

*Findings from the Field:*  
*Early Findings of the New Jersey Online Learning Project for*  
*Single Working-Poor Mothers*

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A Report of the  
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## **Overview**

In 2001, the U.S. Department of Labor, Women's Bureau, and the U.S. Department of Labor, Employment and Training Administration, awarded the New Jersey Department of Labor a grant of \$500,000 to pilot a project to determine whether online learning, which had proved effective in increasing the skills of college-educated workers, could prove equally effective in improving the skills and earnings of low-wage workers. Slightly more than 100 working single mothers, all of whom earned less than 250 percent of the poverty level, were accepted into the pilot program and received computers, Internet access and online courses to improve their skills. The main findings are summarized in the conclusion of the report.

While the demonstration project does not officially end until December 31, 2003, our research to date indicates that online learning is successful in increasing the skills of participants and is cost-effective relative to onsite training. This report will detail some of these preliminary findings, and elucidate how online learning nationally can target a large population of workers, many of whom often are excluded from traditional modes of training and education, to increase their skills attainment.

## **The Skills Training Crisis for Two-Fifths of American Workers**

*Imagine you are a high school educated single mother with two children under the age of ten. You are working two jobs- 3 days you are a part-time bookkeeper at your local church, and your weekends are spent waitressing at the diner by your apartment. You earn about \$15,000 a year, and are literally living paycheck to paycheck. A few slow shifts at the diner in a week and you are unable to pay all your bills this month. You know you need skills training in order to get a higher paying job, but you do not know when you will fit classes into your day or how you will pay for them. Yet time binds and financial cost are only some of the barriers that you face in trying to attain workplace skills. Locating affordable and "off hours" childcare (such as on nights and weekends when many classes are offered) often proves to be a daunting and expensive task. In addition, you may be among the one-third of families earning \$15,000 or less who do not own a car, making the act of just getting to class a challenge. What are you to do?*

This woman's experience is played out day after day throughout the United States, as low wage workers attempt to find ways to balance work, family and skills training in order to improve their lives. Indeed, a considerable number of workers work full-time and still do not earn enough money to attain economic self sufficiency. About two-fifths of all households, and well over half of Black and Hispanic households, have family incomes that are below 250% of the poverty line (\$43,700). These households are about evenly split between low income ( $\leq$  \$25,000 a year) and lower middle class ( $>$  \$25,000 and  $<$  \$43,700) families. This growing demographic group, often referred to as the working poor, remains stuck in low wage work that does not economically provide for themselves and their families.

Much evidence has demonstrated that a major factor in explaining these low incomes is low skill attainment. A large number of workers simply do not possess the high level skills demanded of the current workforce, and without access to skills training opportunities will continue to be left behind. Labor market trends indicate that there will be significant growth in jobs that require competent or advanced skills, while much slower growth in jobs that require basic or minimal skills throughout the early part of the 21<sup>st</sup> Century.<sup>1</sup> Further these high level skill demands are required in all industries, including industries that are not typically associated with high level skill demands. For example, 59.4 percent of sales related jobs in the service sector require skills beyond those of a high school graduate.<sup>2</sup> Partly as a result of these changing skill demands<sup>3</sup>

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<sup>1</sup> Carnevale, Anthony and Donna Desrochers. 1999. Getting Down to Business: Matching Welfare Recipients Skills to Jobs That Train. Princeton, NJ: Educational Testing Service.

<sup>2</sup> Levenson, Alec, Elaine Reardon, and Stefanie Schmidt. 1999. Welfare, Jobs and Basic Skills: The Employment Prospects of Welfare Recipients in the Most Populous U.S. Counties. NCSALL Reports #10B. Boston: National Center for the Study of Adult Learning and Literacy.

across industries, high school educated workers have seen their incomes drop 27 percent over the past three decades<sup>4</sup>. Indeed, high school educated and below workers are a very large fraction of our workforce. In 2002, 40 percent of all workers – 42 percent of employed men and 38 percent of employed women – had a high school degree or less. In absolute numbers this equates to 46 million workers (26 million men and 20 million women)<sup>5</sup> who are experiencing decreased labor market returns to their skills.

While the American working poor earn less and have fewer years of education than workers at higher rungs in society, there is much agreement that any movement up the socio-economic ladder is dependent on education and training. In fact, in order to achieve economic success in the 21<sup>st</sup> Century, it is clear that one must broadly define education and training to include not just completing a high school diploma or a community college degree, but also mastering additional training and certifications in technical areas, information technology and/or soft skills.

However, while few doubt that education and skills training have positive effects on labor market rewards and economic self sufficiency, the real challenge for low wage workers is attaining that education and training. The working poor face a set of barriers that makes the traditional ways of delivering skills training difficult, if not impossible. Foremost, childcare needs place a burden on many individuals in this population that often prevents them from attending traditional education programs. Locating affordable childcare and “off hours” childcare (such as on nights and weekends when many classes

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<sup>3</sup> Other reasons include a decrease in the value of the minimum wage, and a decline in the manufacturing sector.

<sup>4</sup> New Jersey State Employment and Training Commission. 2001. New Jersey in Transition: The Crisis of the Workforce.

<sup>5</sup> Data from the Center for Economic and Policy Research, CEPR ORG Extract Version 0.9; and is limited to workers aged 25 to 64.

are offered) often proves to be a daunting task. In addition, a large percentage of non-college educated workers are located in jobs with irregular schedules, such as those characteristic of the service sector, making it difficult to attend classes that are inflexible in their scheduling. In addition to childcare needs and irregular schedules, transportation also proves to be a significant barrier, making the act of just getting to classes a challenge. Nationally, one-third of households earning less than \$15,000 a year do not own a car (Stovern, 2002 as quoted in Van Horn and Schaffner, 2003). This is especially relevant in suburban and rural areas where typically there are not extensive public transportation systems. Furthermore, non-college educated workers often find very little access to employer-sponsored training. Lisa Lynch and Sandra Black (1995) found that employers' investment decisions in regard to employee training are influenced by the characteristics of the workers that they employ. Overall, they found that employees who are perceived as having a high turnover rate and/or possess lower levels of formal education are less likely to receive employer provided training.<sup>6</sup> As a result of these barriers workers either forego training opportunities, or spend years attempting to complete credentials or degrees by taking one to two classes every few months. The relevant question then is not whether skills training is needed, but what is the best way to deliver that training to the working poor.

### **Why Online Training?**

An innovative approach to addressing the barriers of attaining skills training is to provide the training via online learning. Online learning provides significant advantages to both the participants in the skills training program and their families that are not

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<sup>6</sup> See Lynch, Lisa and Sandra Black. 1995. "Beyond the Incidence of Training: Evidence from the National Employer Survey." Working Paper No. 5231, National Bureau of Economic Research.

available in traditional settings. First, online learning offers flexibility in time and place. Participants can learn at their own pace, in their homes (or virtually anywhere), and attend classes when they can fit them into their schedules-taking classes at any hour or any day of the week. Further, online learning is cost effective, as participants save money and time in childcare and commuting when they receive skills training via technology in their homes.

While online learning may not be appropriate for everyone---it places a premium on discipline and self motivation---it has many advantages. In addition to flexibility in time and space, skills training online offers opportunities for literacy that reach beyond course content. Students are increasing their skills using the very tool – the computer- that is markedly affecting the type of skills that are demanded in our laborforce. Through online learning participants also increase their facility with computers and the Internet, learn how to troubleshoot technology, and improve their typing skills. By bringing the computer into the home, these benefits extend beyond the workers themselves and also help to also increase family literacy. While access to computers and the Internet has increased over the past years, research continues to demonstrate that disparities across social class and educational level persist. According to the National Center for Education Statistics (2000) households with incomes of \$75,000 or more are twenty times more likely to have access to the Internet than families with less income. Further, while 63 percent of our nation’s classrooms are wired for Internet access, the digital divide continues to exist. In schools where 71 percent or more of children are eligible for free or reduced price lunches, only 39 percent of classrooms are wired. Alternatively, in schools where less than eleven percent of students qualify for subsidized lunches, 74 percent of

classrooms are Internet ready. As such, providing a computer in the home provides opportunities for children to increase their literacy.

### **The New Jersey Online Learning Pilot Project**

The New Jersey project was piloted in five Workforce Investment Board (WIB) areas—Bergen, Cumberland, Middlesex, Monmouth, and Morris/Sussex/Warren. While each WIB area centralized the project through a local One Stop Career Center, each program was designed and implemented differently, allowing us to evaluate both the effectiveness of online learning as a skills delivery mechanism, and features of the program that would best help participants successfully attain skills training.

As noted earlier, all participants in the New Jersey pilot project are single mothers. This demographic group was chosen quite purposively. First, single mothers comprise a growing portion of our laborforce and increasingly find themselves among the ranks of the working poor. In 2001, never married, divorced, separated, and widowed women with children under eighteen years old earned on average significantly less than married women with children under eighteen (median weekly earnings of \$430 and \$524, respectively) (US DOL, 2002, Report 960). Single mothers with children under six years old fared the worst, earning a median weekly income of only \$379. As a result, families maintained by women with children under eighteen years old have the highest probability of living in poverty – a rate of 21.9. This is more than double the rate of families maintained by men with children under eighteen years old (rate of 10.1) and four times greater than the rate of married couple families with children (rate of 4.9) (US DOL, 2002, Report 957). Second, single working poor mothers may be amongst the “busiest” people in the United States. In fact, they seem to experience all the major challenges---

childcare, irregular work schedules, time binds, and transportation--- that make skills training via traditional venues difficult. Quite frankly, if online learning is effective for this group of workers, it is very probable that it would also be effective for other similar demographic groups. The following sections of this report highlight some of our early findings.

### **A Composite of the Participants**

*Socioeconomic Characteristics.* The 128 women in the New Jersey pilot program represent a diverse population of working poor single mothers. Table 1 details some of the main characteristics of this sample. The average age of the women is 32 years old; with the youngest women aged 20 years old, and the oldest women aged 54. Our sample also represents diversity in regard to race/ethnicity. Fifty-six women are Black, 24 are Hispanic, 47 are White and one is Native American. In regard to educational attainment, the majority of women (68) are high school graduates or have earned a GED. Seven women did not graduate high school; 18 women hold associates degrees; 24 women attended college; six women have a college degree; 15 women have some type of technical certification; and two women have graduate degrees from universities outside of the United States. While all women in the pilot program have incomes of 250 percent or less of the poverty line, the average annual income of the women is \$16,900; with the highest income in our sample of \$43,000, and the lowest income of \$5,700.

**Table 1****Demographic Breakdown**

County	<u>Bergen</u>	<u>Cumberland</u>	<u>Middlesex</u>	<u>Monmouth</u>	<u>Morris</u>	<u>All Counties</u>
Participants	21	23	17	39	28	128
<b><u>Age</u></b>						
Low Age	20	22	22	21	48	20
High Age	54	49	46	50	20	54
Average Age	36	33	34	29	26	32
<b><u>Ethnicity</u></b>						
African American	12	7	9	24	18	56
Hispanic	4	9	3	4	6	24
White	5	7	5	10	4	47
Asian	0	0	0	0	0	0
Native American	0	0	0	1	0	1
<b><u>Highest Degree</u></b>						
Less than High School	1	0	0	6	0	7
High School	13	15	8	14	18	68
Associate			1	10	7	18
Some college	5	6	2	7	4	24
Bachelor	0	0	3	0	3	6
Technical* some women reported in both HS and technical categories	1	2	2	6	4	15
Graduate	1	0	1	0	0	2
<b><u>Marital Status</u></b>						
Single	15	13	10	32	14	84
Divorced	3	5	5	5	7	25
Separated	3	5	2	2	7	19
<b><u>Personal Characteristics</u></b>						
Disabled (either physical or learning)	1	2	1	1	2	7
English as a Second Language	4	0	4	2	9	19
Average Number of Children	2	2	2	2	2	2
Depend Upon Public Transportation	5	1	1	15	5	27
Own Car or Family member's car	16	22	16	24	23	101
<b><u>Income Information</u></b>						
Income High	30,000	26,000	40,000	43,000	30,000	43,000
Income Low	14,000	11,000	9,000	5,700	12,000	5,700
Mean Income	20,700	18,600	23,500	19,400	18,000	16,900
Median Income	21,000	20,400	21,500	13,850	15,000	18,500
<b><u>Past Internet/Distance Learning</u></b>						
Taken DL Before	5	0	0	0	1	6
Used Internet before	21	18	14	35	12	100
Used email before	19	19	7	28	17	90
Used chat rooms before	5	7	10	22	17	61
FTP files before	10	3	3	13	11	40

***Occupational Distribution.*** The women's occupational distribution represents a variety of industries and occupations. Many women (58) work in administrative office positions such as secretaries, receptionists, and office assistants. Women in our sample are also employed in the service sector. Twenty-seven of the women work in retail sales/restaurants/housecleaning; and 15 women work in childcare and daycare. Sixteen women in our sample work in the health care industry in such jobs as Certified Nursing Assistants, dietary aides and medical assistants. There are also three women who work in factories, two women who are employed as bus drivers, five women who are bank tellers, and one mail carrier.

***Online Learning and Computers.*** The women in our pilot also represent diversity in regard to variables associated with learning techniques relative to online learning. Seven women in our pilot program have disabilities; for 19 women, English is their second language; and 27 women do not own a car and use public transportation. Further, the women in our sample came into the program with a range of experience with computers and the Internet. One hundred women have used the Internet prior to this program most accessing through library programs and workplaces, 90 women have used email, 61 women have entered chat rooms, but only 40 women have sent a file through email (FTP). This data indicate that while many women are familiar with the basics of computers and the Internet, less than one-third of the women have used the computer for more advanced purposes, such as file transfers. In addition, for close to 20 percent of the women in the pilot program, this was the first time they accessed the Internet and other forms of information technology.

**Educational Goals.** The women in our pilot project are, for the most part, planning to return to school to work toward a formalized degree, be it a GED, Associate or Bachelor. However, many of the women see numerous obstacles, most commonly childcare demands, which prevent them from achieving that goal in the near future. For instance, a woman told us that:

*I was trying to go to school but it was too hard because of my daughter and having someone to watch her.*

Many other women reiterated this challenge in regard to educational attainment. For example,

*I want to go to college but I don't see it being something that would fit in my life now because of the kids, money and not much time.*

In addition to balancing school and family demands, women saw other obstacles to their education success, such as financial constraints. One woman reported that:

*I would like to do my masters degree but I don't have the money, so I cannot afford it.*

Further, women also reported that they were apprehensive about returning to school. A participant told us that:

*I would like to take college courses but I'm afraid. I'm hoping to gain confidence through this program.*

Interestingly, all the obstacles that are preventing the women from furthering their education are minimized and sometimes even eliminated by online learning. Further, regardless of the reason or reasons that women in the pilot program have postponed furthering their education, they all see the online learning program as an initial step in their educational attainment. It is then important to ensure that the women are provided

with ways to transition onto other online educational programs, such as colleges, GED programs, and vocational schools.

***Reasons for Enrolling in Online Learning Program.*** While the women each enrolled in the pilot program for a variety of individual reasons, there are some common threads among their explanations. Many women reported that they enrolled in the program in order to gain a skill set that will allow them to get a job that provides self sufficiency wages. For example, one participant told us that this program could help her advance in her current job.

*I am only a clerk typist and I need to make more money, and my boss was pleased with me and suggested this program.*

Another woman told us that she enrolled in this program in order to change jobs within her workplace.

*I wanted to participate in this program to enhance my computer skills so that I can get certification in computers and I can make a lateral move in my job.*

In addition to advancing within their jobs, many women report that this program will provide them with the skills necessary to change jobs in order to increase their earnings.

For example, a woman who feels she is stuck in her current job told us:

*My mom saw an ad in the newspaper about this program, and because I have been with my company so long and there is no room for advancement because I work at a car dealership, I thought that through this program, I could learn computer programs and get more training and look for a better job.*

While several women, mirroring her sentiment, reported that they were located in jobs without opportunities for advancement, other women reported that they entered the program because they were ready to change jobs. One woman told us that:

*I went through the workforce and I have been doing nursing for 20 years and I am looking for something different.*

Women also enrolled in the program for the opportunities to receive training and certifications in Microsoft Office products. They believed the certification would be a credential that they could use to either increase their pay in their current job or find a higher paying job. A participant told us that this program is:

*An opportunity for me to advance and obtain a certificate. I am self taught on the computer but need certification.*

The ability to get Microsoft certifications and training were a driving force behind many of the women's reasons for entering the program. A woman summed it up for us when she reported that:

*I've been trying to get computer training and this was a great opportunity.*

This program also offered women the chance to obtain general computer skills and Internet access. One participant told us that this program will provide her with both the opportunity and equipment to learn more about the Internet in her home.

*The program seemed interesting and I wanted to have Internet access to better my career. I've been going to the library to teach myself computers already so these courses will help me. I have a young son and he is already on the computer at school.*

This program also provides women with an opportunity to access to computers that they do not have elsewhere. One woman told us that:

*I want to be a success and know that I need to learn the computer. My child knows the computer better than me. I feel like I am missing part of life.*

Women also report that they enrolled in this program in order to help increase their family literacy. A woman reported that:

*I use computers at work and don't own a computer. My daughter loves computers and we don't have one.*

Another reiterated this point.

*I think it could benefit me and my children. It gives me an opportunity to learn more computer skills and gives my daughter access and opportunities that she wouldn't have before.*

In addition, the women report that by working on this program at home they can also serve as role models for their children. A woman told us that:

*The sole purpose of this program is being able to better myself. Anything I can get I always try to take advantage of. I have a nine year old girl who looks to me for everything. I need to further myself so she knows that there is a lot out there.*

The women in the program also report that being part of an online learning program, would help them gain confidence to help them further their education and advance their jobs. One told us that:

*I need a leg up to give me that extra edge to succeed. It is hard enough to be a woman this will give me more confidence.*

Another woman reiterated her point.

*I am intimidated by computers and I feel it will help me in the workforce to get a better job.*

Finally, women reported that they enrolled in the program because it provided them flexibility to complete their education in a way that would not conflict with their work and family demands. A woman told us that:

*I've been investigating court reporting, but I cannot attend the courses because of my daughter. Who will watch her at night? So I saw the newspaper article and thought this could be the way to go.*

Another also told us that:

*I'm in college but the problem is when I can take the classes because I need a sitter. I work full-time and have to go [through college] slow. So I was really interested in this program.*

## **The Success of Online Learning for Less Skilled Workers**

While a majority of the women are currently active in the program we have conducted focus groups and interviews with the women in order to ascertain their experiences in the online learning program, and quantitatively documented their progress. The New Jersey online learning pilot project is clearly demonstrating that online learning is an effective mode of skills delivery. The participants in the project are completing courses, receiving credentials and other formalized certificates of completion, are passing Microsoft Office User Specialist (MOUS) certification, have received some job promotions and wage increases, and have an increase in self confidence and self esteem. Perhaps most significant, is that overwhelmingly, the participants report that they would not have been able to take the classes if they were not offered online.

*Flexibility in time and space.* The vast majority of the women report that the greatest advantage of the pilot program is the flexibility that online learning offers them. They are able to work on their courses around their and their children's schedules. Emphatically, all women report that they could not complete these courses if they were not online. Yet, women find that flexibility is a double-edged sword and, in fact, there needs to be some structure in the program to ensure that they remain on target. The women suggested that they could accomplish this structure in the form of support groups (face to face), online reporting and interactions, checking into the One-Stop Center weekly, and completing a minimum number of hours a week.

While women need flexibility in time to complete their courses, they also need flexibility in space. Laptop computers are most effective in allowing women to have some flexibility in space. Many of the women do not have desk or office space in the

home to store a desktop (especially since the computers need to be placed near electrical outlets and phone jacks), and the laptop allows them to complete their work, and then put the laptop away. In addition, with a laptop the participants can complete their coursework virtually wherever they are located and have an Internet connection.

Coupling this with allowing the women to download courses to their hard drive (or, if possible, use a wireless connection)<sup>7</sup>, would allow women to work on courses regardless of having an Internet connection at the time.

***Isolation.*** Several of the women report that isolation from other students is a significant drawback of the program. One woman reported that she disliked:

*Not being able to have someone who understands the program right there next to you.*

Another woman also reported that she:

*Missed being able to have one on one or group discussions.*

Similarly a woman found that she disliked that there was:

*No one to talk to right after you work on a session or someone who you can relate to about what you are going through.*

In addition to being isolated from other students, women also reported that isolation from teachers and instructors was also a drawback of the program. As one woman reports:

*It's hard to get help right away, and it is frustrating.*

One way that two of the WIBs attempted to address the issue of isolation was to provide monthly face to face support groups for the participants. Women in both of these WIB areas felt that these groups were essential to their success in the program. One woman reported that the support groups gave her a

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<sup>7</sup> New Jersey did look into the possibility of wireless connections, but it proved to be cost-prohibitive.

*Feeling that there is someone looking out for you.*

The women felt that they were not alone in cyberspace, but instead part of a community of learners. A woman reports,

*When I first got started I felt dumb, but the support group develops confidence.*

In addition to helping increase women's confidence, the support groups also provided motivation for the women, by facilitating a healthy competition between the women in the program. The women would learn who among them was completing the most courses and try to "beat" her. A woman told us that

*It helps to have competition, to see how others are going, feeling like 'hey I have to catch up.'*

Furthermore, the women would also use the support groups to help each other stay with the program by providing assistance and helpful information on the program; sharing ideas and solutions to any problems they encountered; and providing verbal encouragement to each other.

The women felt that the support groups were most effective when they were a blend of social activities and information sessions. They suggested that at support groups staff should share information about job skills (such as resume writing, and job searching), along with strategies for succeeding in the online program (such as time management). They also felt it would be helpful to have technical and curriculum support individuals at the group meetings, so that they could direct questions to them. Some women also felt it would be helpful to have pop quizzes at the support group sessions, so that they could be sure they understood what they were learning. In addition, the women in one WIB area reported that they enjoyed the support groups because they had a "theme" associated with them, such as the Thanksgiving recipe exchange. At this

support group the women used their newly learned word processing skills to distribute their favorite holiday recipe to fellow participants. This more social activity was able to not only increase the women's confidence in their mastery of course content, but also by sharing their work with other participants, helped them feel part of a group.

The support groups provided the women the opportunities to meet with each other regularly and created a community that helped buffer some of the isolation the women reported they felt at times. The women were clear that while online chat rooms and bulletin boards help to connect participants, the support groups were most effective because they were in person and not online. This finding is similar to much research on online learning that suggests that a blended model of learning (part online and part face to face) helps to increase student satisfaction and retention. In implementing a more blended model for the working poor population we learned that it is important to organize support groups as a flexible option, so that rigid attendance does not become an obstacle for the participants. The support groups must be arranged around the participant's schedules, which often are outside of traditional business hours. In one county the support groups were held primarily on Sunday mornings, and in the other county the groups were held on weeknights.

The need for support groups was clearly voiced by the women who did not have them as part of their program. These women felt that a face to face monthly meeting would be very helpful for them, especially at the beginning of the program. They suggested that within the monthly meeting was a directed workshop (especially on job related skills). They also would like online chats or bulletin boards, and reports on the other women in the program (such as their progress and contact information), so that they

would not feel as alone. They believed that this would keep them motivated and help them share information. Interestingly, some of the women in one WIB area, who lived near each other, organized impromptu support groups in their homes to help alleviate some of the isolation.

*Childcare and Family Literacy.* While online learning helps alleviate some of the pressures of combining childcare demands and education, it is not a substitution for childcare. Women still “squeeze in” their coursework when their children are sleeping, in school or out of the house. Clearly having the computer in the home makes it easier for women to find time for their education and training, but it does not entirely solve childcare needs. Further, the childcare effects on online learning differ depending on the age of children. Our participants report that the greatest challenges in integrating home and education demands are for older children rather than infant children. Whereas mothers of infants and young toddlers typically report that they take their online classes when their children are asleep, mothers of older children tend to find time only when their children are out of the house and do not need their intense supervision. Some of the mothers of older children spent a great deal of time attending to the extracurricular activities of their children, thereby decreasing the available time to take courses. Further, mothers of older children also had to set up boundaries with their children on computer usage.

There have been many positive unintended consequences of the parent’s online learning on their children as they become a role model to their children, demonstrating the importance of education in order to better their lives. A woman reports,

*My children are excited about the courses, and are glad that I am going back to school.*

Some of the participants have set up “family study time”. One woman told us that she and her daughter share study space. They have an “L” shaped desk, and the mom sits at one end, and the daughter sits at the other end, and simultaneously complete their schoolwork. Further, some of the participants bring their older children into the learning process by turning to their children to help them troubleshoot the computer and help them when they have content questions. In doing so it piques the interest of the child, as one woman reports,

*My son watches and reads with me...He wants to know what it is and why I am doing it.*

In addition to role modeling and increased emphasis on education, this program brings a computer and the Internet into the homes of children who otherwise may not have access. In doing so, not only does the family’s technological literacy increase, the children have opportunities that previously were unavailable. A woman reports that her teenage son, who recently dropped out of high school, is using the computer to obtain his GED. Other women report that their younger children are able to use the computer to complete their homework, gain facility with the Internet, and use email.

***Self Confidence.*** A significant intangible result of this program is that the participants report that their self confidence has increased as a result of taking online courses. The women talk about the program at job interviews, and want to take more classes. A woman stated,

*It has given me the confidence to be able to apply for a job knowing I have the skills they require.*

Another reports,

*If I could pass through this program, I can continue to learn and not limit myself.*

Learning how to troubleshoot the computer appears to be one area where women experience many self confidence gains. A woman found that,

*When you understand how it works and you get familiar with it, it is wonderful!*

In addition, other people are recognizing the increased skills the women have learned in the program. A woman told us that,

*My confidence increased at work because I know what I am doing. It's a good feeling when people ask you and you hear them telling people, 'you're the expert'.*

Another woman reiterates this point.

*I feel more confident at work, especially when they request my help, and I'm able to help them.*

However self confidence is not only experienced at work. A woman tells us that

*I can say back in January I didn't have much knowledge in computers as I have now, which makes me feel comfortable doing my work, and that extends to my personal life.*

**Technical Problems.** Certainly we anticipated that technical problems would be a barrier that all participants would face. While participants in all of the online learning programs experienced technical difficulties, by addressing them differently in each WIB area we have learned sets of strategies to help minimize them. Most significantly centralizing technical support at the One-Stop Center, by having an Information Technology expert onsite, appears to help minimize problems associated with seeking out and providing technical help. This helps to decrease the participants' discomfort with accessing technical help, personalizes the experience for the women, and decreases the time between accessing and receiving help. This method seems most effective when used in conjunction with laptop computers. The participants were able to bring their laptop into the One-Stop Center if the problem they were experiencing could not be fixed via the

phone or email. While it may be costly for each One-Stop Center to employ on-site tech support, it may be feasible to centralize help geographically, so that a technical support person can be responsible for 3-4 neighboring One-Stops (depending on the numbers of participants enrolled in each county).

In addition to accessing technical support, the speed of the Internet connection is also very important to effectively complete coursework. The majority of the participants are accessing the Internet via a dial-up connection. This type of connection, which is often slow, may not load Web pages correctly (especially those with many graphics) and easily disconnects. Technical support persons in various WIBs report that the ideal connection may be wireless, with a laptop computer. In addition to increased speed, wireless connections allow women to connect to their courses at anytime and virtually any place. Further, using wireless connections avoids the interruption of Internet service that can arise when participants home phones or cable systems are disconnected. Currently wireless connection prices are very high and not realistic within existing state budgets. However some WIB areas did fund DSL and cable modems, which were preferable to dial-up connection. Another way of addressing issues associated with being disconnected from the Internet while completing coursework, and the slow Internet connections, is the possibility of having participants download courses onto their hard drives, complete the courses off-line, and then upload the courses to the Internet.

Finally, most of the women report that there is a knowledge gap between themselves and the technical support persons. This is especially true in the four WIBs that outsourced their technical help. In addition to online and/or offline workshops that could introduce women to the possible technical problems and language, it may be

helpful to have women work more directly with One-Stop staff on technical issues, with the case manager helping to run interference with technical help desks, especially at the beginning of the program. This issue is very significant as women report that they feel intimidated to call technical help, and may decide not to reach out for help, thereby slowing down their progress.

### **The Cost Effectiveness of Online Learning**

The New Jersey project demonstrates that online learning is a cost effective mechanism to train large groups of non-college educated workers. Table 2 shows the availability and costs of similar classroom courses to the ones the women are taking online in the five WIB areas where the New Jersey project is piloted. MOUS Certification, a popular option in the online learning project, typically costs \$3,000 to \$4,000 in tuition at a technical school or community college, when it is available. While the costs of the online program differed depending on county, piecing together the most economical arrangement from the areas is: \$2,000 for laptop computer and printer; \$250 for Mindleaders<sup>8</sup> educational program for one year which includes MOUS certification among its many offerings; Internet access by a local internet provider at \$240 (\$20 a month for 12 months). So, for approximately \$2,490 a person, a One-Stop Center can implement an online learning program.

However, to best understand the cost effectiveness of online learning one must take into account both the costs related to courses and computers, and also the individual costs associated with taking onsite courses. First, in order to take on-site classes one must have reliable transportation to and from the classroom. This either requires the use

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<sup>8</sup> One of the vendors that provides the courses for two WIB areas in New Jersey.

of an automobile or public transportation. In addition to the economic costs associated with transportation, it is also important to note that the availability of public transportation varies depending on location. For instance, more rural areas typically tend not to have extensive public transportation systems, thereby limiting one's options for getting to class. Further, on-site classes are fixed in hours and cannot accommodate work schedules and family demands. In addition to transportation barriers and schedule conflicts, both the costs and availability of childcare often prevent individuals with children (especially single parents) from obtaining skills training in traditional classroom settings.

In addition to individual costs that are minimized or eradicated with online learning, it is also important to note that online classes help democratize educational opportunities across class, geographic location, and other social variables that typically limit education and skills training. First, as evident from the cost table, availability of classroom courses varies depending on geographic location. More rural counties (such as Warren and Cumberland) have significantly fewer choices for classes, than non-rural counties. Online learning eliminates these inequities, as courses are available regardless of location. Further, the table illustrates that some Microsoft courses are not bundled, so that costs are higher than via online providers. That is, in Monmouth County, for example, one can take a Microsoft Excel class for \$600, and would have to take another course for Word, PowerPoint, etc. This is true of all the counties studied. Online, these courses are bundled so that for \$250 in Mindleaders, a participant can take courses for all the modules of Microsoft. Following that point, onsite classes are also fixed in hour

requirements. Online courses allow for unlimited hours in a course, with limits only set by participants.

**Table 2: Cost and Hours of Current Classroom Programs**

**Bergen County**

<b>Program</b>	<b>Cost</b>	<b>Hours</b>
Certificate, Computer Technology/Help Desk	\$3,842	720
Setting Up A Business on the Internet	\$40	4
Creating Your Own Web Page	\$140	6
Microsoft Office Professional Course	\$3,525	300
Office Technology	\$4,125	400
Web Page Design Basics	\$4,145	290
Computer Technology for Information Processing	\$4,310	340
Microsoft Office Specialist II	\$4,455	315
Automated Office Systems Processor	\$7,570	636
MOUS Certification (Core)	\$1,875	72
Triple Certification (A+, MCP, CCNA)	\$4,074	288
Help Desk Specialist	\$4,000	334
Average Cost	\$3,508	

**Cumberland County**

<b>Program</b>	<b>Cost</b>	<b>Hours</b>
Computer Information Systems and Applications	\$2,460	1080
Microsoft Excel 2000	\$259	36
Computer Operations/Help Desk Analyst	\$9,264	720
Average Cost	\$3,994	

**Middlesex County**

<b>Program</b>	<b>Cost</b>	<b>Hours</b>
Microsoft Windows 2000	\$3,990	40
Computer and Data Entry Support	\$5,065	216
Microsoft User MOUS Applications	\$4,000	400
Desktop Application Specialist	\$4,000	320
Computer Applications Expert	\$4,580	360
Computer Technician	\$3,995	450
Software Support Analyst	\$3,995	450
MS Office Package	\$600	60
Support Management Program	\$1,535	90
Junior Management Program	\$1,535	60
Business Technologies	\$5,850	1000
Microsoft Office Package	\$1,300	180
Beginner's Package	\$1,500	180
Help Desk Support (MOUS/A+)	\$5,800	660
Microsoft Word	\$75	20
Microsoft PowerPoint	\$75	20

	<b>Cost</b>	<b>Hours</b>
Microsoft Windows	\$75	20
Microsoft Excel	\$20	95
Microsoft Office 2000 Workshop	\$4,000	240
Microsoft Office 2000 for Beginner	\$4,000	240
Microsoft Office Professional	\$2,200	150
 Average Cost	 \$2,771	

### **Monmouth County**

<b>Program</b>	<b>Cost</b>	<b>Hours</b>
Business Applications Computer Specialist	\$3,500	260
Business Applications Computer Specialist and Accounting	\$4,000	300
Microsoft Office Specialist Certification Prep	\$3,250	399
Office Workplace Applications	\$2,000	180
Customer Service	\$4,000	180
Credits and Collections	\$4,000	180
General Studies- Software Applications	\$4,000	250
PC Support Specialist with Networking	\$8,992	720
Microsoft Word and Excel	\$252	24
Advanced Access	\$300	20
Advanced Excel	\$300	20
Microsoft Access	\$600	60
Microsoft Excel	\$600	60
Computerized Business Application Specialist	\$4,000	400
Computerized Applications Specialist	\$4,050	300
Business Technology Specialist Program	\$6,925	720
Office Automation	\$3,995	250
Help Desk	\$3,995	275
 Average Cost	 \$3,264	

### **Morris County**

<b>Program</b>	<b>Cost</b>	<b>Hours</b>
Microsoft Certified Systems Engineer	\$10,750	192
Microsoft Office Expert-Flex Hours	\$1,530	80
Computer Technical Support	\$7,250	400
Microsoft Desktop Application - MOUS Exp	\$3,000	80
MCSE: 70:210 Network and Operating System Expert	\$3,000	80
Computer Application Expert Certificate	\$4,000	300
Career Certificate Microcomputer Software Application	\$5,253	990
AAS, Microcomputer Technical Support Option	\$7,155	990
Microsoft Word 7.0	\$144	10
PowerPoint '97	\$144	10
Introduction to Access	\$144	10
Excel 7.0	\$144	10
Keyboarding for the PC	\$143	20
Introduction to the Home Computer	\$160	16
Introduction to Microsoft Office '97	\$259	20
Introduction to the Personal Computer	\$65	4

	<b>Cost</b>	<b>Hours</b>
Beginner Microsoft Excel	\$500	30
Intermediate Microsoft Excel	\$500	30
Intermediate Microsoft Word	\$500	30
MOUS/XP/2000	\$4,000	300
Microsoft Certified Systems Administration	\$4,000	320
Microsoft Office Training	\$1,840	32476
	\$2,476	

### **Sussex County**

<b>Program</b>	<b>Cost</b>	<b>Hours</b>
MS Outlook	\$99	6
MS PowerPoint for Beginners	\$99	5
MS Access for Beginners	\$99	9
MS Word For Beginners	\$99	6
MS Excel for Beginners	\$99	6
MS Access Intermediate	\$99	9
MS Access Advanced	\$99	9
MS Excel Advanced	\$99	9
MS PowerPoint Advanced	\$99	6
MS Word Intermediate	\$99	6
MS Word Advanced	\$99	6
MS Excel Intermediate	\$99	6
Information Technology Systems	\$1,160	540
Average Cost	\$181	

### **Warren County**

<b>Program</b>	<b>Cost</b>	<b>Hours</b>
Personal Computer Applications Program	\$2,035	200
Skills Upgrade Program	\$4,000	330
Data Processing	\$5,000	510
Computer Software Specialist	\$6,000	600
Average Cost	\$4,259	

### **Possible Funding Streams**

Table 3 illustrates the current Federal funding streams available to fund such programs. We have used New Jersey's funding as an illustration of this chart. The largest stream of funding comes from the Workforce Investment Act (WIA) and the Adult Education monies from the Department of Education. It is also important to note that this chart only includes federal funding allocated to the states. State One-Stop

Centers can access additional funding via Pell Grants for which students can be encouraged to apply. In addition some states have discretionary training funds from State Department of Labor budgets that One-Stop Centers can use. If online learning is seen as an effective means of delivering training to the working poor, states will be able to access funds for such training.

<b>Funding Stream</b>	<b>NJ Allocation</b>	<b>Percent</b>
WIA Title 1 Adult	\$14,784,356	18.6
WIA Title 1 Youth	\$16,788,817	21.1
WIA Title 1 Dislocated Worker	\$15,350,055	19.3
DOL TANF	\$10,880,001	13.7
DOL Food Stamp	\$4,246,426	5.3
DOL General Assistance	\$873,577	1.1
DOE Adult Education	\$12,977,047	16.3
DOE English Language Civics	\$3,780,245	4.7
<b>Total</b>	<b>\$79,680,523</b>	<b>100.0</b>

**Note:** WIA refers to Workforce Investment Act funding; DOL refers to United States Department of Labor; DOE refers to United States Department of Education; TANF refers to Temporary Assistance to Needy Families; Food Stamp refers to training funds in this program.

Exact amounts of WIA and TANF monies are dependent on reauthorization.

All funding streams differ by state, and these numbers for New Jersey are for illustrative purposes only.

### **Lessons Learned Thus Far**

At this point in our pilot program we believe that there are lessons that we have learned through this process that we feel confidently are critical to the success of an online learning program for the working poor population that is implemented at the local level. Perhaps, most significantly, it is important to allot enough time to implement an online learning program, including locating and training best staff for the program, choosing and becoming familiar with educational vendors, working with computer and

Internet access vendors to secure equipment, and recruiting appropriate participants for the online program. The following “lessons” learned during the New Jersey pilot project can aid in the development and implementation of the online program.

1. *Develop an accurate and complete understanding of online learning at the State and local WIB and One-Stop levels.* It is necessary to be sure that all key players share the same understanding of the online learning program. If not, it is possible that there could be a disconnect between the conceptualization and eventual operationalization of the project. The use of online learning can be a radical shift in delivery of skills training for many employment service providers. A suggestion that may help is to clearly set out the expectations of the program, and to provide resources for local level employees to draw upon during the development and implementation of the project. To alleviate any potential confusion it is ideal to have a state level administrator coordinate and administer these efforts. The person in this position should be knowledgeable on issues of online learning so that he/she can troubleshoot problems, share information on providers, help in recruitment, evaluate budgets and help secure computers and Internet access. Another suggestion that may ease the implementation is to provide local project directors with a short online learning class, so they are better informed as they recruit and oversee the program locally. Many of the local project directors in the New Jersey program had no direct knowledge of online learning and its demands on the student and One-Stop Center. By providing a “demonstration” course, project directors can better prepare for the program.
2. *Provide adequate staffing of the project at the local level.* An online learning program can be labor intensive. Each of the local project directors found that the initial set up and continual follow-up took a great number of work hours. The ideal staffing model appears to be: a project director, who interacts with and supports the participants, organizes support groups, provides job coaching, and serves as the women’s general point person at the One-Stop Center, and technical support and education support persons at the One-Stop, so that the women can contact local individuals for technical and course content assistance.
3. *Ensure a careful consideration of program options, including educational vendors and Internet service providers.* In selecting potential educational vendors, it is important to look comprehensively at all possible outcomes. In the New Jersey pilot there were three types of vendors chosen---one that was a turn key operation---providing computers, courses, technical support and an orientation; a second vendor provided only the educational programs, and the One-Stop Centers provided technical support and an orientation; and a third vendor was a local vocational school that provided educational and technical support. While all three types of vendors had advantages and drawbacks we were able to highlight several trends that should be taken into consideration when selecting a vendor.

- a. The vendor should be familiar with working with a working poor population. This is especially significant when providing support for the educational content or technical help.
  - b. Completely outsourcing the program makes it difficult to maintain control and quality assurances. In an entirely turn key operation, since the local One-Stop does not distribute equipment or directly address technical and educational problems, the participants in the New Jersey program found themselves waiting for their problems to be addressed, as there are many layers to navigate. In our pilot program there were significant delays of 1 to 3 months between the orientation the participants attended and the receipt of their equipment<sup>9</sup>. Further, once the women received the equipment there were hardware problems (such as not functioning mouse and keyboards, and damaged monitors). These problems often took a long time to remedy because of the many channels the women had to go through, as the educational vendor had subcontracted a local provider for the equipment. The women reported that the delays were not only frustrating, but made it difficult to maintain consistency. In fact some of the women had to attend a second orientation to “refresh” what they had learned. In addition, when the participants have to follow up directly with vendors they needed to possess a technical knowledge and vocabulary, and levels of self confidence to be pro-active regarding their rights. Further, the many channels the women had to navigate served to minimize the contact the participants had with the One-Stop Center, making it difficult for participants to utilize the other employment services that they provide.
  - c. Ensure that the educational vendor provides courses that are related to demand jobs in the local area, and lead to some forms of certification or credential. Furthermore, it is essential to ensure that the educational content is directly correlated with the MOUS certification or other nationally recognized professional examinations.
  - d. Internet speed is critical in order to make the online learning environment more productive. If possible, high speed access is ideal.
4. *Provide a flexible “blended model” of learning.* The participants reported that they felt their online program was most effective when coupled with face to face meetings. These meetings helped to keep women motivated, on task, and created a learning community. In addition, it helped project directors more easily assess and address any problems that the local participants were experiencing. Furthermore, it enabled the project directors to maintain contact with the participants. This is especially important with this population, as they may change residence or other contact information frequently. This finding of the advantages of a blended model is supported in the research on online learning at the college and graduate level. However it is important to note that the blended model that is most appropriate for this population is one that is flexible- often

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<sup>9</sup> The vendor reported that these delays were a result of a new local subcontractor that provided the equipment.

scheduling meetings at “off hours” of nights and weekends, and, if possible, provides childcare.

5. *Develop a comprehensive assessment of potential applicants for the project.* Online learning is not for everyone---it requires time management, self-discipline and motivation. In addition, it is helpful for participants to have some working knowledge of computer and typing. As such, a comprehensive assessment of potential candidates can weed out applicants who may be best served by other employment and training services. We found that an in-person interview with the project director can help to assess the candidates’ motivation and ability to succeed in online learning. At this interview, the project director can ascertain the time the participant has to complete online learning (by going through a participant’s average day); the skills and employment goals of the participant; their comfort with online learning (or the idea of online learning); and highlight any potential challenges that the participant may face and ways to address them. Further, since online learning is heavily reading based, we found that the participant should possess a minimum of an eighth grade reading level. Finally, a hands-on computer assessment can be used to better understand the participant’s computer skills. Having a basic working knowledge of computer skills (turning on a computer, saving a file, printing), along with a basic understanding of the Internet (hyperlinks, navigating Web pages), while not essential, will help to make the transition to online learning smoother.
6. *Ensure that equipment is flexible.* Laptop computers have provided the participants with more flexibility in terms of when and where they can complete their coursework. As noted in this report, participants are able to take their laptops to work, family members’ homes, and throughout their own homes (as many of the participants did not have a desk or study room to store the computer and/or complete their work).<sup>10</sup> Further, speed of Internet connection is also important in an online learning program. Providing access to high-speed access helps to improve the online experience, and decrease participants’ frustrations with online learning.
7. *Ensure that the project is centralized at the One-Stop Center.* As noted earlier, providing as much of the support services and program resources at the One-Stop Center helps to maintain control and quality, along with facilitating the access of those resources and support services by participants. In addition, it provides participants with knowledge and access to the array of employment and training resources available at the One-Stop Center.
8. *Develop an awareness of different participants’ learning styles.* Our project demonstrated that participants possess different learning styles when accessing online learning. Two of our WIB areas have developed hard copy complementary study guides to the online content. Participants were able to bring these books

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<sup>10</sup> This was also a disadvantage of a complete turn key operation, as many times the local One-Stop does not make the determination as to the type of computer that will be used.

with them to study when they were not online. In addition, the books reinforced concepts and ideas that were taught in the online environment, and provided further assistance in the learning process.

9. *Provide a comprehensive monitoring of the program.* Our project demonstrated that the role of monitoring by an outside body was very useful in keeping the project on track, sharing information about best practices among One-Stops, highlighting and addressing obstacles as they arise, and maintaining continuity in the program.

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