

Workforce Development Challenges for Massachusetts

Jennifer Gaudet
Philip Moss
Hal Salzman
Chris Tilly
with Christopher Lim

Center for Industrial Competitiveness/Department of Regional Economic and Social
Development
University of Massachusetts Lowell

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I. EXECUTIVE SUMMARY

From the shipbuilding of the 1700s to the high technology industries of today, the skills of the Massachusetts workforce have always been the key to the Commonwealth's competitive advantage. Today, Massachusetts possesses a skill base that is the envy of many other states.

But workforce development problems constrain the state's long-term economic growth and prosperity. Skill shortages and mismatches at both the high and low ends of the skill spectrum create bottlenecks for Bay State businesses even as skill mismatches limit opportunity for those whose skills limit their access to better jobs. The current recession temporarily alleviates this problem, but certain skill shortages will return with economic recovery.

Workforce problem solutions must benefit *both* individuals and the businesses that employ them. For individuals, studies have consistently shown that higher skill and educational levels directly translate into higher earnings (Kane and Rouse). Conversely, immigrants with limited English speaking skills earn less than those who are fluent in English (Sum and Fogg 1999). For businesses, productivity increases along with workers' educational and training levels (Donahue, Lynch, and Whitehead 2000).

The quick Massachusetts profile is one of high technology, high wages, and high education -- but with significant exceptions to all three. Massachusetts has specialized in "high technology" production since the Industrial Revolution of the early 1800s. But since 1984, service sector employment has grown by 50 percent, while manufacturing jobs have fallen by 35 percent (Farrant, Moss, and Tilly, 2001). Services now dominate both domestic and international exports. Compared to national averages, Massachusetts specializes in higher-end "knowledge sector" services, such as software, higher education, and financial services.

In general, Massachusetts is a high-wage state, with Bay State workers earning 20 percent more per year than the average American worker (Farrant, Moss, and Tilly, 2001). Workers in knowledge sectors earn wages well above the national average for their corresponding industries (Farrant, Moss, and Tilly 2001). However, it should be noted that when compared to other states that also specialize in these sectors, Massachusetts gets mixed results. For instance, wages in software, financial, and communications services are lower when compared to other states that specialize in knowledge sectors, but wages are higher in the healthcare technology and post-secondary education sectors (Massachusetts Technology Collaborative 2001).

Although many workers in these key sectors earn high wages, many other workers in Massachusetts earn very low wages. Not everyone benefited from the 1990s technology boom; in 2000, 25 percent of all households earned less than \$25,000 (U.S. Census Bureau 2001).

Slow population growth and outmigration have limited the size of the Massachusetts workforce. Fortunately, Massachusetts has also experienced an increasing rate of foreign immigration. The most recent immigrant groups are increasingly from Latin America and Asia. A disproportionate number of immigrants find work in lower-paid positions, such as semi-skilled and unskilled manufacturing and service jobs (Chapman, 2001). While 10 percent of native-born persons live below the poverty level, a startling 29 percent of people who have arrived since 1990 live below this level (Fogg and Harrington 2000). At the same time, a substantial portion of immigrants works in higher-end professional service positions. In general, Massachusetts residents are well educated, though about 30 percent of immigrants still lack a high school degree, compared to only 12 percent of native-born persons (Fogg & Sum

1999). Nearly one third of Massachusetts residents hold a college degree, compared to the national average of 26 percent.

If this is the brief profile of the state's workforce, the brief statement of workforce development policy goals, as excerpted from the State Unified Plan, Massachusetts Department of Labor and Workforce Development, 2000, is even easier to state: All residents should have access to sufficient education and skills training to provide a good quality of life for themselves and their families; and Massachusetts employers should have access to the skilled workforce they need to remain competitive.

We focus our broad recommendations on three major problem areas that currently impede achievement of these goals: a shortage/mismatch of basic skills, a shortage of technical and professional skills, and the current recession. We also make some system-wide recommendations. Most importantly, we recommend state policies focused on "intensive" rather than "extensive" skill development.

Because Massachusetts has long had a fragile labor market for mid-level and technical skills, the state must educate and mobilize businesses and focus public and private resources on developing more skills in targeted populations. . Unlike other leading technology states such as California and Texas, Massachusetts does not have the higher skilled labor in-migration, and the current recession is likely to increase out-migration. However, there are latent skills for entry level and mid-level technical jobs that can be utilized once remedial education needs are addressed through adult basic education. And potentially significant pools of technical, scientific, and engineering skills exist among urban and minority populations, whose basic education should be improved through far-reaching educational reforms. The Commonwealth should stimulate more business involvement, both in basic education (through measures such as science and engineering camps for urban youth, internships, and expansion of existing school-to-work programs) and by expanding incumbent worker training. Efforts already underway along these lines can be strengthened through greater coordination of related programs.

In the following summary of our complete list of recommendations, our key recommendations for intensive skill development are marked with ➤ and *appear in bold italics*:

1. Basic skills shortages

- ***Expand Adult Basic Education (ABE) and English for Speakers of Other Languages (ESOL)***
 - *Start with preschool*
 - *Continue education reform through structural change*
 - *Soft skills: train workers, sensitize employers*
 - *Design training programs around worker needs*

2. Shortages in technical and professional skills

- ***Expand incumbent worker training***
 - *Build a balanced relationship with employers*
 - *Restructure and expand school-to-work and apprenticeship programs*
 -
 - *Expand access to higher education*

- *Be realistic about sources of scientists and engineers*

3. The current recession

- *Use excess labor capacity as a training opportunity*
- *Remain focused on the future as well as the present*

We also recommend some broad policies that apply across skill development systems:

- *Improve system coordination*
- *Refocus state resources on the big problems*
- *Motivate businesses to train*
- *Expand the role of entrepreneurial quasi-publics*
- *Bring unions and community-based organizations to the table*

II. WORKFORCE DEVELOPMENT PROBLEMS

Basic skills shortage

Although the public's eye has been focused on the need for high-tech skills, many of the skills in real demand are actually quite basic: reading and writing, and "soft" skills such as motivation and communication, and team and group problem solving skills.

While much popular attention has focused on hard skills, employers in low-skill jobs particularly stress "soft skills" that are social or behavioral. These soft skills include the ability to interact with customers, co-workers, and supervisors, friendliness and appropriate affect, grooming, and attire. Positive work attitude, commitment, and a willingness to learn are other soft skills sought by employers.

Even when employers require a college education, the reason isn't usually the need for specific college-level skills; rather, they see a college degree as signaling greater perseverance, motivation, and ability to learn; by contrast, many employers view high school graduates as unacceptably risky or increasingly difficult to find.

Estimated Universe of Need⁽¹⁾ for Adult Education, 1998-99

Group in Need	Number
Language Challenge	
Immigrants with limited English-speaking skills	195,000
Education Credential Challenge	
Adults lacking a high school diploma or GED	280,000
New Literacy Challenge	
Full-time employed ⁽²⁾ with a Level 1 or 2 proficiency	509,000
Part-time employed ⁽²⁾ with a Level 1 or 2 proficiency	126,000
Unemployed ⁽²⁾ with Level 1 or 2 proficiency	32,000
Out of labor force ^{(2) (3)} with a Level 1 or 2 proficiency	178,000
Subtotal	1,320,000
Excluding people out of the labor force	178,000
Total	1,142,000

Note: (1) Counts exclude 16-24 year old students in high school and college and all persons 65 and older.

(2) Counts exclude persons lacking a high school diploma or a GED certificate.

(3) We acknowledge that many of the people in this group will never enter the workforce because of disabilities or other barriers, but a portion of them would work if their skills were better and other barriers to employment such as childcare or transportation could be addressed.

Reproduced from: Comings Sum and Uvin, 2000.

A large proportion of the Massachusetts workforce is unable to meet even a relatively minimal definition of basic skills. In one recent report, in which basic skills were defined as having adequate English speaking skills, a high school degree or GED, and basic literacy in mathematics, reading, and analytic ability (above minimum but well below the high school degree level), 1.1 million people, or one-third of the state's workforce, did not make it over the bar (Comings, Sum, and Uvin 2000).

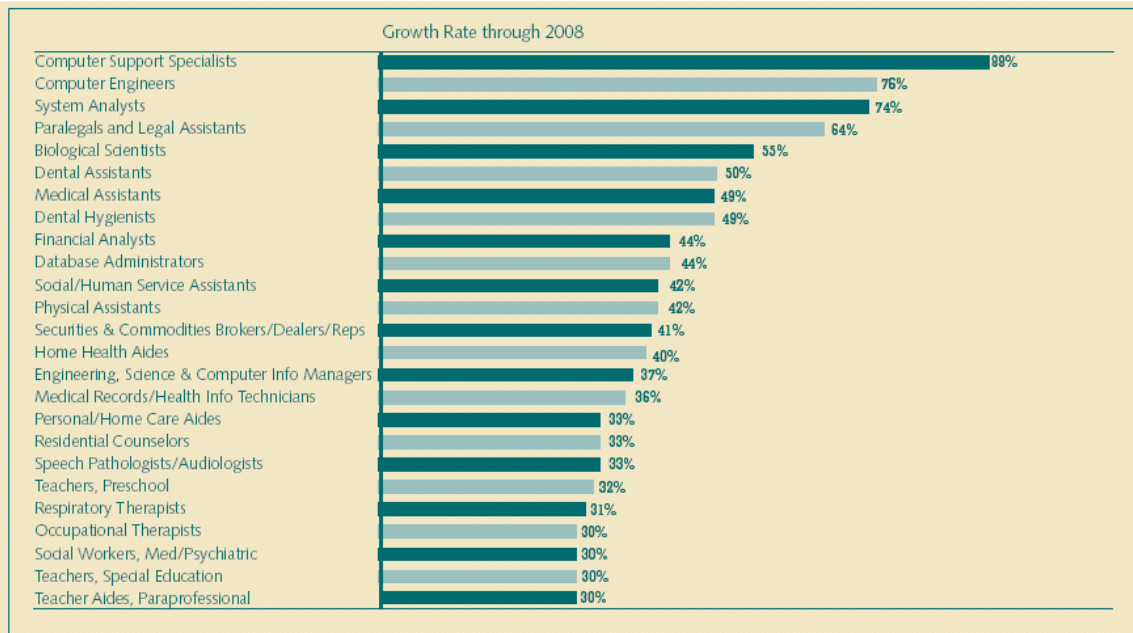
Technical and professional skills shortages

Massachusetts has also suffered shortages of technical and professional skills in a variety of areas, including machining, nursing and teaching. But the most attention has gone to a skills shortage in information technology (IT). While the current recession may ease skill shortages faced by some employers, the underlying causes of long-term skill shortages remain. When the economy rebounds, the problem will become acute once again. In addition, layoffs and skill shortages can coexist: for example, in the early 1980s recession, the Machine Action Project discovered that despite hundreds of laid-off semi-skilled machine operators, skilled machinists remained in short supply in western Massachusetts (Farrant and Flynn, 1998).

The primary reason Massachusetts employers are struggling to fill the labor needs of technology-intensive businesses, especially in computer science and engineering, is not high rates of labor turnover, but "an inadequate level of skilled supply relative to the demands of employers." Paul Harrington and Neeta Fogg (2000a, p.22). These current shortages – which the recession may ease but which will likely return with the recovery – come in the face of occupation and industry growth projections by the Massachusetts Department of Labor and Workforce Development's Division of Employment and Training (DET) showing that jobs requiring post-secondary education, particularly technical jobs, will continue to grow rapidly. By 2008, the DET reports, more than three of every five jobs will require an associate's degree or higher. Those occupations that usually require a bachelor's degree or higher will account for the largest number of new jobs and the second largest number of total openings.

Fastest Growing Occupations, 1998-2008

Chart 8



Reproduced from DET website: www.detma.org/forms/pdf/1030N_601.pdf

The DET study also predicted that the computer software/IT related services and the engineering/management services sectors will be among the fastest growing industries, expanding by 90 percent and 43 percent, respectively, from 1998-2008. To put these growth rates in context, the predicted average growth rate for all industries during this same period is 10 percent.

These technically skilled occupational categories are often misread to suggest that they are highly technical fields or require extensive technical education or training. In fact, many of these jobs do not require college-level education in science and engineering. By some estimates, two-thirds of the demand for IT workers during the recent IT boom was for IT skills at the community college or technical institute level, or for those with aptitude for computers and who could learn by doing (National Academy of Sciences, 2000). Some of the skills most in demand are for areas such as web design, which involve graphic design and logical design skills rather than technical computer science/programming skills. Nationally, about a quarter of all IT employment is in the “computer support specialist” category, which includes help desk and related functions that generally require functional knowledge of systems and applications but do not involve computer science or math and science content knowledge. Few in this category would have a four-year computer science degree (Salzman, 2000). In addition, research across many industries and types of skills identifies social skills, behavioral characteristics, and communication abilities as the most important skills employers find lacking in job applicants, even at technical levels.

Attempts to strengthen the science and engineering workforce have, over the past few decades, depended decisively on foreign students. Except for a spike in the early 1990s, engineering, math, and science enrollments by US-born students have remained steady or declined nationally over the past two decades. Foreign students account for more than half of enrollments in U.S. engineering, math, and computer science programs. Although some foreign

students return to their home countries upon completing their studies, many have stayed and worked in this country (National Science Foundation, 2000).

In terms of producing science and engineering school graduates, Massachusetts fares even worse than other states with strong technology sectors. A recent Massachusetts Technology Collaborative report found that the total number of engineering degrees decreased by 23 percent between 1987 and 1999, and the number of computer science majors increased by just one percent between 1993 and 1997. A primary reason for these limited numbers is declining interest in computer science, mathematics, and engineering among high school students who take the SAT in Massachusetts, compared to other leading technology states (LTS). Massachusetts ranked last among the LTS when measured for the percentage of students interested in engineering and below the average for students interested in computer science.

A final issue is the job quality and status of certain skilled jobs. With companies going “lean” – cutting back on job training and downsizing in other areas -- technical workers are expected to work longer hours and handle a wide range of problems, while confronting a lack of job security. Although some job specialties are handsomely rewarded, compensation remains relatively modest in other areas, considering the level of education required: for instance, the median salary for electronic technicians and technologists was \$39,000 in 1998, and \$38,000 for mathematical scientists (DET, 2001). In fact, pay is unremarkable for the vast majority of IT workers (see, e.g., Barnow, Trukto, and Lerman, 1998; Lerman, 2000). Stock options that meant sizable earnings increases affected relatively few workers in highly visible start-up and IT companies (Salzman, 2000).

Similar considerations affect other types of labor in short supply. Pay for traditionally female occupations, such as elementary school teachers and nurses, remains moderate to low (median pay for registered nurses is \$47,000; elementary school teachers average \$42,000, and adult education teachers earn \$11.82 per hour and often work only part-time). Other fields face other problems. Machining, for example, suffers from an image problem and from the perception that employment is unstable, as well as from the discontinuation of in-house machinist training programs by many large employers.

The current recession

Both the national and Massachusetts economies are now in recession. Unemployment, which dipped as low as 2.3 percent in December 2000, has climbed to 4 percent. Employment growth has leveled off and begun to decline. This recession will be temporary and will likely be milder than that of the early 1990s, but the consequences are nonetheless severe for Massachusetts. Businesses and workers across the state are in economic distress. The recession also has specific negative effects on skill development:

- *Loss of pools of skills.* Groups of skilled workers who have come together in particular firms and industries are dispersed by layoffs, and in some cases leave the state in search of work.
- *Reduced incentive for businesses to provide skills.* When the economy shifts from labor shortage to labor surplus, businesses find they can often pick from highly skilled job seekers, distracting them from the long-term need to provide incumbent worker training.
- *Decreased ability for workers or the Commonwealth to fund training.* In a recession, families are less able to afford tuition, and the state has fewer resources to support

education and training. While the recession's immediate impacts -- layoffs, unemployment, and fiscal distress -- are apparent now, the harm will be even deeper and more long term if the recession causes the state to delay or prevent needed skill investments.

The key challenge is to maintain a commitment to skill development, even in the face of heightened fiscal pressure and temporarily relaxed skill shortages.

III. CURRENT MASSACHUSETTS POLICIES

Components of the skill development system

The Massachusetts skill development system can be broken down into three components: the educational system, the second chance/retraining system, and business-based training. Each has exceptional strengths and important weaknesses.

The educational system

The cornerstone of the Massachusetts educational system is the hundreds of local school systems that offer primary and secondary education. Since only 42 percent of the Massachusetts population aged 25 and over has more than a high school degree (U.S. Census Bureau 2001), the K-12 system serves the essential purpose of preparing the majority of the workforce for the world of work. But the system has two serious problems: unequal access to resources due to the property tax funding base of the schools, and the poor performance of many schools, particularly in low income and urban areas.

Comings, Sum, and Uvin estimate that of the 1.1 million Massachusetts residents lacking basic skills, 83 percent are failures of the Massachusetts educational system, including 280,000 who are high school dropouts and 667,000 who have graduated high school but lack basic literacy skills. Special attention needs to be directed towards specific schools with high dropout rates. Of 317 Massachusetts high schools, 19 reported dropout rates greater than 10 percent in 1999. While these 19 schools make up less than six percent of the state's enrollment, they accounted for almost one-fourth of the state's high school dropouts.

The shortcomings of high schools have had an exceptionally large impact on Hispanic and African-American students. Based on the annual dropout rate for each grade level, Massachusetts education officials projected that one-third of Hispanic students and nearly one-quarter of African-American students who entered ninth grade in 1998-1999 would drop out by the end of their senior year in 2002, compared to an average projected dropout rate of 14 percent for all students.

Though major challenges remain, the Education Reform Act of 1993 has helped ease some of the funding and other problems with K-12 education. The other key building blocks of the state's education system are the public higher education system's 15 two-year community colleges, nine state colleges, and five University of Massachusetts campuses. These public institutions of higher education perform relatively well by national standards, though not in all categories. For instance, the percentage of freshmen who return for a second year is below the national average for public universities and colleges at one University of Massachusetts campus and at seven of the state colleges.

The second chance/retraining system

The “second chance” system is intended to offer education and training for workers who were unable to complete their education or who have been displaced from jobs. The focus of this system has been on disadvantaged workers, such as high school dropouts, welfare recipients, and the chronically unemployed.

The largest component of the second chance system is a vast network of community colleges, community based organizations, and public universities that serve as providers of adult basic education (ABE) and courses on ESOL. Demand for ABE programs far exceeds the supply of available “seats,” with a waiting list equal to more than 50 percent on top of the enrolled population, and a much larger latent demand of adults with inadequate basic skills.

The bulk of state-managed employment and training services are delivered through a system created and mandated by the federal Workforce Investment Act of 1998 (WIA), which was designed to increase collaboration between all parties involved in workforce development. One-Stop Career Centers are supposed to serve as clearinghouses for employment and training information and services.

The Governor’s Task Force to Reform Adult Education and Worker Training (2001) found that the delivery of workforce development services is administered across 11 different agencies, making the “system” difficult to navigate for both employers and job seekers. Although the 35 One-Stop Career Centers provide a highly visible point of contact for the job seeker, OSCCs are just beginning to market their services to employers. In addition, state funded workforce development services (especially those for employers, including the Workforce Training Fund, Extended Career Ladder Initiative, Economic Stabilization Trust, customized training services through community colleges), are inconsistently marketed through OSCCs.

In summary, the workforce development system lacks a clear point of entry connected with immediate access to the various types of federal, state and local workforce development services available in Massachusetts.

There is also evidence that the WIA-mandated structure, while designed to increase coordination and efficiency of various federal funding streams, is especially difficult for the most disadvantaged workers, who often face multiple constraints on their ability to attend training programs, including transportation, child care, and work scheduling problems. Community-based trainers report that many of these workers appear to have dropped out of their client stream since WIA (Persson-Reilly 2001).

Business-based training

As is true in other states, spending on private sector incumbent worker training is geared primarily at more highly skilled workers and not in employees who need training the most. Job skills training programs that result in the greatest effect on earning power are generally reserved for managers, computer technicians and sales workers, while clerical, service, production and other lower-skilled workers are less likely to receive employer-funded training. Moreover, far too few private employers offer basic skills and **ESOL (English for Speakers of Other Languages)** classes to low-skilled employees. Just one percent of private firms in Massachusetts

-- half of the U.S. average -- offer basic skills training to employees (Donahue, Lynch, and Whitehead 2000).

The workforce program challenge

Additional coordination is needed to ensure the efficacy of workforce development efforts. This lack of coordination runs from direct training programs to efforts to assess changing labor markets. For example, a variety of public players -- WIBs, community colleges, business development centers, local chambers of commerce, DET, the Massachusetts Office of Business Development, among others -- all analyze local and regional labor markets, yet the Task Force to Reform Adult Education and Worker Training cited a lack of substantive collaboration among these groups.

Community colleges continue to meet their potential to offer workforce development unevenly and inconsistently. A major problem is that the training programs of the 15 community colleges are clearly separated from the job-training establishment in any standard organizational chart for Massachusetts government. The community college system is answerable not directly to the Governor, but to the Board of Higher Education. Community college officials sit on Workforce Investment Boards, but no lines connect community colleges to the various state agencies with workforce development roles. Some say this “disconnectedness” from the established system hinders the opportunity for community colleges to develop coordinated workforce development strategies (Donahue, Lynch, and Whitehead 2000). Yet, preserving their educational function rather than becoming just state-supported training institutes is also an important role that requires some independence from the workforce development system. Immediate attention should be given to current research on how community colleges can best manage these dual roles (Bailey and Averianova 1998, Rosenfeld 1998).

Guiding principles from other states' efforts

A sampling of best-practice workforce development efforts in other states (see Appendix A) suggests several general principles that appear to characterize successful programs:

- **Develop long-term relationships with private sector representatives.** The active commitment of business to workforce development and an ongoing relationship is important to both the successful training and placement of workers, and to the strategic planning of agencies (Benner et al, 2001, Jobs for the Future 2001). These relationships have the potential to encourage a business to rethink their investment in their own workforce. In turn, business involvement in the partnership improves the likelihood that the state’s workforce training programs will be both timely and relevant. The WIB structure creates a framework for such a partnership. Although this framework does not in itself ensure productive government-employer links, lessons can be learned from particularly effective WIBs such as the Boston Private Industry Council (Melendez, de Montrichard, and Falcon 2002).
- **Target specific occupations or sectors.** Targeting can help agencies gain a more intimate knowledge of job skill requirements, while providing them with the opportunity to develop

long-term relationships with business representatives (Benner et al, 2001, Clark and Dawson, 1995, Dresser and Rogers, 1997).

- **Encourage the hiring of hard-to-employ and low skilled workers.** Employers take risks when they hire people with little or no experience, a bad track record, or limited skills. Agencies can help reduce this risk by providing supplemental support after placement, such as transportation or childcare expenses, ESOL or basic education, and ongoing opportunities for training. Such supports also help address the longer-term needs of the worker themselves (Benner et al, 2001, Jobs for the Future, 2001). Again, the Workforce Investment Act offers a starting point for meeting this challenge. An adequate resolution requires added state efforts to comprehensively address multiple barriers, which as a challenge given narrowly targeted federal funding. Widely acknowledged as successful in this regard are the Center for Employment Training in San Jose and San Antonio’s Project Quest.

III. RECOMMENDATIONS

We focus our recommendations on the three major problems we have identified: basic skills shortages; shortages of technical and professional skills; and dealing with the recession. We also make some system-level suggestions. We recognize that calls to expand funding may not be realistic in the short run, given the current fiscal situation, but we issue them nonetheless to indicate our sense of priorities for the future.

Most importantly, we recommend state policies focused on “intensive” rather than “extensive” skill development. Because Massachusetts has long had a fragile labor market for mid-level and technical skills, the state must educate and mobilize businesses and focus public and private resources on developing more skills in targeted populations. . Unlike other leading technology states such as California and Texas, Massachusetts does not have the higher skilled labor in-migration, and the current recession is likely to increase out-migration. However, there are latent skills for entry level and mid-level technical jobs that can be utilized once remedial education needs are addressed through adult basic education. And potentially significant pools of technical, scientific, and engineering skills exist among urban and minority populations, whose basic education should be improved through far-reaching educational reforms. The Commonwealth should stimulate more business involvement, both in basic education (through measures such as science and engineering camps for urban youth, internships, and expansion of existing school-to-work programs) and by expanding incumbent worker training. Efforts already underway along these lines can be strengthened through greater coordination of related programs.

The following recommendation categories lead off with a key recommendation (highlighted with➤) for intensive skill development policies, which will generate the greatest yield for the Commonwealth.

Basic skills shortages

- ***Expand Adult Basic Education (ABE) and [WE CHOSE ESOL AND CHANGED THE PLACES WHERE ESOL APPEARS IN THE PAPER]English for Speakers of Other Languages (ESOL)***

The Adult and Community Learning Services division of the Department of Education estimates that all ABE combined can annually serve only about two percent of the estimated two million Massachusetts adults who lack the abilities expected of a high school graduate. With increasing numbers of immigrants, the need for ABE and ESOL is expanding dramatically.

- *Start with preschool*

Preschool programs offer documented educational gains for children, particularly those from lower-income families. The state of Georgia, despite a median household income only 82 percent that of Massachusetts, offers a fully funded pre-kindergarten program to all four-year-olds (Georgia Office of School Readiness, 2001).

- *Continue education reform through structural change*

A good high school education can provide adequate preparation for most jobs in the economy. Coupled with support for life-long learning, this approach will be far more effective than providing more years of inadequate education.

The Commonwealth should continue its effort to equalize educational resources and to improve performance of lagging schools and school systems. However, the emphasis on testing as the primary driver of improvement is limited. More comprehensive reform is necessary. One example of fixing rather than patching the education system is Kentucky's systemic restructuring, which restructured all urban schools as charter-like schools, implemented sweeping management changes, and introduced new, broad-based evaluation techniques. The increased reliance on remedial education at the post-secondary level not only saddles those institutions with remedial functions that do not play to their strength, but it also diverts attention from the core problem of providing adequate education and skills at the high school level. In addition, it is important to recognize that school performance depends not just on the school itself, but on the family and community environment. Thus, nutrition, health, public safety, and anti-poverty programs are an important complement to reforms in the educational system itself.

- *Soft skills: train workers, sensitize employers*

Education and training programs must train workers in the importance of self-presentation, attitude, and reliability. Contrary to the views of some employers, these capacities can, in fact, be enhanced through training. At the same time, many employers need training in how to manage a diverse workforce. The Commonwealth should consider policies to expand the availability of consulting and training on diversity management for businesses, especially smaller ones.

- *Design training programs around worker schedules and support needs*

Increase the number of on-the-job training programs supplemented by weekend and evening programs. Develop programs that provide support for "pull-out" incumbent worker education and training programs during the workday, including on-site courses. State-financed support for smaller firms or Individual Training Accounts that pay for wages while in training should be established and employers should provide training release time. Where possible, support trainees with services such as childcare, transportation, and social services. More aggressive outreach

efforts are also needed to ensure that those in need of skill development actually participate in available programs.

Shortages in technical and professional skills

➤ *Expand incumbent worker training*

Incumbent worker training is currently underutilized as a means of developing mid-level skills. Job ladder and “job lattice” programs, which help workers move from one job to another in a single employer or a group of employers, show a great deal of promise, even in IT sectors, where many jobs have relatively modest skill demands. As a result of findings from the Governor’s Task Force to Reform Worker Training and Adult Education, several key workforce development agencies recently initiated a promising new grant program called the Building Essential Skills through Training (BEST) Initiative, which focuses on incumbent workers and requires co-investment by firms. . More state resources should be devoted to supporting and promoting such incumbent training programs.

One key element in incumbent skill building is broader public financial support for higher education and training. But another is to provide adequate wages to low-skilled workers to enable them to take advantage of educational and training opportunities by not having to hold multiple jobs. The Task Force on Massport (2001) strongly recommended employers pay a living wage to 12,000 airport workers as one of the more important means of obtaining and increasing skills. This Task Force recommendation is relevant for many Massachusetts industries that will need skilled workers in the next economic cycle.

• *Restructure and expand school-to-work and apprenticeship programs*

Important strides have been made in improving vocational education, including increasing the participation of employers in that education. In Massachusetts, school-to-work programs have been important but limited; these efforts could be expanded with apprenticeship programs, such as those developed in a number of other states. School-to-work initiatives have been limited by political concerns that they would result in tracking or delivering a substandard education. State policy can play a role in providing support for differentiated education streams in ways that neither provides substandard education nor track students. Such efforts, however, may require substantial reorganization of school systems.

• *Expand access to higher education*

Perhaps the most important step is to expand access to two-year programs, which can provide a strong basic education, offer cost-effective retraining, and can serve as a jumping-off point for further higher education. Georgia is a leader in expanding access to both two- and four-year colleges through “HOPE Scholarships,” which are funded by the state lottery and cover tuition and fees at a public institution (or \$3,000 per year toward tuition at a private institution) for students with an average of B or better (Georgia Student Finance Commission 2001).

• *Be realistic about sources of scientists and engineers*

Foreign students have been a key source of science and engineering majors in U.S. higher education, in large part because over the past two decades, American colleges have not succeeded in luring large numbers of domestic students into science and engineering. Rather

than target science-oriented scholarships and other support resources to middle class students, who for the most part are already aware of opportunities in science but have chosen not to pursue them, such resources should be targeted to students from disadvantaged communities who would otherwise not pursue higher education but who offer the largest potential pool for increasing the domestic science and engineering workforce. Keeping the doors open to immigrants is also an important continuation of longstanding US policy and a significant source of supply.

The current recession

➤ *Use excess labor capacity as a training opportunity*

Human capital, so sought in the recent labor shortage, should be preserved and developed. This is particularly true in the tourism and travel industries that face a steeper recovery as travel and tourism rebounds from September 11. The Commonwealth should explore innovative policies that allow employers to retain workers and to use excess capacity as an opportunity to increase training. If resources are made available, training may be more possible during slow times when there is slack than in a boom when employers seek to fully utilize every employee.

State policies should encourage laid-off workers to receive, and employers to provide, training for reentry to their old industries. Workers on reduced hours should be eligible both for unemployment insurance and for training funds, making this kind of arrangement more attractive to workers and employers alike.

• *Remain focused on the future as well as the present*

Recession brings with it a spate of immediate concerns: revenue shortfalls, layoffs and business closings, increased unemployment insurance costs. But while addressing these issues, state policy-makers must also keep an eye on how the Massachusetts economy can help lay the basis for the next economic boom. This means maintaining a rhetorical and substantive commitment to workforce development in all its dimensions. Skill building should not be viewed as a luxury or be given lower priority because of temporarily muted skill shortages. Though business interest in training may be momentarily reduced, the recession should be used as an opportunity to enhance training programs, rather than as an excuse to diminish them.

Skill development systems

➤ *Improve system coordination*

The federally mandated coordination of many training services through regional Workforce Investment Boards is a step in the right direction. However, further steps toward coordination are needed at both the regional and state levels.

An important first step is to develop a resource guide to all state, federal, and local training and employment services in Massachusetts, as Rhode Island has done with its employment and training “crosswalk.” Such a resource guide could be made available to One-Stop Career Centers and other service providers. The state should help the One-Stops develop the capacity to assimilate and diffuse this knowledge. Currently, the One Stop Career Centers do not market all of the services available in the state. In addition, the state lacks marketing materials or a website to coordinate all federal, state and local services, though an annual report and website for the workforce development system as a whole is now in process based on

recommendations by the Governor's Task Force to Reform Adult Education and Worker Training.

It is also critical to break down barriers between community colleges and the other state agencies responsible for training. Each can learn from the other, and both have much to gain from coordination that goes beyond case-by-case collaboration. In the long run, the Commonwealth should reexamine the financing of community college continuing education programs, and consider subsidizing community colleges as a vehicle for targeted skill development initiatives.

The Department of Administration and Finance's Managing Results Initiative, which plans a comprehensive review of state programs to improve coordination and efficiency, offers an important vehicle for undertaking some of these steps.

- *Refocus state resources on the big problems*

Driven in part by federal funding priorities, the Commonwealth has focused its skill development efforts on short-term training and placement. However, basic and professional/technical skill shortages require more sustained education and training inputs. Massachusetts should, where possible, shift resources toward addressing these shortages.

- *Build a balanced relationship with employers*

One of the keys to success of workforce development programs, be they through training vendors, school-to-work, labor market intermediaries, or community colleges, is the active participation of and the cultivation of long-term relationships with the employer community. Partnerships with business not only smooth placement of graduates, but they also increase the likelihood that the curriculum will respond to the articulated needs of the employers. However, businesses should not drive the training agenda unilaterally. To the extent that firms focus on educational and training content, they are likely to define their needs narrowly on the skills they need on particular jobs right at the moment. Those specific skills may change relatively rapidly, leading to skill obsolescence. Deeper and broader skill development is likely to be in the best long-term interest of workers' advancement possibilities. Public programs should encourage businesses to make long-term investments in workers, rather than simply helping them to cut training costs (Luria, 1997). Industry associations or consortia, unions where relevant, and exemplary businesses are usually more committed to a broad training agenda than the typical individual business, so public programs should seek to build partnerships with these actors and provide support to other firms that wish to expand their training approaches.

- *Motivate businesses to train*

Progress has been made on involving businesses in designing training curricula and providing employment opportunities for program graduates. But business involvement in training itself remains limited, and tilted towards training for those who already possess strong skills, such as managers. The Commonwealth has a number of levers to encourage businesses to engage in skill development, many of which it is already putting to use through initiatives such as BEST. State agencies could tie training assistance (and potentially other types of assistance) to businesses' commitment to provide training themselves. Agencies could also explore ways to provide technical assistance with in-house training, rather than simply delivering trained workers. Agencies can assist industry associations in taking on training responsibilities and can

help businesses and unions develop joint skill development activities. Last but not least, public officials can use the bully pulpit to urge businesses to undertake skill building.

- *Expand the role of entrepreneurial quasi-publics*

The Massachusetts skill development system is sprawling and decentralized. Proposals to recentralize it are impractical from a political and managerial standpoint. However, in the absence of centralized coordination, agencies with a broad and flexible mandate can play an important role in filling gaps and building bridges.

- *Bring unions and community-based organizations to the table*

Unions and community-based organizations can provide first-hand knowledge of workplaces and workforces, strong contacts with current and potential workers, and a deep commitment to make workforce development work for their constituencies. Examples around the country, from the Wisconsin Regional Training Partnership (organized primarily by unions) to San Jose's Center for Employment Training (a community-based group) demonstrate the value that these actors can add to workforce development. It makes sense to tap their expertise and energy in planning and implementing programs.

Benefits and costs of the recommendations

While it is difficult to assign numerical benefits and costs to each policy recommendation, there is strong evidence that the financial benefits of education and training are substantial and that they generally exceed the direct costs of skill provision. For instance:

- The benefit of a year of post-secondary education has been estimated to increase earnings by 5 to 10 percent. . The value of a year of structured on-the-job training has been estimated to be of equal value (Donahue, Lynch, and Whitehead 2000). These earnings gains reflect the productivity gains to business.
- The best and most often cited evaluation of pre-school programs is that of the Perry Preschool Project, launched in Michigan in 1962. The evaluations estimates seven dollars saved in social costs for every dollar spent on the program (Barnett 1996).
- From September 1993 to December 2001 Georgia's HOPE scholarship program has provided college scholarships to 581,153 students at a per pupil cost of about \$2419. Approximately 60 percent of the HOPE scholarship students persist through the four years of college (although only 25 percent maintain their scholarship by maintaining a B average for four years) and 70 percent through two years of college (Georgia Student Finance Commission 2001). According to the U.S. Census Bureau's year 2000 Current Population Survey, a full time worker with a BA earns \$300 per week more than a high school graduate; a full time worker with some college earns \$75 more per week. In either case, it takes less than a year for the full time extra earnings to exceed the cost to the state of supporting his or her college attendance. In fact, hypothetically applying the Massachusetts income tax rate to the added earnings, a full-time worker with a college degree would pay an added \$2,419 in income taxes in less than three years.

In short, while more research on benefits and costs is needed, evidence to date clearly establishes that workforce skills are a highly worthwhile investment.

A final word

We close by returning to points that we have stressed repeatedly throughout this paper. Businesses, workers, and the Commonwealth as a whole all stand to benefit from skill development. Education and training programs will be most effective to the extent that all three parties are fully involved in them. True, the shadow of recession makes it a greater challenge to sustain a high level of public sector and business involvement. But the need and opportunity for skill development is as great or greater in hard times as it is in good times. The future prosperity of Massachusetts depends on the steps that are taken now.

Appendix A: BEST PRACTICES FROM AROUND THE COUNTRY

It is useful to look to other states for models of workforce development policy. Following and building upon the taxonomy of state programs developed in a report by the National Governors Association of state-funded, employer-focused job training programs we look at specific programmatic strategies that are employer based, community college based, state based, and non-profit labor market intermediary based (National Governors' Association Center for Best Practices 1999, as summarized by Lim (2001)).

Specific Programs

Employer based programs

California's Employment Training Panel (EPT) has been the model employer-based training program for many states. The EPT was launched by Legislature in 1982 as a cooperative business-labor program to fund job training. Since then, it has funneled more than \$550 million to 26,000 employers for the training of over a quarter of a million employees. EPT is funded through the Employment Training Tax, a special levy on California employers participating in the UI system. For employers to access EPT funds, they must certify that perspective trainees are likely to be displaced in the absence of fresh skills development. In addition, employers need to provide a plan showing how the training contributes to the long-term security of the trainee. EPT's longevity, high usage rates and political support has allowed California to improve on the program over the twenty years. By adding auxiliary staff to help employers with the application process, the EPT has become more accessible, thus been able to serve more employers. The EPT has also developed strict performance measures to monitor the programs they fund. For example, to emphasize job retention, EPT will not reimburse training expenses to employers if the trainees do not remain on the job for at least 90 days after training.

New Jersey has been recognized for its Customized Training Program (CTP). New Jersey's financial commitment to CTP ranks the state as a leader in per-capita spending for incumbent worker training programs. CTP has been successfully used as an economic development tool to encourage firms to relocate and expand in New Jersey. Like California, for employers to tap CTP funds, employers must prove the need for skills training, as well as prove training will increase job security. CPT employers also must agree to hire all trainees that successfully complete the training program. Massachusetts should strive to emulate California's EPT and New Jersey's CPT programs. These programs not only have strong financial support from their state government, California is ranked sixth and New Jersey is seventh in workforce funding per capita, but they also utilize funds effectively. Massachusetts is ranked 46th in per capita state funding (Regional Technology Strategies 1999).

Community College Based Programs

North Carolina's skills training system is founded upon the state's strong community college system. North Carolina's network of community colleges created as industrial educational facilities developed for employers to use as training facilities. The state offered subsidized training programs customized to business needs as incentives for companies to locate in North Carolina. From this early network of educational facilities grew the current community

college system. Over the years, the mission of the community colleges has remained focused upon skills training for businesses.

Iowa has also integrated community colleges into the state's skills training system. Businesses are required to partner with a local community college before they can access training dollars. The community college helps develop an appropriate training program and brokers between the firm and state agencies to determine eligibility for public funding. The forced partnership between employers and community colleges has created a process that produces training programs that effectively meet the needs of businesses. Contrary to these two examples, Massachusetts community college system, as discussed earlier, is disconnected from workforce development strategies. Massachusetts can learn from these states about methods to better incorporate its community college system into statewide workforce development efforts.

Studies of model community colleges have found them to incorporate the role of an economic development agency in their mission (Rosenfeld, 1998). These community colleges base their trainings around regional industry clusters and work closely with area business representatives. Some colleges been so successful in understanding the regional industry, they have become the leading technical expert that area businesses turn to for advice on technology and training.

State-Agency Based Programs

The Human Resource Investment Council (HRIC) in Rhode Island coordinates workforce development through taking an unusually active role in initiating new programs and building partnerships between employers and public sector organizations. As a state agency, HRIC has the ability to utilize tax credits to encourage private sector led workforce development efforts. For example, HRIC offers tax credits for job training programs that train low-wage workers and result in wages for trainees at least 150 percent of the state minimum wage upon completion of the training.

Georgia has created the Department of Technical and Adult Education (DTAE) to consolidate the State's efforts in technical education, adult literacy, public library services and economic development programs. The DTAE has developed a fairly comprehensive workforce development plan that includes an apprenticeship program, retraining tax credits for businesses, "Certified Specialist" programs, and the often-cited training program known as Quick Start (www.dtae.tec.ga.us/econdev). Quick Start program is Georgia's model job training program. Unlike many state employer-focused job-training programs, the Quick Start program is not a financing mechanism to subsidize employee training. Instead, it is a training and human resource organization that delivers training directly to employers establishing new jobs in Georgia. The program is also highly regarded in its flexibility, which allows it to be responsive to business. Quick Start trainings are coordinated through technical and community colleges around the state, and can be scheduled either on site or at satellite campuses, any time of day. In addition to the Quick Start program, Georgia is acclaimed for its HOPE Scholarship program—a remarkable program that, for any high school graduate with a 3.0 GPA, provides full college tuition and a book allowance in any state college or \$3,000 in tuition at a private college in Georgia. It also pays tuition at community colleges and training institutes for nearly any Georgia resident. HOPE helps all Georgia residents achieve post-secondary education credentials. Specifically, HOPE directs financial aid to adults who can attend school only part time and who are seeking something less than a conventional college degree. Presently, Massachusetts has no

comparable programs. The state should borrow strategies for collaboration between state agencies from these examples to improve coordination within its system.

Washington, like Massachusetts, has experienced a shortage in both mid-skilled workers and college graduates in science and technology (Washington State Governor's Office 2001). Washington has developed a strategy, The Washington Innovation Economy Strategy, to improve their workforce and education systems, in addition to strengthening their research institutions and facilitating technology transfers. To address worker shortages in the IT industry, the state has partnered with industry leaders in developing their "IT Bridge Builders Program". It is intended to not only help fill vacancies, but also to provide the opportunity for collaborative relationships that will allow them to anticipate future workforce needs. In a related strategy, a newly created Technology Institute will partner with industry leaders and the states 14 community colleges in addressing the shortage of college graduates. Both the Technology Institute and the IT Bridge Builders Project are good examples of public-private partnerships that will provide the opportunity for long-term training and development strategies. Future skill development programs in the IT field in Massachusetts should take lessons from Washington's experience.

Like many states, North Carolina has experienced high turnover rates in childcare providers, mainly due to the very low wages paid in this field. The education levels of the providers were also found to be lacking. To address these issues, North Carolina developed two related programs – the Childcare WAGES Project and the TEACH Early Childhood Project (www.childservices.org). The WAGES project provides education based salary supplements to participations. Low paid providers working with children 5 and under are eligible for income supplements based on their level of education. For instance, an Early Childhood Education certificate earns a \$450 supplement, while an Associates degree earns \$1500 for the childcare provider. Not only is this an income support for the provider, but it also acts as an incentive to remain in the field and further their education.

The TEACH project provides partial scholarships to providers to defray the costs of earning a degree. After an education level is earned, the participants are eligible for completion bonuses up to \$700. The provider must then commit to working in that profession up to a year, depending on the scholarship program. Both of the programs are also very flexible in eligibility. For instance, the requirement of minimum hours working in a childcare center ranges from 10 to 30 per week, depending on the program. North Carolina's childcare initiatives are good examples of how a state can help improve the workforce in a job area that is vital to the future health of the state.

Wisconsin has been a model state in developing apprenticeship programs for workforce development. (Wisconsin Department of Workforce Development 2001). Once participants are hired and enrolled, the employer and new apprentice sign a contract that details skill standard guidelines for the occupation. The contract, developed by technical colleges, unions, and employer organizations, is overseen by the state Department of Workforce Development. The training, sponsored by the employer, is work based with a great deal of on the job learning supplemented with classroom time. As the participant gains experience and skills, s/he is rewarded with higher wages and greater security and career potential. This model is now being used as part of the states welfare to work initiative as well. In this case, un- and underemployed non-custodial fathers can enter apprenticeship programs while receiving supplemental supports under welfare to work. The Apprenticeship Program is seen as a way to secure skilled employment with living wages and career opportunities, as opposed to simple placement, for

those with low skills or little work experience; the program is used as a way to address workers long term needs. The Machine Action Project in western Massachusetts has developed innovative training programs that follow the apprenticeship model, but more development statewide along these lines would benefit workforce development in Massachusetts.

Non-profit labor market intermediary based programs

The San Francisco Hotel Partnership Project trains workers from a number of partner firms in the hotel industry in, for example, wine service, fine dining service, ESOL, and safety training (Korshak, 2000). The project was started as a joint effort of SEIU Local 2 and area hotel management to address the poor quality service in their banquet halls and the lack of trained workers during peak seasons. In addition to successfully increasing the skills and pay of the workers, this project has also led to improved relations among the once adversarial union and management.

Project QUEST (Quality Employment through Skills Training) is an independent non-profit training intermediary based in San Antonio, Texas (Clark and Dawson, 1995). QUEST works closely with business representatives from industries of targeted occupations, including nursing, aircraft repair, and healthcare technologies, in effort to understand both the skills required of workers and the needs and trends of the industry. QUEST only deals with clients that have one or more “barrier”, i.e. prison record, language barrier, or low skills (Osterman and Lautsch, 1996). During the training program clients can apply for emergency supports for expenses including rent and utilities. In addition to job area related training, workers receive supplemental services including career counseling, individual counseling, life skills training, and weekly meetings on work place habits. Although this may seem like a sizable commitment on both sides, QUEST has had remarkable success, substantially raising participant’s income and work hours.

The Center for Employment Training (CET) based in San Jose California is a private, non-profit agency that provides training services to low income and ‘hard-to-serve’ individuals in effort to place them in sustainable, well paid positions that have potential for upward mobility (www.cet2000.org). The CET program, which covers more than 30 occupation areas, combines basic skills and vocational training in a simulated work environment for participants. Like Project QUEST, CET provides a variety of supplemental supports during training and continues communication and support after placement. The CET has been so successful that they received US Department of Labor funding to replicate their program in 15 other locations.

The Wisconsin Regional Training Partnership (WRTP) is an independent membership organization that draws its constituents from the regions metalworking firms (Dresser and Rogers, 1997). The WRTP develops programs to assist member firms in developing or improving their worker training practices or modernization process and provides links between area business and schools to ensure accurate trade training in the school systems. To receive WRTP services, member firms must agree and adhere to terms developed by its joint labor-management governance. The efforts of the WRTP have led to increased skills and pay for workers, greater employment stability, and a higher quality relationship between labor and management.

Although existing career ladder programs can vary greatly, there are several key points that successful efforts share.¹ It is important for agencies to target their trainings at specific

¹ This paragraph draws from Clark & Dawson 1995, Brenner, Brownstein, Dresser and Leete 2001, and Dresser and Rogers 1997, program materials, and an interview with Clay Howell, Project QUEST)

occupations or industry sectors. Many workforce development and placement agencies work on a firm-by-firm basis. This does not allow agencies to understand skill requirements, industry trends, or careers in that field. Targeting also allows agencies to build strong relationships with employers, which is another key to program success. Additionally, targeting a range of skill level occupations allows an agency to better understand career trajectories for successful successive placements of clients. Greater success is achieved when agencies work with clients over a long period of time. This is particularly critical in dealing with disadvantaged populations. Providing both formal and on the job training is also important, and partnering workers with coworker-mentors has been identified as a way to help the new adjust and receive on the job support as needed. In general, it is crucial to think beyond placement; the workers' long term needs must be addressed, and communication must be maintained after placement. These lessons should guide the Commonwealth in supporting the development of successful labor market intermediaries.

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