

3-1-2009

Lessons Learned from a State-Funded Workplace Literacy Program

Kevin Hollenbeck

W.E. Upjohn Institute for Employment Research, hollenbeck@upjohn.org

Bridget F. Timmeney

W.E. Upjohn Institute for Employment Research, timmeney@upjohn.org

Policy Paper No. 2009-004

Follow this and additional works at: https://research.upjohn.org/up_policypapers



Part of the [Labor Economics Commons](#)

Citation

Hollenbeck, Kevin and Bridget F. Timmeney. 2009. "Lessons Learned from a State-Funded Workplace Literacy Program." Policy Paper No. 2009-004. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research. <https://doi.org/10.17848/pol2009-004>

This title is brought to you by the Upjohn Institute. For more information, please contact repository@upjohn.org.

Lessons Learned from a State-Funded Workplace Literacy Program

Kevin Hollenbeck, Vice President and Senior Economist
Bridget Timmeney, Special Projects Coordinator
W.E. Upjohn Institute for Employment Research
e-mail: hollenbeck@upjohn.org

March 2009

Abstract

Findings from an evaluation of a workplace literacy program funded by the State of Indiana are presented. Working with employers, providers were given considerable latitude to design their own training regimens. The state awarded certificates to workers who achieved certain levels of proficiency in reading, math, critical thinking, problem solving (assessed by CASAS), and computer literacy (certified by IC3). The evaluation relied on qualitative and quantitative data. Multiple site visits were undertaken and a survey of participants (n = 1,800), learning gains, and earnings histories were quantitatively analyzed.

Key findings include a significant interest in college attendance by incumbent workers, higher-than-expected levels of literacy in pre-assessments, little reliance on contextualization, and the importance of a program champion and supervisory support at workplaces. Business return was not formally measured, but employers and workers reported significant morale gains and frequent productivity gains.

Key Words: workplace literacy, adult education, incumbent worker training, economic returns, CASAS

INTRODUCTION

Employees and employers benefit from workplace literacy programs. For employees, basic skills training leads to promotions and improved attendance (Askov, 2000), job retention (Campbell, 2003), and enhanced job performance (Bates and Holton, 2004). Hollenbeck (1994) estimates wage increases of 8 to 13 percent for participants in such training. Benefits to employers include reduced error rates, better safety records, and increased employee retention and morale (Conference Board, 2006). An obvious question is why don't more firms undertake such training given that the costs are modest (Hollenbeck, 1993). Bates and Holton (2004) cite a 2001 study¹ that indicated that only 13 percent of organizations offered remedial training in literacy and math, and this figure was an 11-percentage-point reduction compared to 1993. Hollenbeck (1993) notes that even though 25 to 40 percent of all employees in small to medium-sized firms may have basic skills deficiencies, only 6 to 12 percent of firms engage in workplace literacy training.

Government subsidization may be a critical catalyst to increasing the incidence of programs (Campbell, 2003; Nesbit, 2002; Peterson, et al., 2002). Public funding is not simply altruistic, however, for at least three reasons. First, states may wish to avert the social costs of unemployment. These costs include income losses that are not insured by the Unemployment Insurance system, lost productivity because of involuntary unemployment, external costs such as the deleterious effects on physical or mental health that may occur because of unemployment, loss of tax receipts and possible expenditure increases, and general deterioration of the state's productive capital stock.

¹ The study was Dannah Bayton (2001), "America's \$60 Billion Problem," Trainingmag.com, May 5.

The second rationale for public funding is the notion that employers tend to avoid offering training that imparts general skills because of potential poaching by other employers. The classical Mincer/Becker (see Mincer, 1974; Becker, 1975) model of training implies that if workers gain skills that are general, i.e., useful in other firms, then those workers will become recruitment targets for other firms that may need workers with those skills. Basic skills training is general in nature.

A third justification for public intervention in the market for training is that capital markets do not readily fund investments in human capital. Human capital accumulations are not valued on a company's financial statements. Human capital cannot be collateralized, and business financing has a short-term payoff bias that militates against the funding of training.

In short, workplace basic skills training may be a win-win-win proposition for employees, employers, and states.

This article documents an evaluation of a set of workplace literacy pilot programs that were publicly funded by a state government and presents a summary of lessons learned from the initiative. The Indiana Department of Workforce Development (DWD) funded an innovative set of 10 projects making up its 21st Century Workplace Skills Initiative. One of the underlying concerns that motivated DWD was the perception that Indiana's economic competitiveness and growth may be constrained by a mature, incumbent workforce that has deficient basic skills. Overcoming skills deficiencies is difficult for these workers because they are not usually served by the formal education systems or federal second-chance training programs.

The core of the 21st Century Workplace Skills Initiative was a certification system. The DWD awarded certificates to workers who achieved certain levels of proficiency in reading, math, critical thinking, problem solving, and computer literacy. Three levels of certification

(gold, silver, and bronze) were based on specific achievement levels in reading and math as assessed by the Comprehensive Adult Student Assessment System (CASAS) and computer literacy as certified by Internet and Computing Core Certification (IC3). Problem solving and critical thinking were embedded in the CASAS reading and math assessments.

The evaluation was both qualitative and quantitative in nature. Two site visits to most of the 10 funded projects occurred, and they are the basis of the qualitative data. In addition, learning gains and earnings histories of participants were quantitatively analyzed.

QUALITATIVE FINDINGS

The evaluation design for site visits called for a first visit early in the Initiative's process to focus on planning and implementation, and for a second site visit near the end of the Initiative to focus on outcomes and lessons learned. Of course, the exact timing depended on project staff and employer and site staff schedules, and on instructional scheduling.

At one of the sites, an individual remarked that we must "get bored" by seeing the same programs over and over. Nothing could have been further from the truth. No two sites were even close to being identical. Probably the most striking aspect of the site visits was the tremendous variation in terms of numbers and characteristics of participants, types and characteristics of training, employer support, data collection and recordkeeping, and virtually every other dimension of program activity.

The site visits illuminated administrative challenges, findings about instructional delivery, employee and employer motivations, and hypotheses about key factors that facilitate success.

Administrative Challenges

Learning curve. A common phenomenon at all of the sites was an early struggle with implementation. Almost none of the sites were experienced with CASAS nor with IC3. Because of their unfamiliarity with CASAS, many sites were unaware of the need to conduct an appraisal prior to conducting a pre-test. Most of the sites had cemented relationships with one or more employers prior to receiving their grants. But in some cases, employer relationships were strained when it was determined that two testing periods would be needed in order to do a pre-test. Furthermore, participants in some sites were surprised that they had to take another test after taking the appraisals.

The digital literacy component of the demonstration turned out to be a major part of the effort, but almost none of the sites had experience with IC3, and they struggled to find instructors and curricula. In particular, the three-part structure of IC3—Computing Fundamentals, Key Applications, and Living Online—was unfamiliar to the sites. Some sites started with Computing Fundamentals but encountered considerable pushback from students (and employers) who felt it was too technical. Some sites started with Living Online, but that required Internet access and e-mail access, which were not always available to employee participants.

Programs involving multiple employers were difficult to administer. Three of the state's sites involved a single provider serving multiple employers. All three faced many obstacles, and all three ended up well short of their anticipated enrollments. Project staff members at one site tirelessly met with employers and provided considerable information about their program. They had success in getting employers to express interest, but ultimately the number of employees who showed up for the training was disappointing. Another site had

trouble with follow through from employers. Virtually all of the employers who were expected to participate in the program backed out, so this site essentially became a single employer site. The third site conducted its program with three employers, although the enthusiasm of one of the employers flagged considerably over the course of the demonstration. The site served a substantial number of participants, but the lack of paid time for the training took its toll, so that only the most motivated employees stuck it out for the whole program.

Instructional Delivery

Solid adult education was delivered. The instruction in this demonstration needed to be tailored by two factors: first, the learners were adults and, second, the instructional setting was in the workplace. Our observation of instruction suggested that sound adult education was taking place. For the most part, the learners were serious and highly engaged. All of the interviewees felt that their colleagues were serious-minded and not just looking for a reason to avoid work. The employees participated actively in discussions. They seemed motivated. On the other hand, as with most adult education, other responsibilities got in the way of attending class. Sometimes workloads would preclude an individual's attendance. Or a family matter would need to be resolved. In short, the instructors had to be flexible because they were never quite sure about how many or which students they would have in class. An instructor at one of the programs, who was a retired high school teacher, opined that this was perhaps the most important challenge she faced.

Having the workplace as the instructional setting was also a factor that sites needed to manage. Its main advantage was convenience. Students could attend during work hours if the site's arrangement with the employer involved training with paid time while they were on the

clock. Students who were on their own time could easily attend if the training were scheduled right before or right after their shift. The main disadvantage was that the physical layout usually was not particularly sound for instruction or testing (some of the sites, however, did have well-designed training facilities). Furthermore, some of the sites struggled with adequate technology or Internet access.

Contextualization. At the onset of the initiative, the expectation had been that curricula would involve considerable contextualization. The adult education professionals all realized the importance of framing the material within a familiar context (Askov 2000). Furthermore, the program designers' perception was that employers would see the benefits of inculcating workplace materials into the training. It was thus surprising to us to find a relative lack of contextualization. To generalize, the typical site had made some effort to include workplace materials, but they were generally not central to the instructional materials.

Several reasons might explain the relatively low incidence of contextualization. First, in the programs with multiple employers, firms may have been cautious about sharing workplace materials with employees from other (sometimes competing) firms. Furthermore, with employees coming from multiple firms, it may have been difficult to find materials that would be relevant to a number of individuals. Second, the digital literacy training dominated math and reading in many sites. The IC3 certification was difficult, and so instructors felt the need to stick with textual material that was supposed to be aligned with the certification. Third, some of the sites used off-the-shelf instructional materials that had been developed for other employers, and that were modified only slightly because the state funding did not permit substantial curriculum development. Fourth, in sites that involved college courses, the postsecondary institutions could not veer from the standard curriculum much because of credit considerations. Fifth, many of the

sites' employer partners were in the human resources department, and staff there may not have had access to or even been aware of the workplace duties or situations that employees encountered in their everyday job duties.

IC3; digital literacy emphasis. The staff and consultants who designed the initiative thought that basic literacy and numeracy skills would be the main focus, and digital literacy was “allowed” mainly to facilitate instructional delivery. As it turned out, this feature became one of the predominant aspects of the demonstration. However, sites struggled, both to find appropriate curricula and with the difficulty level of the certification itself. DWD realized that technologically delivered instruction had pervaded basic skills instruction (as it has most levels of education and training), so it decided to include digital literacy as part of the 21st Century certificate, but found a paucity of certifications that were competency-based instead of “seat-time”-based. An investigation led to IC3 as virtually the only candidate.

As the programs unfolded at the sites, it became apparent that many employees were attracted to the digital literacy component. These employees had little computer experience, and they wanted to learn because their family members (viz., children) were computer literate and because they saw that computers were becoming integral in the workplace. For the latter reason, many of the employer partners became enthusiastic about getting their employees the digital literacy instruction. Sites encountered many problems as they struggled to implement the digital learning/computer training, however. For example, there was no pre-test available to assess individuals' baseline skills or knowledge, so classes had very wide variation in skills—from individuals who had literally never turned on a computer to those who were quite adept and simply wanted to learn further skills and capabilities and to get certified. A second problem area

was the curriculum materials available, which turned out to be quite technical, outdated, and not well aligned with the IC3 certification.

Workplace support. To be effective, workplace literacy programs need to be supported and reinforced by supervisors and co-workers (Ashton et al., 2008; Askov 2000). Supervisors, managers, and co-workers need to understand how to support the learning process. In this initiative, virtually every participant at every site indicated that they had received such support from co-workers and supervisors. “My supervisor insisted that I participate and monitored my attendance and effort, which motivated me a lot,” according to one participant at a health care firm.

Motivations

College was a key motivator. Many of the sites promoted their programs as a chance to earn college credits or to prepare for college. According to participants who were interviewed, this was a strong motivator. Many of the programs’ participants had not attended college, and they feared that their lack of education jeopardized their job security or limited their promotion potential. One individual said, “I’m tired of all of those individuals passing me by because I don’t have any college.” One site offered a College at Work (CAW) program whose primary objective was for employees to earn credits in the local community college’s basic curriculum. Although it was less explicit, a university that delivered instruction at two other workplaces offered participants a single college credit and transcript. The individual participants who were interviewed placed importance on this credit and on receiving the transcript. At yet another site, some participants were motivated to attend the basic skills program because they wanted to succeed in a postsecondary technical program in a health services occupation.

Business motivations. In general, employers' primary motivation was to provide workplace literacy training as a benefit for employees. Their expectation was that it would improve morale, as well. The employers, who were interviewed for the evaluation, seemed relatively less motivated by an expected financial return. The business perspective seemed to be that if workers improved their skills and had better morale, they were likely to be somewhat more productive and, consequently, the business would benefit. However, the workers' benefit was the primary motivation for participation, not the business's benefit.

Keys to Success?

Program champion and paid time. With only 10 sites and with the extreme variation across sites, we could not rigorously test hypotheses about how or which program features were most efficacious. However, our site visit observations suggested two characteristics tended to be associated with those programs that seemed to have the highest levels of employer and participant satisfaction and the most successful outcomes. First, the program needed to have a "champion" in the business firm; these individuals tended to be a mid-level or higher manager. Because of the pilot nature of the program, many changes were made along the way, and it was important for an individual at the business to understand why the changes were made and to have enough authority to exercise the flexibility required to make the needed adjustments. The other characteristic that seemed to be associated with program success was the employer practice of fully compensating workers for their time spent in training. About half of the sites had this feature; those sites had no difficulty in recruiting individuals, and they had very high attendance rates. On the other hand, when the training was on employees' own time, attendance faltered, and the expected number of participants lagged well behind what was expected.

QUANTITATIVE FINDINGS

Three sources of information were analyzed: 1) a survey of program participants that provides information about their demographic and background characteristics, 2) test scores, and 3) administrative earnings data. All of the sites submitted completed baseline surveys, and there were a total of about 1,800 respondents included in the analysis. It is important to note that this response included two very large sites that together made up two-thirds of the reported data; one of them, in fact, had over 50 percent of the respondents.

Demographic Data

The average age of trainees at baseline was about 40; i.e., they were very much a prime age group. A majority of the respondents were white, about 60 percent were female, and nearly all were non-Hispanic persons whose primary language was English. Of course, there was significant variation across sites in these characteristics. For example, one site was virtually entirely of Hispanic ethnicity and had a much younger mean age. Two sites in the metropolitan Indianapolis area had a majority of participants who were African American. Although there were exceptions, the health care sites tended to have a higher percentage of women participants, and the manufacturing sites enrolled more men.

Labor Market and Public Assistance Characteristics

Participants were earning an average hourly wage of \$11.42 and averaged 41 hours of work per week at the time of the baseline. They averaged 4.5 years of tenure with their employer. As might be expected, the manufacturing sites tended to have higher wage rates and longer hours. The overall tenure average was highly skewed by the inclusion of a site with a

major employment expansion, where a lot of workers were new. If that site were excluded, the average tenure was 7.7 years.

A fiscal benefit of the initiative that the state hoped to achieve was a reduction in take-up of public assistance benefits. We were not able to demonstrate that sort of reduction with administrative data on public assistance, but the baseline data suggest that substantial savings could be accrued because over 17 percent of the participants reported receiving assistance from TANF, food stamps, Medicaid, child care assistance, or IMPACT (a welfare-to-work program) participation. The largest share of the public assistance benefits were in food stamps and Medicaid eligibility.

Educational Status and Goals

Overall, more than half (about 54 percent) of the participants had no postsecondary experience (i.e., a high school diploma, a GED certificate, or less than a high school diploma). An additional 25 percent had attended some college or tech school but had not earned a degree. The remaining approximately 20 percent of the participants had a vocational/trade certificate, associate's degree, bachelor's degree, or higher. The percentages varied substantially across sites. Two sites had 70 percent of their participants with less than a high school diploma. On the other hand, two other sites had 1 percent or less at that level. The baseline form also asked individuals for their educational goals. The participants as a group were highly interested in further education. Whereas only about 20 percent of the participants had a postsecondary certificate or degree, over 60 percent indicated that they intended to pursue that level of education.

Test Scores

Test score data, which were crucial control and outcome variables for the initiative, turned out to have severe limitations. Most of the sites had been unfamiliar with CASAS prior to the initiative, and there was some confusion at the sites about test administration as they traversed their learning curves. The design of the CASAS assessment system calls for an appraisal (locator) to be given to individuals in order to determine which assessments would be valid for administration of a pre-test. Then individuals should be pre-tested on an appropriate assessment. Instruction would take place, and then a post-test could be given to document learning gains. Most of the sites were unfamiliar with the CASAS system, however, so the process was rarely followed rigorously. There was confusion about why “two” pre-tests had to be taken. Furthermore, the assessments were all scaled the same, and so many scores from the appraisal were above 245 (the gold range).

Only three of the sites administered the appraisal (one of the sites had multiple employers). As might be expected, the reading scores were quite a bit higher than the math scores. The mean scaled scores for math at all of the sites was less than the mean for reading. Furthermore, the largest majority of the math scores were in the silver range (226 to 245), whereas they were in the gold range (greater than 245) for reading. About one-third of the individuals who took the appraisal also took a pre-test, so we could get some idea of how well the scaled scores on the assessment aligned with the scaled scores on the pre-test. Of course, a simple testing effect would suggest that the second test (the pre-test) would have higher scores because of familiarity. In math, the pre-test scores were approximately two to six points higher than the assessment scores, on average. In reading, the discrepancy was greater. The scores were about 6 to 12 points higher, on average.

Table 1 displays the results from the total population of learners who took the pre-test (including those just discussed who also had appraisal scores). Two results bear noting. First, as with the appraisal data, the math scores were considerably lower than the reading scores. With just a couple of exceptions, the difference in mean-scaled scores across sites between math and reading were between 12 and 20 points. Second, there is quite a bit of variation across the sites. In math, four of the sites had average math scores that were below the cutoff for silver; two of them were below the cutoff for bronze. For three of the sites, almost 90 percent of the math test takers had scores of less than 226. In reading, all but three of the sites had means that were above or just below the cutoff for gold, and all but two of the sites had a majority (or plurality) of participants whose scores were above 245. On the other hand, two of the sites had scores that were much lower than those for all of the other sites.

Table 1 CASAS Pre-Test Scores, by Site

Site	Math			Reading				
	Average score	Percentage with scores ^a :			Average score	Percentage with scores ^a :		
		< 226	226–245	> 245		< 226	226–245	> 245
Site A								
Employer 1	239.4	8.5	68.1	23.4	252.7	0.0	28.0	72.0
Employer 2	242.8	1.4	64.3	34.3	255.8	0.0	13.0	87.0
Employer 3	246.6	0.0	42.9	57.1	261.7	0.0	0.0	100.0
Site B	225.3	41.7	57.4	0.9	249.4	10.0	40.9	49.1
Site C	230.7	23.3	73.4	3.3	243.8	0.0	36.7	63.3
Site D	209.7	88.9	11.1	0.0	227.6	44.4	50.0	5.6
Site E	201.3	87.5	12.5	0.0	201.3	93.9	6.1	0.0
Site F	219.3	83.3	16.7	0.0	240.0	11.5	42.3	46.2
Site G ^b	238.2	20.8	58.4	20.8	244.2	14.3	25.7	60.0

Note:

^a These classifications correspond to the state’s achievement levels necessary for a bronze, silver, and gold certificate.

^b This site had multiple employers, but the individual employers were not identified.

Only about one-third of the individuals with a pre-test had a post-test. (See Table 2.) What is perhaps most unusual is that the mean scores for the post-test are much lower than the

means for the pre-test. Two reasons explain this. First, at many sites, individuals with high scores on the pre-test were not required to or were not interested in taking a post-test. Second, the post-test results exclude one of the sites with fairly well-educated workers; which tended to have high pre-test scores.

Table 2 CASAS Post-Test Scores, by Site

Site	Math				Reading			
	Average score	Percentage with scores ^a :			Average score	Percentage with scores ^a :		
		< 226	226–245	> 245		< 226	226–245	> 245
Site B	231.8	22.2	77.8	0.0	247.7	3.2	34.9	61.9
Site C	231.4	24.0	68.0	8.0	243.0	0.0	44.0	56.0
Site D	217.5	63.6	27.3	9.1	222.5	54.6	27.3	18.1
Site E	209.2	82.8	17.2	0.0	206.1	92.6	7.4	0.0
Site F	225.3	33.3	66.7	0.0	231.7	3.3	50.0	16.7
Site G ^b	246.0	0.0	0.0	100.0	234.4	42.8	28.6	28.6

Note:

^a These classifications correspond to the state’s achievement levels necessary for a bronze, silver, and gold certificate.

^b This site had multiple employers, but the individual employers were not identified.

Learning Gains

As shown in Table 3, we ended up with pre- and post-test data for only about 140 participants, which is about six percent of the initiative’s participants (16 percent of the participants from all sites excluding the largest site). In general, participants exhibited modest learning gains. For math, 70 out of 105 test-takers (67 percent) had positive gains between the highest standardized score on a pre-test and the highest standardized score on a post-test. The average gain for the entire sample (including the negative and zero gains) was 4.7 points. For reading, 79 out of 139 test-takers (57 percent) had positive gains from pre- to post-test. The average gain for the entire sample was 2.8 points. Interestingly, the site that had its entire program in ESL had the most positive learning gains—more than 10 points for math and 8 points for reading.

Table 3 CASAS Learning Gains (Post-Test Minus Pre-Test), by Site

Site	Math			Reading		
	Number of test-takers	Number with positive gain	Average gain	Number of test-takers	Number with positive gain	Average gain
Site B	36	20	2.4	63	37	2.2
Site C	25	13	1.2	25	10	0.2
Site D	11	8	5.7	11	4	-0.2
Site E	29	26	10.4	27	22	8.1
Site F	3	2	2.7	6	1	-0.3
Site G	1	1	6.0	7	5	6.1
TOTAL	105	70	4.7	139	79	2.8

IC3

The IC3 certification was, by most accounts, a difficult assessment. Most sites began with its Living Online component. As shown in Table 4, the overall pass rate for that component was about 64 percent. The pass rates for Computing Fundamentals and Key Applications were somewhat higher than for Living Online, but the reason for that is partly because at some of the sites, the students were only allowed or encouraged to pursue other components if they passed the Living Online certification.

Table 4 IC3 Pass Rates, by Component and by Site

Site	Living Online		Computing Fundamentals		Key Applications	
	Test-takers	Passes	Test-takers	Passes	Test-takers	Passes
Site A						
Employer 1	77	55	42	42	47	43
Employer 2	69	44	33	28	38	31
Employer 3	11	7	8	7	9	7
Site C	20	13	15	1	1	0
Site D	11	2	4	0	0	0
Site F	2	0	4	1	6	0
Site H	0	0	23	8	0	0
TOTAL	190	121	129	87	101	81

LESSONS LEARNED

The Indiana Department of Workforce Development designed and funded the 21st Century Workplace Skills Initiative to raise the basic workplace skill levels of Indiana workers while exploring the viability and effectiveness of different models of workplace basic-skills education. To build upon a cliché, the pilot demonstrations were intended to be not only win-win but win-win-win-win programs. Indiana workers would gain basic skills, which would result in more stable careers and higher wages and productivity. Employers would gain more productive workers who would exhibit better workforce attachment, which would translate into business payoffs such as enhanced productivity or profitability. The field of basic skill instruction would learn from the experiences of the Indiana partnerships offering innovative programs in diverse workplace settings. And the state would have more competitive employers with more productive workers, and state government would develop a workplace basic-skills training capacity. We summarize here the initiative's payoff to workers, the payoff to companies, the payoff to the literacy field, and the payoff to the state of Indiana.

Payoff to Workers

Table 5 summarizes the six lessons that we learned about the payoff to some or all of the workers who participated in the initiative. First, most participants genuinely were appreciative of their employers for offering the opportunities. Significant morale improvements occurred at virtually every site. Second, the level of participation and excitement among many of the workers underscored a substantial demand for or interest in upgrading skills. Employees seemed to understand clearly the importance of training and skill acquisition to their own job and career prospects. The third lesson we learned was that the possibility of earning college credit was a

strong motivator for workers, in addition to the prospect of upgrading skills for their own productivity.

Table 5 Lessons Learned about the Payoff to Workers

- Workers appreciated training; morale improvements occurred
 - High level of demand for training from workers, indicative of worker understanding of importance
 - Possibility of earning college credit strong motivator
 - Earning skill certificate not a strong motivator
 - Digital literacy/computer training highly valued by workers (and employers)
 - Benefits to workers highly heterogeneous, but likely to be positive in aggregate
-

Fourth, as implemented in this initiative, the opportunity to earn a skill certificate was not a strong motivator for workers. Workers seemed to understand the linkage between their own skills/knowledge and productivity, but were less clear about the value of certifying the skills/knowledge. Workers apparently did value computer training because it became a major component of the initiative. There seemed to be two motives: some workers had absolutely no background and wanted to get very basic training, and other workers were interested in upgrading their skills. Most participants, but especially the former group, found the IC3 certifications to be quite challenging. Finally, we believe that the benefits to the workers were highly variable: A few workers blossomed, many workers had positive experiences, and some workers probably benefited only a little. Of course, when you add all of these together, you get a substantial aggregate payoff to workers.²

² Hollenbeck (1993, 1994) provides estimates of the return on investment to workplace literacy training. Ananiadou et al. (2004) review studies on the returns to individuals of general training at the workplace. In general, their evidence suggests that better numeracy and literacy skills have a strong positive effect on earnings and employment stability.

Payoff to Companies

The employers came to this initiative as voluntary partners or as grantees. None of them seemed to regret their participation. Rather they expressed appreciation for the chance to train their workforce. Whether it was the manufacturing, health care, tourism, or human service sector, all of the business owners and managers interviewed clearly noted the growing competitiveness of their markets. Attracting and retaining employees was noted as a continual issue for these businesses. Owners and managers viewed training as a key strategy for operating efficiently and as a means to grow their own workers through promotions.

Despite their understanding of the strategic nature of training, perhaps the most notable observation about employer involvement was the lack of interest in or attempt to measure potential business outcomes from the initiative. It became apparent through interviews that businesses became engaged in the initiative mainly as a benefit for employees. They saw it as a way to improve employee morale. Most of the business representatives understood and articulated the fact that if workers would improve their basic skills and exhibit higher levels of morale, then they would likely be more productive. However, virtually none of the employers attempted to measure such outcomes. In one instance, the business representative indicated that retention was a major concern in their company given the competitive local job market. The representative even commented that the company lost fewer workers during the traditional summer hiring period as a result of this training program; however, there was no formal retention tracking by position or within this training program.

Payoffs to Literacy Providers

While the payoffs were not of a financial nature, the initiative contributed a number of valuable lessons to the field of workplace literacy. The first concerns an issue with which the field needs to grapple: the impetus for the Indiana initiative was a belief that the basic skills of a substantial share of workers were deficient and were jeopardizing economic growth and competitiveness. However, the scores on the CASAS appraisal and pre-test were quite high. Workers seemed to possess reasonably high levels of skills, and as a consequence, far less basic-skill training was pursued by sites than had been planned. The question is naturally raised as to how this occurred. Was the underlying assumption of deficient basic skills in error?

Some hypotheses might be put forward, and the truth may lie in some combination of them. First, the initiative may not have tested the lowest functioning employees. At most of the sites, participation was voluntary. Individuals with extremely low levels of literacy may not have wanted to be identified out of fear of being stigmatized. For sites that had a limited number of participants, only the more motivated (and more capable) employees may have volunteered.³ Another hypothesis is that CASAS doesn't measure the literacy and numeracy skills that are important in the workplace. That is, employers' reports of deficient basic skills may be referring to a workplace vocabulary or a type of problem-solving that is not tested by CASAS. If this hypothesis is true, then there is an imperative to contextualize the instruction in workplace learning programs to provide room to develop more authentic assessments.

The computer skills of participants were extremely heterogeneous. Some individuals had never turned on a machine; others used computers in their jobs on a daily basis. IC3 certification seemed difficult for the latter and impossible for the former. There seems to be a pressing need

³ Bates and Holton (2004) discuss this characteristic of voluntary programs.

to design a valid pre-assessment of computer skills, and to develop a training curriculum for those who have very little background or knowledge. Furthermore, there seems to be a need for an alternative assessment tool that is not as technical as IC3 for individuals who have limited expertise.

Lessons learned from this initiative in terms of motivating participation included the not-surprising finding that paid time for training was important, but perhaps more surprising was the importance that workers placed on receiving some college credit. Most of the workers who were interviewed had not attended any postsecondary institution, and they were usually quite proud of the fact that they were going to get some college credit and a college transcript, all at the expense of their employer. This finding suggests that employers or providers interested in offering workplace basic-skills instruction should try to collaborate with a postsecondary institution.

Payoff to Indiana

Ultimately, for the state, the initiative could be judged as a glass that is half full or half empty. Many potential lessons were learned, and, workers and employers in the aggregate probably received significant benefit from the initiative. However, the extreme differences among the sites and the deviation in every site from the ideal program meant that there were really 10 strikingly different “treatments” and no benchmark to which they could be compared. Thus from an evaluation perspective, our ability to answer the question of what worked for whom was not possible. Instead we have offered observations and hypotheses that we hope will help tailor future endeavors in this arena.

Note: For information about the workplace literacy demonstration, contact Terri Schulz, Indiana Department of Workforce Development, (317) 233-5663, tshulz@dwd.in.gov.

REFERENCES

- Ananiadou, K., Jenkins, A., & Wolf, A. (2004). Basic skills and workplace learning: What do we actually know about their benefits? *Studies in Continuing Education* 26(2), 289–308.
- Ashton, D., Sung, J., Raddon, A., & Riordan, T. (2008), *Challenging the myths about learning and training in small and medium-sized enterprises: Implications for public policy*. (Working Paper No. 1.) Geneva: International Labor Office, Employment Sector.
- Askov, E. N. (2000). Workplace literacy: Evaluation of three model programs. *Adult Basic Education* 10(2), 100–108.
- Bates, R., & Holton, E. F. III. (2004). Linking workplace literacy skills and transfer system perceptions. *Human Resource Development Quarterly* 15(2), 153–170.
- Bayton, D. (2001). America's \$60 Billion Problem. May 5. *Trainingmag.com*.
- Becker, G. (1975). *Human capital* (2nd ed.). New York: National Bureau of Economic Research.
- Campbell, A. (2003). *Strength from within: Overcoming the barriers to workplace literacy development*. Ottawa: Conference Board of Canada.
- Conference Board. (2006). *www.WorkplaceBasicSkills.com*. Website developed by The Conference Board. New York: Conference Board.
- Hollenbeck, K. (1993). *Classrooms in the Workplace*. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.
- . (1994). The economic payoffs to workplace literacy. *Literacy Networks* 1(1), 19–41.
- Mincer, J. (1974). *Schooling, experience, and earnings*. National Bureau of Economic Research: distributed by Columbia University Press.
- Nesbit, T. (2002). *Workplace literacy: A labour perspective*. Paper presented at the Annual Meeting of Adult Education Research Conference, Raleigh, NC.
- Peterson, E., Ott, J., & Wilson, K. (2002). *Promoting workplace literacy*. Lancaster, SC: J. Marion Sims Foundation.