, and Gerald E. Ledford Jr. (Jossey-Bass, 1995).

work. Just-in-time and just-what's-needed training will be commonplace, as will be trainers with well-developed performance consulting skills.

The extent of change required to implement high-performance work systems makes the role of trainers pivotal. They must be proactive in helping employees make the transition to new team-based, high-involvement structures and practices. Employees need training in group dynamics and interpersonal relations, and in systems thinking to better understand how all parts of their organizations fit together and affect each other. Trainers will also play a key role in providing feedback on employees' performance and the financial performance of their organizations.

A SYSTEMS APPROACH. All high-performance work systems emphasize a systems perspective. The most successful systems focus on two elements: alignment and people.

Within high-performance work systems, these organizational components should align:

- the organization's strategy, vision, mission, and goals
- beliefs and values
- management practices, such as leadership styles, decision making, and communication
- work practices and processes, such as jobs, tasks, skills, knowledge, and abilities
- human resource systems, including employee selection, training, development, and compensation
- systems involving technology, measurement, and organization-wide communication.

High-performance organizations have discovered several factors critical to success, including these:

- a compelling case for change linked to business strategy
- change "owned" by senior management and

line managers

- communication early and throughout a change effort
- sufficient resources and support
- teams implemented within a systemic context
- the capacity for measuring the results of change
- adequate capability and training
- continuity of key leaders and champions.

SYSTEMS AND TEAMS. Although some high-profile companies have implemented high-performance work systems, it's difficult to determine how widespread such systems are. The best information is from surveys on individual practices.

For example, in "How Common Is Workplace Transformation and Who Adopts It?" (*Industrial and Labor Relations Review*, 1994), Paul Osterman reports that

37 percent of companies responding to a survey had used at least two high-performance practices by 1992.

Research by Ed E. Lawler, Susan Albers Mohrman, and Gerald E. Ledford Jr., on employee-involvement practices among *Fortune* 1000 companies shows that in 1993, 58 percent had some form of employee involvement but that only six percent involved employees in all aspects of the business. Their book, *Creating High-Performance Organizations: Practices and Results of Employee Involvement and Total Quality Management* (Jossey-Bass, 1995), is one of the most detailed publications on team-based work. (See Table 3.)

They found that the popularity of teams has risen dramatically in recent years. Between 1990 and 1993, the percentage of *Fortune* 1000 companies with employee-participation groups grew from 70 to 90 percent. In the same period, self-managed teams rose from 47 to 68 percent. According to the survey described in Osterman's article, 41 percent of responding companies had organized most of their core employees in self-managed teams as early as 1992.

According to other research by Lawler, the move to team-based work has led to linking compensation to team performance. The percentage of *Fortune* 1000 companies with team or group compensation increased substantially between 1990 and 1993. Those companies also show an increase in gainsharing, employee stock-ownership plans, and knowledge- and skilled-based pay systems.

SYSTEMS AND TRAINING. The 1995 Employer-Provided Formal Training Survey conducted by the Bureau of Labor Statistics shows that high-performance practices correlate with high training

expenditure and more hours of formal training time per employee. (See Table 4.)

THE BENEFITS. Many companies with high-performance systems have had positive results, in financial and nonfinancial measures. Among *Fortune* 1000 companies, those with high use of employee involvement and Total Quality Management had substantially higher measures of financial success. The high-use companies excelled at return-on-sales, return-on-assets, return-on-investment, and return-on-equity. (See Table 5.)

Companies that have integrated their TQM and employee-involvement practices have had better employee outcomes in such areas as job satisfaction and quality of work life and in such company outcomes as profitability and quality.

Other studies show similar results. In the steel industry, companies using high-performance practices had on average seven percent higher productivity, 13 percent better product quality, and higher customer-service quality than companies using traditional work practices, according to researchers Casey Ichniowski, Kathryn Shaw, and Giovana Prennushi.

In "The Effect of Human Resource Management Practices on Turnover, Productivity, and Corporate Performance" (*Academy of Management Journal*, June 1995), Mark Huselid reports on a survey of 968 firms, which shows that high-performance organizations tend to have low employee turnover, high productivity, and high profits. They also have a better-than-average survival rate, according to Theresa Welbourne and Alice Andrews in "Predicting Performance of Initial Public Offerings Firms: Should Human Resource Management Be in the Equation?" (*Academy of Management Journal*, August 1996).

TREND 9

COMPANIES WILL TRANSFORM INTO LEARNING ORGANIZATIONS.

As more organizations become knowledge-based, it's essential that they promote and capture learning at the individual, team, and organizational levels. That has fueled considerable interest in the concept of the learning organization.

Within a learning organization, training is integral to actual work, emerging as a by-product of work rather than something done in isolation. That fundamental change will result in the radical

TABLE 4: TRAINING HOURS PER EMPLOYEE ACCORDING TO WORK PRACTICE

WORK PRACTICES (IN ORGANIZATIONS WITH 50 OR MORE EMPLOYEES)	NUMBER OF TRAINING HOURS PER EMPLOYEE
Pay increases for mastering new skills	13.6
Employee involvement in technology and equipment decisions	13.3
Job redesign and reengineering	14.1
Job rotation	9.9
Just-in-time inventories	10.2
Peer review of employee performance	15.0
Quality circles	14.3
Total quality management	12.9
Self-directed work teams	12.6

Source: "1995 Employer-Provided Formal Training Survey" (Bureau of Labor Statistics, 1996).

restructuring of the approach, content, and level of training. Training professionals must develop ways to capture and share knowledge systematically, as work occurs and changes.

In a learning organization, a trainer's role is different from the traditional role. Learning is the daily responsibility of line managers and work teams; the work itself becomes the primary learning process.

Within a learning organization, training professionals are responsible for facilitating learning and for tying it to organizational goals. Consequently, it's critical that they understand the business as a whole. They must ensure that all systems are designed to encourage, maximize, and coordinate learning across all levels of the

TABLE 5: FINANCIAL RETURNS ACCORDING TO USE OF HIGH-PERFORMANCE WORK PRACTICES

FINANCIAL RATIOS	LOW-USE COMPANIES	HIGH-USE COMPANIES
Return-on-Sales	6.3	10.3
Return-on-Assets	4.7	6.9
Return-on-Investment	9.0	14.6
Return-on-Equity	16.6	

Source: *Creating High-Performance Organizations: Practices and Results of Employee Quality Management* by Ed E. Lawler, Susan Albers Mohrman, and Gerald E. Ledford.

organization and that employees have opportunities to reflect on what they learn. Training professionals provide the mechanisms for cross-training among peers, and they help create reward systems to encourage employees to acquire new skills.

The birth of the term learning organization is attributed to Peter Senge's book, *The Fifth Discipline: The Art and Practice of a Learning Organization*, published in 1990. But its roots go back to ideas in socio-technical systems, action research, and the work of Chris Argyris and Donald Schön on organizational learning. Since 1990, the number of books and articles on the learning organization has skyrocketed.

Most people use the term to refer to organizations that ensure that learning occurs by design and that new knowledge is used to direct the performance of individuals, teams, and the entire company. No one model of a learning organization exists. All organizations can learn, but each will have its own style and way of learning. Most experts say that organizations identify their own learning styles and then seek ways to improve their learning capability and link learning to performance. A learning organization includes (but is not limited to) these characteristics:

- a belief that systems thinking is fundamental
- a climate that encourages, rewards, and enhances individual and collective learning

- a view that surprises, mistakes, and failures are learning opportunities
- widely available access to information and resources
- a desire for continuous improvement and renewal
- learning integrated with work
- opportunities for open dialogue and inquiry.

Models of the learning organization emphasize the importance of learning at different levels of a company. First, a learning organization should create an environment that promotes individual learning that is continuous and tied to work. Employees are allowed to make mistakes and challenge existing assumptions.

Team learning serves as an important step in moving learning from individuals to the organization, and a learning organization is often characterized by flexible team structures. Team learning occurs through active dialogue and inquiry, focusing on group development and building collaborative skills. Seventy-three percent of the respondents to ASTD's 1995 HRD Executive Survey said that they encourage formalized team learning.

Perhaps the greatest emphasis in a learning organization is on systems and processes, in order to stimulate learning in a company so it can overcome past mistakes and set strategic direction for the future. Learning organizations develop systems to capture and store learning, making it resistant to

COMPETENCIES FOR THE FUTURE

Here are the major competencies outlined by *ASTD Models for Human Performance Improvement: Roles, Competencies, and Outputs* (ASTD, 1996).

- **Industry or corporation awareness.** Understanding the vision, strategy, goals, and culture of an industry or organization; linking human performance improvement interventions to organizational goals.
- **Leadership skills.** Knowing how to lead others positively to achieve desired work results.
- **Interpersonal-relationship skills.** Working effectively with others to achieve common goals; exercising effective interpersonal influence.
- **Technological literacy.** Using existing or new technology and different types of software and hardware, and understanding performance support systems.
- **Problem-solving skills.** Closing performance gaps between actualities and ideals; helping others uncover the gaps and use that knowledge to close current

and future performance gaps.

- **Problem-definition skills.** Detecting performance gaps and helping others find ways to close current and future gaps.
- **Systems thinking and understanding.** Identifying the inputs, throughputs, and outputs of a subsystem, system, or supra-system--and applying that information to improve human performance; realizing the implications of interventions on many parts of an organization, a process, or an individual; taking steps to address the side effects of human performance improvement interventions.
- **Performance understanding.** Distinguishing between activities and results; recognizing outcomes.
- **Knowledge of interventions.** Demonstrating an understanding of the many ways that human performance can be improved in organizational settings; understanding how to apply specific human performance improvement interventions to close existing or anticipated performance gaps.

- **Business understanding.** Knowing how the functions of a business work and relate to each other; knowing the economic impact of business decisions.

- **Organization understanding.** Seeing organizations as dynamic, political, economic, and social systems with multiple goals; using that larger perspective as a framework for understanding and influencing events and change.

- **Contracting skills.** Organizing, preparing, overseeing, and evaluating work performed by suppliers, contingent workers, and outsourcing agents.

- **Buy-in and advocacy skills.** Building ownership or support for change among affected individuals, groups, and other stakeholders.

- **Coping skills.** Knowing how to deal with ambiguity and how to handle stress resulting from change and from multiple meanings or possibilities.

- **Ability to see the big picture.** Looking beyond details to see over-arching goals and results.

erosion from employee turnover. A company wanting to become a learning organization must also examine and change its systems for communication, information, and knowledge; its performance-management and support systems; its change-management processes; and its technology.

In the 1995 HRD Executive Survey, 94 percent of respondents said that they think it's important to build a learning organization; only nine percent think their companies aren't moving in that direction. The challenge for training professionals will be to put the concepts of a learning organization into operation.

Here are some actions that training professionals and HRD practitioners can take to support and create a learning organization.

- Promote people that demonstrate a capacity to learn.
- Create forums for people to share what they learn and best practices.
- Change performance appraisals to assess learning activities and outcomes.
- Reward flexibility, new initiatives, and risk taking.
- Enable people to take responsibility for their own learning budgets and opportunities.

FACILITATING LEARNING. With the increased emphasis on organizational learning, the use of assessment tools and surveys has boomed. The content of such instruments varies widely. Many offer the potential to put into action the aspects of a learning organization, but it's important to match the strengths of an instrument with a company's needs.

For a learning organization to have its fullest effect, it must not become all things to all people. To avoid that trap, it's crucial to distinguish a move towards a learning organization from other management innovations. That requires training professionals to develop clear, practical guidelines. The first step is determining the appropriate assessment tool for an organization's particular situation.

TREND 10

ORGANIZATIONAL EMPHASIS ON HUMAN PERFORMANCE MANAGEMENT WILL ACCELERATE.

It's inevitable that more organizations will put into action the idea that people are their most important assets. Systems for managing and maximizing human performance will take on more significance.

Training professionals will have much at stake in implementing systems to document and manage workforce skills and knowledge. They will

need to hone their skills in such areas as job analysis, task analysis, evaluation, and competency modeling. Employees' individual development plans will be important considerations, often tied directly to course offerings and training plans.

The move towards integrated performance-management systems challenges traditional training departments. Training professionals will have to adapt as the traditional barriers between HRD and training departments become fuzzier. They will have to be knowledgeable in such areas as employee selection and compensation systems, information management, skill standards, and testing.

A COMPREHENSIVE APPROACH. In "Performance Management Is Running the Business: The New Pay Tool and Strategies" (*Compensation and Benefits Review*, American Management Association, July 1995), Allen M. Mohrman and Susan Albers

Mohrman define performance management as a broad term for the practices through which work is defined and reviewed, through which capabilities are developed, and through which rewards are distributed in an organization. Performance management may involve goal setting, employee selection and placement, performance appraisals, compensation, training and development, and career management.

Organizations (and HRD practitioners) have spent decades seeking these ideals:

- performance management systems that encourage development, that are highly motivating, and that are equitable rather than subject to rater error
- compensation systems that reward the best performers appropriately and that motivate behaviors critical to business success
- training and development systems that provide employees with the skills they need for their current and future jobs in the organization.

By many accounts, more organizations are using multilevel performance-management elements--such as gainsharing, and team reviews and rewards. It also appears that many are tying elements of performance management to business objectives. For example, many companies express goals in terms of cycle time, quality metrics, or customer satisfaction, reviewing employees' performance in the context of meeting such goals.

SKILL STANDARDS. One aspect of performance management gaining attention and steam in some industries involves skill standards, which are the performance specifications that identify the knowledge, skills, and abilities that an



employee needs to perform a job.

Job-specific skills have been around for years. But the 1990 report "America's Choice: High Wages or Low Skills" from the Commission on the Skills of the American Workforce of the National Center on Education and the Economy in Washington, D.C., sparked public and government attention on industry skill standards.

As part of the Goals Education America Act of 1994, Congress and President Clinton established the National Skills Standard Board to oversee the development of a national system of skills standards. Financed by the Skills Standards Board in 1992, 22 industries are working to define standards for a selected number of occupations common across their industries, concentrating on critical front-line jobs within core business units.

The standards being produced are intended for use as a baseline by HRD and training departments, against which to conduct gap analyses, design training interventions, perform evaluations, and set benchmarks. Eight additional skills standards projects are underway.

The National Retail Federation has published standards for some occupations, starting with the sales associate position because it's central to the industry and broadly applicable across other industries. The industrial laundry industry has also published standards and is providing certification to employees through on-the-job training and testing.

TESTING. In an era in which people are the most important assets, hiring, training, and promoting the right people takes on new urgency. Workplace testing, one way to make well-informed employment decisions, is becoming a growth industry. Testing is used at every critical juncture in employment, including hiring, training (what kind and how much), promotions, transfers, and

firing. A complex array of tests is available, including drug tests, physical and psychological tests, cognitive-ability tests, personal-interest inventories, personality measurements, and management assessments.

As employers seek people that can use sophisticated technology in a rapidly changing work environment requiring training and retraining, testing will be necessary to identify the workers that can best meet the challenges. Cognitive-ability testing, in particular, will become crucial.

Along with the potential benefits of using testing to screen workers, come ethical and legal considerations. Workplace testing is subject to careful scrutiny by courts because of its well-documented potential for affecting minorities and women adversely. Case law is in constant flux to define what is acceptable practice and what is not.

So, there you have it: The trends most likely to affect you and your work in the near future. They aren't intended to be all-inclusive. Nevertheless, they can provide you with a compass for charting your course.

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ADDITIONAL RESOURCES

Here are some additional sources of information used to compile the top trends.

- Survey of training executives conducted at a meeting of the ASTD Benchmarking Forum, NYNEX Learning Center, Marlboro, Massachusetts, November 1995.
- "The Annual Report of the Council of Economic Advisors" (U.S. Government Printing Office, Washington, D.C., 1996).
- "Adult Literacy in America: A First Look at the Results of the National Adult Literacy Survey" by Irwin S. Kirsch, Ann Jungeblut, Lyn Jenkins, and Andrew

Kolstad (National Center for Education Statistics, September 1993).

- "Community College Workforce Training Programs for Employees of Business, Industry, Labor, and Government: A Status Report" by Don Doucette (League for Innovation in the Community College, March 1993).
- "Community College Involvement in Contract Training and Other Economic Development Activities" by Robert Lynch, James C. Palmer, and W. Norton Grubb (American Association of Community and Junior Colleges and the National

Center for Research in Vocational Education, Berkeley, California, October 1991).

- 1995 Digest of Education Statistics (U.S. Department of Education with data from the U.S. Department of Commerce, U.S. Department of Labor, Bureau of the Census, and the Office of Employment and Unemployment Statistics).
- "How Workers Get Their Training" (U.S. Department of Labor, Bureau of Labor Statistics, 1985).
- "How Workers Get Their Training: A 1991 Update" (U.S. Department of Labor, Bureau of Labor Statistics, 1992).