



National Telecommunications and Information Administration

Broadband Technology Opportunities Program
Evaluation Study

Order Number D10PD18645



Case Study Report Round 2

Foundation for California Community Colleges

Sustainable Broadband Adoption

Submitted September 12, 2013

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Federal TIN: 20-1204680
DUNS: 15-108-3305
GSA Schedule #: GS-10F-0062R

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Executive Summary

“Most of the feedback we’ve gotten [from community college students] is that it’s an honor to be able to teach these skills. They didn’t know that the need was so great within their family...or how afraid, how embarrassed they were about not knowing [computer] skills. The trust relationship between this family member or this community member and the trainer is really important. It’s not a stranger. It’s a trusted member that they’re able to learn these skills from and not feel embarrassed about it.” – Program Manager, California Connects

The Foundation for California Community Colleges (FCCC), established in 1998, is a nonprofit organization providing technology-related access and training in California. The Foundation’s mission is to support and enhance the California community college system by developing programs and services that promote excellence in education, provide funding for colleges and students, and offer learning opportunities for students throughout the state. It also supports the system of California community colleges through special initiatives, statewide awards, and direct donations to the colleges and the Network of California Community College Foundations.

On August 1, 2010, the National Telecommunications and Information Administration (NTIA) awarded FCCC a Broadband Technology Opportunities Program (BTOP) grant for \$10,944,843 to implement the California Connects Sustainable Broadband Adoption (SBA) grant. The goal of California Connects is to induce broadband adoption through two sustainable broadband adoption programs that emphasize acquiring digital literacy skills through the community college system. Community colleges serve as important community anchor institutions that can offer training programs to support sustainable broadband adoption through for-credit courses or noncredit community-interest technology courses. California Connects focuses on demonstrating the benefits of computer ownership, Internet use, and information technology training with collaboration and support from higher education institutions and public libraries. The project provides outreach, training, and learning support to increase digital literacy skills and broadband adoption through programs that target low-income residents. Two partners deliver grant services: the Mathematics, Engineering, Science Achievement (MESA) program and the Great Valley Center (GVC). MESA serves community college students in a Science, Technology, Engineering, and Math (STEM) education program, as well as the residents in their communities. GVC serves community members from the public living in California’s Central Valley through noncredit courses and workshops. FCCC proposed the following, with the results shown:¹

- Provide and improve broadband access and awareness through outreach and training programs. Each MESA program participant was required to deliver at least twelve hours of digital literacy training to at least seven community members after participating in train-the-trainer events. GVC trainers offered digital literacy training in public computer centers (PCC) to residents of the Central Valley. As of March 31, 2013, 14,172 individuals had received basic digital literacy instruction through both California Connects training programs.² FCCC also reported that 9,151 new households in the service area subscribed to broadband as of March 31, 2013.³
- Distribute laptop computers to MESA students. California Connects distributed 5,799 laptops with up to 6 months of free broadband service to MESA programs at partner community colleges.⁴
- Provide Microsoft software training resources and certification opportunities for MESA students receiving laptops. All laptop recipients had access to two Microsoft training resources. As of March 31, 2013, MESA students had passed 1,119 Microsoft certification exams.⁵
- Create an open-source online digital literacy web portal to provide free training for those with broadband access. FCCC created Living with Technology, a series of free web-based digital

literacy training modules available in Spanish and English. Usability tests, conducted by American River College, collected user feedback. Libraries in the service area promoted Living with Technology among their patrons.

California Connects serves a broad cross-section of the state. The MESA program is in place at thirty-five California community colleges. All MESA participants are first-generation college students who have demonstrated financial need. MESA students receive laptops and training with the understanding that those students will deliver at least twelve hours of training to at least seven community members. The impacts associated with the MESA program have the potential to reach well outside of the defined service area as students move within and out of the state. GVC serves eighteen counties in California's Central Valley. The area population traditionally has lower per capita income and higher rates of poverty and unemployment than state averages.⁶ The area served by GVC also has limited access to broadband services in some locations because of mountainous terrain and relatively low population density in many areas that make laying cable there unprofitable for Internet Service Providers (ISP). The programs' combined service areas include thirty-seven counties, overlapping in four. Residents' of the California Connects service area are twice as likely to identify as Hispanic as the rest of the country.⁷

The case study presented here is one of fifteen case studies performed by ASR Analytics, LLC (ASR) on a sample of eight PCC and seven SBA grants. It is part of a larger mixed-methods evaluation of the social and economic impacts of the BTOP program.

The purpose of this case study is to:⁸

- Identify how the grantee maximized the impact of the BTOP investment.
- Identify successful techniques, tools, materials, and strategies used to implement the project.
- Identify any best practices, and gather evidence from third parties, such as consumers and anchor institutions, as to the impact of the project in the community.

This report further investigates the initial impacts uncovered during the first round of visits and identifies additional impacts that occurred in the time between the site visits. The results presented in this report reflect the evaluation study team's observations at the time of the second site visit. It will serve as a basis for *Interim Report 2*, which will analyze data from fifteen case studies.

ASR collected the information presented here during two field visits to evaluate the social and economic impact of California Connects. The evaluation study team originally met with representatives of the California Connects project over a two-day period in October 2011, visiting administrative offices, a community college MESA Center, GVC offices, and a GVC training site. ASR conducted a follow-up site visit with the grantee, program staff, and program participants from May 13-16, 2013. The second site visit included three community colleges not previously visited: Bakersfield Community College (BCC), East Los Angeles College (ELAC), and Southwestern Community College (SWCC). ASR also visited GVC training sites in Ceres and Delano.

In total, the evaluation study team performed a total of thirteen case study site visit interviews and focus groups. ASR transcribed the discussions and used this information, and other information and reports provided by the grantee, to supplement Quarterly Performance Progress Reports (PPR), Annual Performance Progress Reports (APR), and other publicly available information.

This case study is primarily qualitative. Most impacts of the grant stem from training programs, specifically as trainees leveraged their acquired digital literacy skills to achieve educational and employment successes. FCCC collected participants' demographic information and technology experience through intake paperwork and measured their participation throughout the grant period. However, the grantee was not required to pursue outcome tracking among trainees. In addition, because community colleges serve as project partners, Family Educational Rights and Privacy Act (FERPA) restrictions limit the opportunity for outcome tracking among those students.

The evaluation study team noted the following major impacts of the California Connects grant:

- Grant administrators believe that the California Connects program helped to diminish the digital divide in the service area. The grant application set a goal of 9,168 new subscribers.⁹ FCCC reported that 9,151 individuals became broadband subscribers because of California Connects programs as of March 31, 2013.¹⁰ This value reflects MESA program participants and survey respondents at training sessions and other program events who indicated that they had initiated a broadband subscription during the grant period. It is likely that the program created additional subscribers that were not reported through surveys and that the program met or exceeded its goal.
- The project helped a generation of students and their families and communities realize the benefits of computer ownership. Laptops distributed through MESA gave students greater flexibility in their studies, and they devoted more time to their schoolwork as a result. MESA directors reported instances of students using their laptops to create application materials to acquire scholarships, internships, and jobs.
- Trainees frequently contacted program management with employment success stories. GVC and MESA trainers interviewed echoed these successes. They also reported that many of their trainees enrolled in associate degree programs, bachelor's degree programs, or English as a second language (ESL) courses after completing training.
- MESA students participating in the California Connects program must intend to transfer to a four-year college or university. The MESA directors interviewed reported numerous accounts of students successfully transferring, mostly within the state.
- Programming at community colleges helped boost student retention rates. ELAC, for example, measured a 12 percent dropout rate among its MESA students, compared to an 80 percent dropout rate among the entire student population.¹¹

California Connects was fundamental in achieving these impacts. The training programs would not exist without the BTOP grant, leaving Central Valley residents and MESA students' community members lacking free computer training opportunities. MESA students would continue to depend on congested library computer workstations or share home computers with their family members. The program enabled its participants to acquire technology skills, which they translated into educational and workforce development impacts.

Section 1. Introduction

The Foundation for California Community Colleges (FCCC), established in 1998, is a nonprofit organization providing technology-related access and training in California. The Foundation's mission is to support and enhance the California community college system by developing programs and services that promote excellence in education, provide funding for colleges and students, and offer learning opportunities for students throughout the state.

On August 1, 2010, the National Telecommunications and Information Administration (NTIA) awarded FCCC a Broadband Technology Opportunities Program (BTOP) grant for \$10,944,843 to implement the California Connects Sustainable Broadband Adoption (SBA) grant. The goal of California Connects is to induce broadband adoption by promoting the acquisition of digital literacy skills in the Central Valley and communities surrounding community colleges. Community colleges play an important role nationally in teaching the public computer literacy skills that enable sustainable broadband adoption throughout a person's life. FCCC collaborates with community colleges to offer digital literacy training ranging from for-credit courses to noncredit community-interest continuing education technology courses.

1.1 What the Interviewees Told Us

Figure 1 displays words interviewees used frequently. These interviewees included grant administrators, representatives from the Mathematics, Engineering, Science Achievement (MESA) and Great Valley Center (GVC) programs, and MESA students. The word cloud displays the 100 words interviewees used most frequently. The purpose of the word cloud is to provide a succinct visual summary of the conversations that occurred. Statements made by ASR personnel during the interviews and focus groups were excluded from the analysis, as were common words, such as prepositions, articles, and conjunctions, which were identified using a standard "stop list."

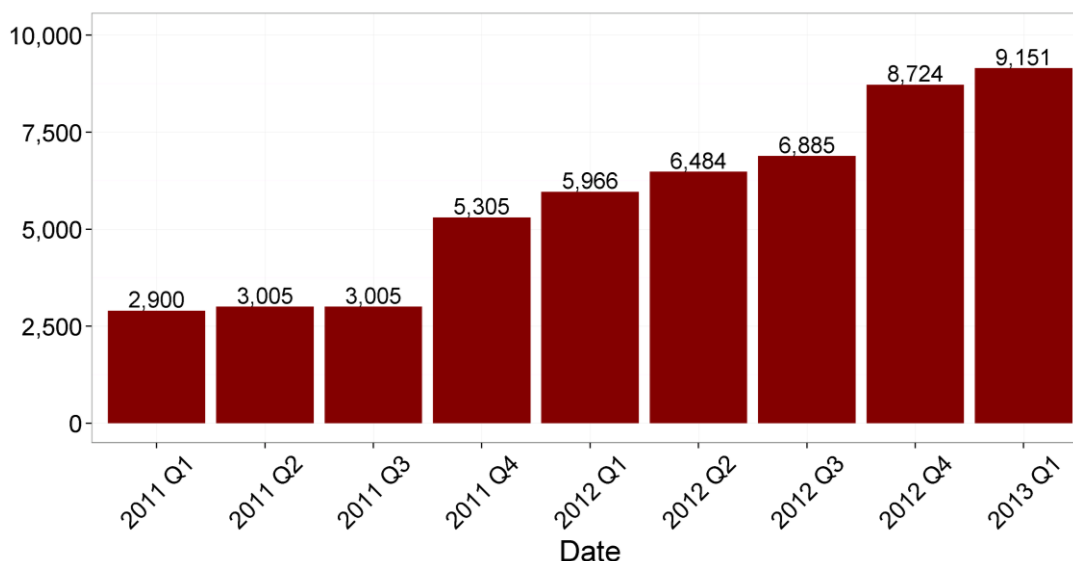
As shown in the word cloud, the respondents perceived the grant as highly focused on getting users ("people" and "students") online ("computer" and "Internet"). The two primary programs supported by the grant focus, to some degree, on the development of digital literacy skills. Words such as "training," "trainers," "class," "teach," "learn," "basic," and "helped" reference the digital literacy training components of the programs. The cloud also shows the program has a "community" focus. Interviewees indicated that one goal of the training programs is to empower trainees to teach others by sharing what they learn. Discussions also focused on what program participants were doing with the computers, reflected in the inclusion of words such as "Internet," "e-mail," "homework," "pictures," "Microsoft," "Word," and "Excel."

Section 2. Impacts

The most significant impacts occurred in the focus areas of Education and Training and Workforce and Economic Development. Although training largely focused on basic Digital Literacy skills, program participants translated basic computer usage into educational and employment impacts.

One major impact was an increase in broadband subscriptions in the grant's service area. Figure 2 displays the cumulative number of new broadband subscribers reported by California Connects.¹² These data include individuals who have a home broadband subscription and exclude those who have other types of Internet access at home, such as dial-up or through a mobile device, or who access the Internet in a different setting. Reported subscriptions include MESA program participants and survey respondents who attended training sessions and other program events. Businesses are not included in the data. As of March 31, 2013, 9,151 individuals in the grant's service area had subscribed to broadband, nearly reaching the program's goal of 9,168 subscribers.¹³ It is possible that subscriptions induced by California Connects programs were initiated but not reported.

Figure 2. Cumulative New Household Broadband Subscribers



FCCC collected data on participants through intake surveys, including demographic characteristics and previous experience with computers and the Internet. Trainers reported training attendance to FCCC. The grantee was not required to measure program outcomes, such as changes in digital literacy skills, academic performance, or job placements. Family Educational Rights and Privacy Act (FERPA) provisions prohibit outcome tracking among community college student participants. As a result, the evaluation study team relied on interviewees' stories to assess some of the social and economic impacts of the California Connects program. Success stories include the following:

- “[One of my trainees] didn’t finish high school. He had to work two jobs to raise his kids. He said, ‘If I knew how to use a computer I could get a better job or at least more responsibilities in my job.’ He learned how to use Word, PowerPoint, and Excel. He now has only one job...and he enrolled in college.” – MESA Student, Southwestern Community College
- “I have a cousin who wanted to go back to school and he didn’t know how to register for classes because everything is online now. I helped him check out the school’s website. Now he’s a full-time student and he’s figuring out what he wants to do.” – MESA Student, East Los Angeles College

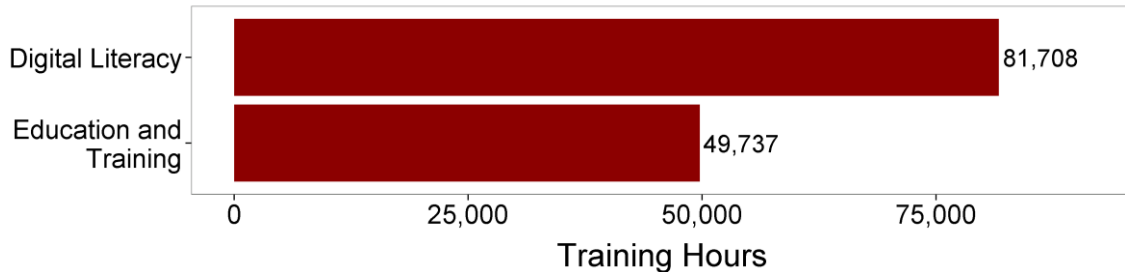
- “My dad is a general contractor. [I taught] him how to use the Internet and e-mail. It led to him realizing the utility of the Internet to send quotes to customers or even look for different places where they sell materials that he needs.” – MESA Student, East Los Angeles College
- “My parents own a deli. [I showed them] the little things that they could be doing on the computers themselves, instead of getting help outside or paying people to do their menus. They have their own website now, too.” – MESA Student, Skyline Community College
- “There are twenty scholarships called Student of Distinction Awards (SODA) for students who do well in academics, do community service, and contribute to the Southwestern College community. I nominated ten of our students and six of them got the SODA award. California Connects was highlighted in their recommendations.” – MESA Director, Southwestern Community College

These successes would not have transpired without California Connects. Without the grant, MESA students would continue to depend primarily on library computers at school. They would be constrained by waiting periods and time limits. Communities in the Central Valley and surrounding MESA colleges would not have the training opportunities available through California Connects.

2.1 Focus Areas

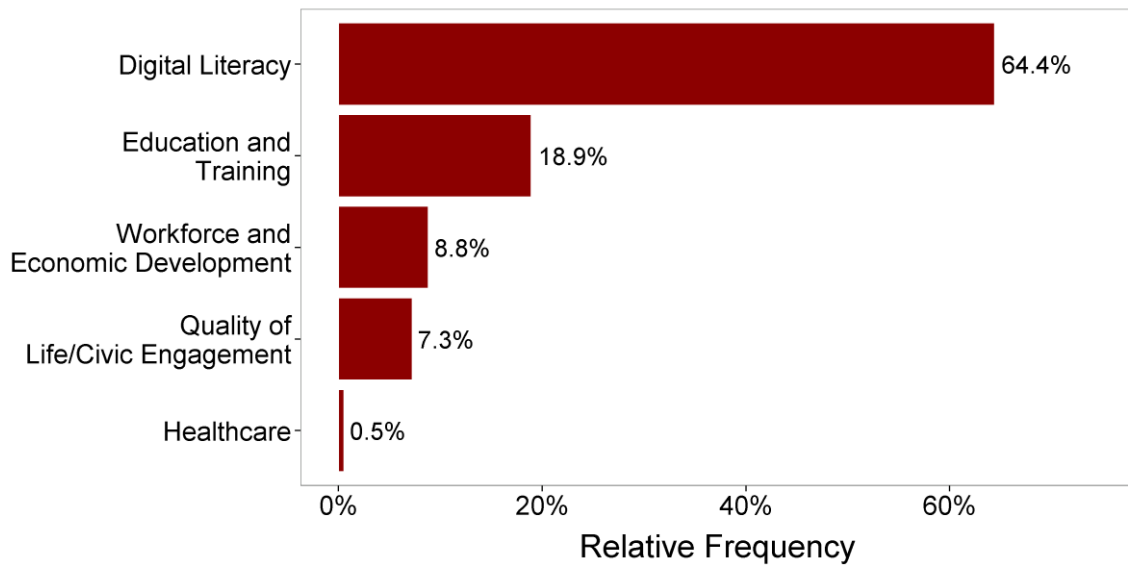
This section describes the impacts of the California Connects project in terms of five focus areas. ASR tabulated the training hours for FCCC reported in the 2012 APR using the focus area categories described in *Interim Report 1* to analyze where impacts should be found for this project.¹⁴ Nearly two-thirds of the training hours delivered by California Connects related to the Digital Literacy focus area, as shown in Figure 3. The remaining hours were devoted to Education and Training content.

Figure 3. Grantee Training Hours Categorized by Focus Area



ASR also analyzed the statements grantees made during the interviews and focus groups and categorized them based on focus area, as shown in Figure 4.

Figure 4. Focus Area Statements Made by Interviewees



The grant focused heavily on the focus area of Digital Literacy, as did discussions during interviews and focus groups. Responses referencing Education and Training, Workforce and Economic Development, and Quality of Life/Civic Engagement accounted for smaller portions of discussion, while interviewees rarely mentioned Healthcare topics.

2.2 Digital Literacy

“There’s a handful in every class that have never touched a mouse or have never even turned a computer on. When they leave the class they are very surprised with themselves.”
– Trainer, Great Valley Center

This focus area is fundamental to all the others. Digital Literacy defines a set of skills and abilities that enable an individual to interact with the digital aspects of culture, and to maintain a digital identity. In the National Broadband Plan, the Federal Communications Commission (FCC) defines digital literacy as “the skills needed to use information and communications technology to find, evaluate, create, and communicate information.”¹⁵

The following outcomes and impacts related to Digital Literacy have occurred:

- Many program components have contributed to FCCC’s mission of providing and enhancing broadband access and awareness in the service area through community colleges and their partners. Providing MESA students with laptops and free broadband service allowed a population with typically low broadband adoption rates to connect to the Internet. Training and outreach methods generated new broadband subscriptions as those reached by grant programming learned the value of broadband. Trainers stated that trainees frequently purchased personal computers after completing training.
- After training, many trainees turned to web-based tools as their primary means of maintaining social connections. According to student trainers, most of the trainees continued to use their Skype or social media accounts after training. GVC trainers reported similar impacts regarding Gmail accounts, which trainees established during training.
- Training activities have generated social change among trainers as well, many of whom continue to train beyond minimum program requirements. To become a Digital Literacy Community

Trainer, MESA students participate in “train-the-trainer” events. They completed at least thirty hours of computer experience, including time spent taking Microsoft certification courses and delivering end-user training.¹⁶

GVC and MESA training programs served different populations. Table 1 summarizes the pertinent demographic information about each training population.¹⁷

Table 1. Characteristics of GVC and MESA Trainees

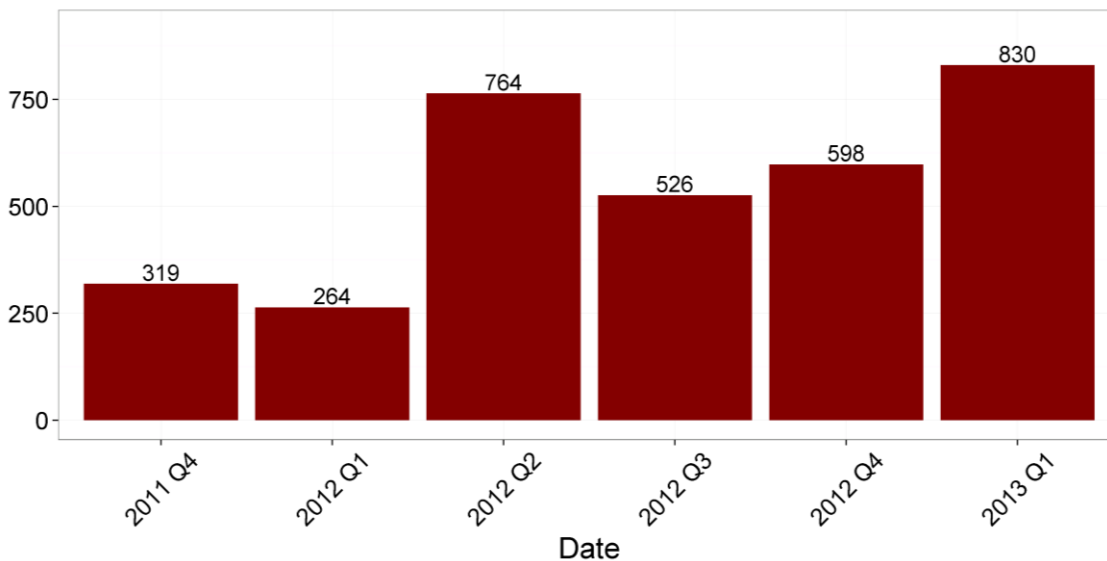
Trainee Population Characteristic	GVC	MESA
Race and Ethnicity	Eighty percent of trainees are Hispanic and 17 percent are White.	Sixty percent of trainees are Hispanic, 20 percent are White, 11 percent are Asian, and 4 percent are Black.
Language	Seventy-six percent of trainees speak Spanish as their primary language. Most GVC trainers teach primarily in Spanish.	Forty-seven percent of trainees speak Spanish as their primary language and 45 percent English. Student trainers provided instruction for the remaining 8 percent in 35 languages including Vietnamese, Punjabi, Mandarin, Arabic, and Farsi.
Gender	Seventy-three percent of trainees are women.	Gender is represented more equally among MESA trainees. Fifty-five percent of trainees are women.
Employment Status	Twenty-seven percent of trainees were employed at the time of training, mostly as low- or minimum-wage earners or migrant farm workers. Of the remaining trainees, 28 percent were unemployed, 25 percent were homemakers, and 12 percent were retired.	Forty-eight percent of trainees were employed at the time of training and 26 percent were students. Nine percent were unemployed, 7 percent were homemakers, and 7 percent were retired.
Education	Fifty percent of trainees have less than a high school education. Twenty-five percent have an elementary school education.	Educational attainment is greater among MESA trainees. Seventy-three percent were high school graduates and 37 percent of trainees have had some college experience.
Senior Citizens (65 or older)	Twelve percent of trainees are senior citizens.	Five percent of trainees are senior citizens.
Relationship to Trainer	N/A	Twenty-one percent of trainees are family members of their trainer.

GVC trainers served the residents of California’s Central Valley. The grant funded eighteen bilingual trainers, who taught primarily in Spanish. The GVC strategy included using existing public computer centers to provide training facilities or equipment for the digital literacy classes. Trainers relied on community organizations to donate computer lab space for training activities. The course began at a very rudimentary level, progressed through basic computing tasks, and concluded with the use of search engines and e-mail.

Figure 5 displays the number of individuals who completed GVC training each quarter. Training programs began in the last quarter of 2011.¹⁸ The GVC service population included many migrant

farm workers. Trainers stated that seasonal employment trends among these workers accounted for variation in training attendance. In the summer months, they traveled to where they could find work. During December and January, many migrant workers traveled to Mexico to be with family. The graph below echoes this pattern, which shows lower training attendance in the fourth quarter of 2011, first quarter of 2012, third quarter of 2012, and fourth quarter of 2012. As of March 31, 2013, 3,301 individuals had graduated from the GVC training program.

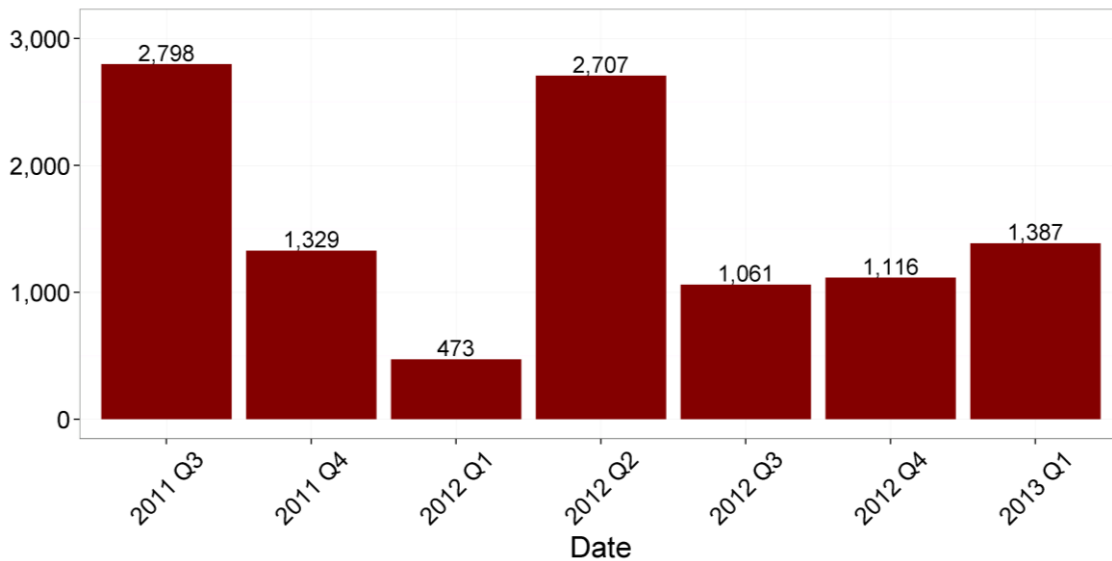
Figure 5. GVC Training Participation



MESA students in the California Connects program were required to train at least seven community members on a computer-related topic of their choosing. Training topics included basic computer use, e-mail, Skype, online banking, and Microsoft Excel. Partner colleges had the flexibility to set their own training requirements for students, provided they meet the minimum standards set by California Connects. Per program requirements, at least two trainees must be family members. Students must deliver a minimum of twelve hours combined training time. Implementation of the training component varied among schools. Most students used their program-provided laptop to conduct individual training sessions. Some colleges provided computer lab space where student trainers held their sessions simultaneously. Southwestern Community College (SWCC), for example, held weekend training sessions in its MESA computer lab. In addition, thirty-three libraries across the state partnered with MESA groups to provide training to the public.

Figure 6 displays the number of individuals trained by MESA students.¹⁹ The first round of laptop recipients received their computers in the fall 2011 semester. Training participation fluctuated along with the academic calendar, as the data are not adjusted for seasonality to control for student holiday and semester schedules. MESA students had trained 10,871 individuals as of March 31, 2013.

Figure 6. MESA Training Participation



2.3 Education and Training

“If they want to do their homework in the MESA Center, there are five computers and about 175 students, so they’d have to wait in line for hours to get there. With their own laptop, they can do their homework anytime. And then, all of a sudden, you see the homework, you see the projects being done, and the scientific research symposiums that they’re applying to. You see them taking it a little bit further with the scholarship applications.” – MESA Director, Skyline Community College

This focus area includes activities that lead to a certificate or diploma, typically awarded by an educational institution, or that indicates the recipient has received training that is valuable for career advancement. Examples of certificates or diplomas include the following: community college degrees, four-year college degrees, advanced degrees, general equivalency degrees (GED), certifications in advanced software technologies such as network engineering, and other licenses or certifications that reflect knowledge of a particular subject at a level that would typically be taught at an educational institution.

Many of the impacts related to Education and Training were products of the distribution of laptops among MESA students. Computers are a vital tool for success in today’s college environment. Science, Technology, Engineering, and Math (STEM) coursework in particular relies heavily on the use of computers and the Internet. Students interviewed by ASR reported that they use their laptops for the following:

- Complete assignments using Microsoft Office applications.
- Complete and submit assignments through their schools’ learning management systems.
- Send and receive communication with professors through school e-mail accounts.
- Take notes during class.
- Access online learning resources, video content, and research databases.
- Access class PowerPoint slides and study guides through learning management systems.

Interviewees discussed the following Education and Training outcomes and impacts:

- MESA students in the California Connects program must plan to transfer to a four-year college or university. The grantee did not collect data on transfers, but MESA directors interviewed gave many examples of students who successfully transferred to four-year institutions, mostly within California.
- Programming had helped boost retention of enrollees at partner colleges. MESA staff at East Los Angeles College (ELAC) measured a 12 percent dropout rate among its students compared to a near 80 percent dropout rate school-wide.²⁰
- Microsoft training and testing opportunities allowed students to obtain 1,119 Microsoft certifications, including Word, PowerPoint, Excel, Access, and Outlook.²¹ Some students passed certification exams in more than one area.
- GVC and MESA trainers voiced multiple success stories about trainees going back to school to pursue associate or bachelor's degrees after training. In addition, GVC trainers reported that many of their trainees enrolled in English as a second language (ESL) courses after training or used their computer skills to access online English-language learning resources.
- The amount of time students spent on completing assignments and studying had increased with the distribution of laptops. MESA directors did not monitor students' study times. However, students reported that they were able to devote more time to schoolwork because the laptops provided convenient, mobile access to broadband and Microsoft Office software.
- Some students received community service-based scholarships because of the training opportunities provided through California Connects. Scholarships were critical for these students, as all program participants had expressed financial need.
- Many GVC trainees were parents who can now use e-mail and learning management systems to maintain connections with teachers and school administration. The evaluation study team also heard examples of parents using online learning resources, search engines, and Google Translate to support their children's educational needs.

MESA students were encouraged to test for certification in Microsoft Office applications. Laptop recipients had access to two study tools to prepare for Microsoft certification exams. They received an access code to the Microsoft IT Academy, which provided web-based training on the Microsoft Office Suite. The laptops were equipped with GMetrix, a software program that generated practice tests structured to mimic Microsoft certification tests.

ELAC MESA staff provided ASR with data that strongly suggested the study materials provided through California Connects increase students' likelihood of passing certification exams. ELAC students' averaged passing rate was more than eight times greater when a Microsoft-certified specialist introduced test-takers to GMetrix and the Microsoft IT Academy.²²

Table 2 shows the number of students who passed Microsoft certification exams.²³ The greatest number of students acquired certification in PowerPoint, followed by Word and Excel. "Other" includes AutoCAD and C++ exams, among others.

Table 2. MESA Student Certifications

Test	Number of Students Certified
Access	16
Excel	171
Outlook	6
PowerPoint	560
Word	337
Other	29

2.4 Workforce and Economic Development

"I think more jobs are becoming more technology-dependent. Everything is done on computers, and in the future it's going to be even more so. The quicker and better you can be on a computer, the better you are at competing. You distinguish yourself." – MESA Student, Skyline Community College

This focus area includes activities intended to increase overall employment of the target population, or to assist employed members of that population in finding jobs that offer increased salaries, better benefits, or a more attractive career path, including self-employment. Workforce and Economic Development activities can be performed for one's own benefit, or they may be done on behalf of another person to assist with his or her employment situation. In order for project activities to be included in this category, it must be the intention of the grantee to assist members of the workforce in improving their employment outcomes, and project resources must be devoted to this purpose.

The workplace has become extremely technology-dependent. Training opportunities offered through California Connects allow program participants to develop skills that make them attractive job candidates. Community colleges play an important role in delivering career-focused instruction through traditional and continuing education channels. Participants in interviews reported the following outcomes and impacts from Workforce and Economic Development activities:

- Some GVC trainers worked with employment-based organizations to identify training opportunities for job seekers. The Tulare County trainer partnered with the Employment Connection, an organization that offers training and resources for the unemployed. Employment Connection staff often refer job seekers with limited or no digital literacy skills to GVC training courses. Once they gained computer skills and established an e-mail address, they returned to the Employment Connection and were better equipped to find employment. FCCC regularly received e-mails from GVC trainees who expressed how the program had helped them find employment. After training, these individuals were able to create résumés, navigate employment websites, and communicate with recruiters through e-mail to obtain a job. Some trainees received promotions at their current workplace.
- MESA students gained valuable workforce skills, such as leadership and communication skills. They include their training experiences in résumés and personal statements when applying for internships and jobs. Staff members encouraged MESA students to use their laptops to create and maintain a LinkedIn account for obtaining internships. MESA Champions, student representatives who are responsible for promoting the program on campus, received a LinkedIn recommendation and a letter of recommendation from their program director to use when applying for internships or jobs. Grant administrators stressed the importance of internships, stating that STEM students who intern in their field are more likely to stay in STEM disciplines than those who do not. The evaluation study team heard multiple accounts of MESA students serving as paid interns. Paid internships are necessary, as all California Connects MESA participants have expressed financial need. Research shows that completing a paid internship greatly increases one's chances of receiving an offer for full-time employment.²⁴
- MESA students trained small business owners. The business owners used the skills to improve their business operations. One student helped his father design a simple timekeeping system in Excel for his employees. At SWCC, a group of women who run their own childcare services made fliers during training to advertise their businesses.

2.5 Quality of Life/Civic Engagement

The Quality of Life/Civic Engagement category includes activities that create stronger and more integrated communities, and those that promote interaction between citizens and their governments.

California Connects did not focus on Quality of Life/Civic Engagement, but interviewees discussed the following outcomes and impacts:

- After completing training, a GVC trainee accessed online study materials through the California Department of Motor Vehicles (DMV) to obtain a driver's license.
- GVC trainers had students who acquired United States citizenship after applying and studying online.
- A MESA student who trained mostly senior citizens expressed that many of her trainees now use the Internet as their primary news source.

2.6 Healthcare

This category includes broadband-enabled activities undertaken by participants in SBA programs to improve their own health or that of someone else. This definition includes not only sophisticated tasks, such as viewing one's medical records online, but also more common activities that might not involve a medical provider at all. California Connects did not focus on Healthcare; however, the following activities had occurred:

- A GVC trainer taught a module on using the Internet to search for health information. Topics include researching illnesses and symptoms and learning about possible drug side effects.
- Trainers from GVC and MESA reported that their trainees, particularly senior citizens, used the Internet to research local doctors and clinics.

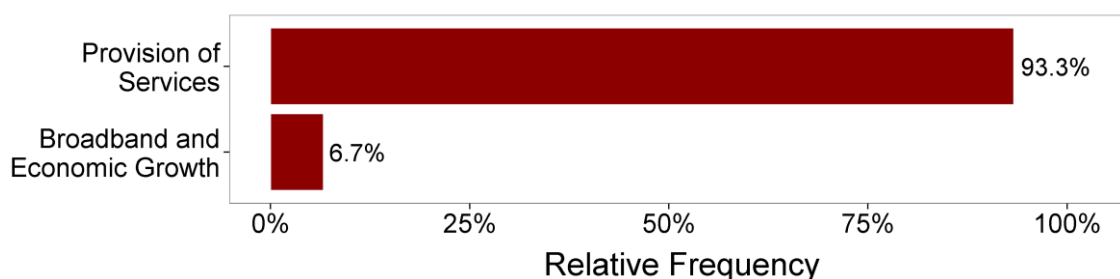
Section 3. Recovery Act Goals

This section describes the activities and outcomes associated with Recovery Act goals. Of the five Recovery Act goals for the BTOP program as a whole, two relate most directly to SBA programs:

1. Provide broadband education, awareness, training, access, equipment, and support to
 - a. schools, libraries, medical and healthcare providers, community colleges and other institutions of higher learning, and other community support organizations
 - b. organizations and agencies that provide outreach, access, equipment, and support services to facilitate greater use of broadband services by vulnerable populations (e.g., low-income, unemployed, seniors)
 - c. job-creating strategic facilities located in state- or federally designated economic development zones
2. Stimulate the demand for broadband, economic growth, and job creation

Figure 7 presents the relative frequency of topics related to Recovery Act goals as discussed during interviews and focus groups. These topics were categorized by the two Recovery Act goals discussed above. Most of the interviewees' responses discussed the grant's provision of services, including training activities. Interviewees discussed broadband and economic growth topics less frequently, but they did provide examples of program participants finding jobs or expanding their businesses.

Figure 7. Recovery Act Goals Statements Made by Interviewees



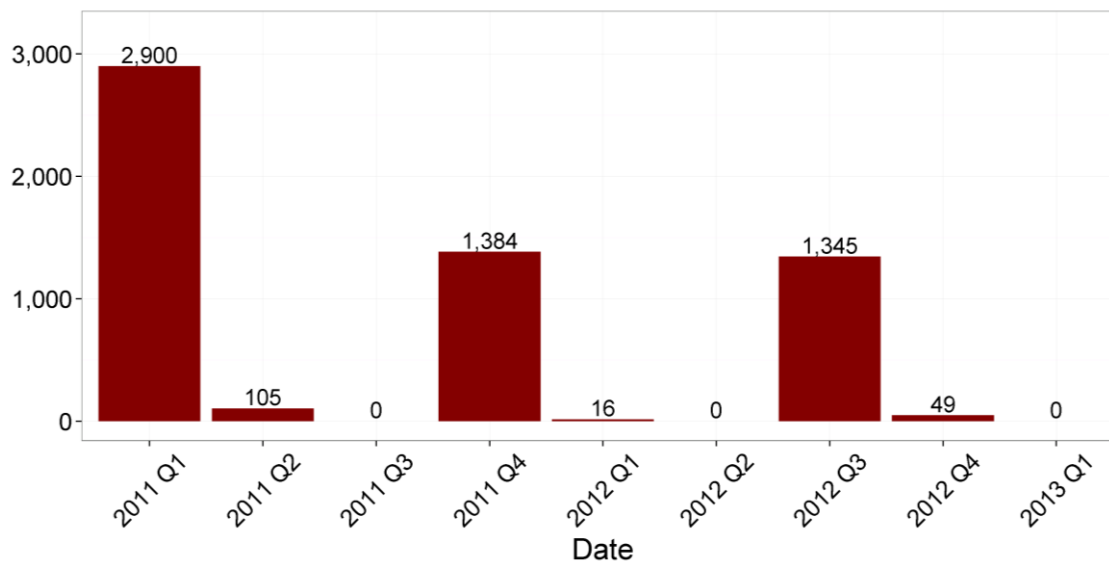
3.1 Provision of Services

"You can use the laptops for anything and everything. You can pull them out anywhere. It just makes our classes easier. We can take these laptops into class and start working on reports while we're waiting for the professor. It's just amazing." – Student, Bakersfield Community College

California Connects provided 5,799 Hewlett-Packard 4320S Probook Notebook PCs to MESA students.²⁵ The laptops are equipped with Microsoft Office Professional Plus 2010, GMetrix, and Kaspersky antivirus software. They also had a microphone, webcam, and Bluetooth wireless technology. Students interviewed by the evaluation study team were satisfied with the performance and functionality of the computers.

Figure 8 shows when California Connects distributed the laptops to partner colleges.²⁶ These data do not reflect when the colleges distributed the laptops among students. The first shipment, in the first quarter of 2011, constituted half of all laptops distributed. By the end of 2011, colleges had received 75 percent of the laptops. The remaining units arrived in 2012.

Figure 8. Laptops Distributed



Laptop recipients also received an AT&T 4G wireless broadband card with up to six months of free unlimited Internet access. Interviewees reported that the service was fast and reliable. After the trial period, students could continue their broadband service through AT&T for a monthly fee. Wireless service was accessible to students on their laptops at partner campuses. A team of FCCC student employees provided technical support. MESA students could reach the team through a hotline if they encountered problems with their computer.

Equipment and Internet service for GVC training activities varied. Community organizations allowed trainers to use their computer labs for training purposes. Some sites had well-maintained, standardized equipment. Others had mismatched workstations or out-of-date software. Internet connections also varied across sites, in speed and access. Schools, for example, often restricted content that trainers might typically access during training, such as YouTube.

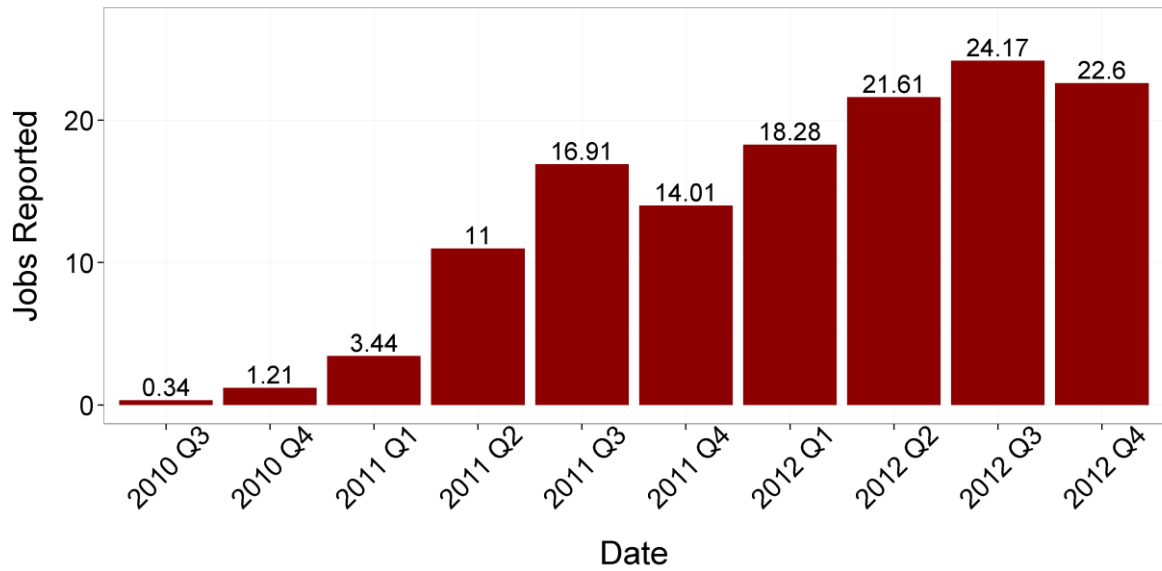
3.2 Broadband and Economic Growth

Grant administrators reported that the California Connects program had helped to diminish the digital divide in California by stimulating broadband growth among the service population. According to FCCC's reports, at least 9,151 individuals had subscribed to broadband as a direct result of California Connects activities.²⁷ This value likely underrepresents the extent to which broadband subscriptions had grown, as trainees may share information and skills with family and friends.

The grantee reported success stories, described in the previous section, but a total number of jobs obtained because of partner activities was unavailable. As required by the Recovery Act, FCCC reported quarterly on the number of jobs created as a direct result of the project.²⁸ It is important to note that the data reflect only direct jobs created, and do not include indirect or induced job creation. The grant created positions for program management staff and eighteen GVC trainers.

As shown in Figure 9, direct job creation was slow in the early grant period, but began to grow significantly in the second quarter of 2011 as FCCC began hiring GVC trainers.²⁹ After a small dip in the fourth quarter of 2011, the upward trend continued until the peak of just over twenty-four full-time-equivalent positions in the third quarter of 2012. The number of jobs has fallen slightly since that time. Variation in the number of jobs reported likely reflects changes in the program's staff in response to seasonal patterns in training attendance.

Figure 9. Direct Jobs Created by California Connects



Section 4. Grant Implementation

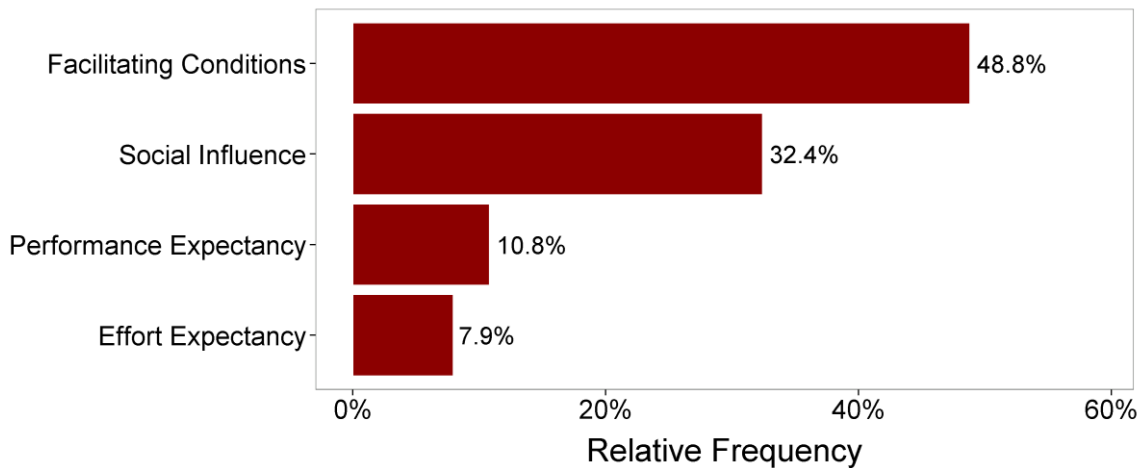
This section describes particular aspects of implementation of the California Connects grant in order to understand the composition of activities and outcomes observed. The purpose of this section is twofold. First, defining a consistent set of categories for each of the grants in the study sample facilitates cross-case comparison and analysis. Second, presentation of the activities and outcomes for this grant by category simplifies understanding of the focus of the grantee's work. This analysis is based on qualitative observations made during the site visit.

ASR is using a theory-based evaluation approach to examine the social and economic impacts of the BTOP program. This permits deeper understanding of grant features in terms of theory, which helps to explain how the grant activities produce impacts. For the PCC and SBA grants, ASR uses theories of technology adoption to examine factors that shape the demand-side of broadband services. The key theory ASR employs is the unified theory of the acceptance and use of technology (UTAUT), a technology adoption model proposed by Venkatesh et al. (2003).³⁰ The model is among the top three most frequently cited articles published in the information systems field and the preeminent article explaining the adoption of information systems. The UTAUT model traces its history from theoretical constructs found in literature that have a bearing on a user's intention of technology adoption and use. The UTAUT model is derived from the leading theories of technology adoption, including the theory of reasoned action, technology acceptance model, motivational model, theory of planned behavior, a combined theory of planned behavior/technology acceptance model, model of personal computer use, diffusion of innovations theory, and social cognitive theory.

UTAUT explains technology acceptance by looking at a user's intention to use an information system and the user's long-term use of that technology. The UTAUT model combines concepts found in earlier models of technology use to posit a unified theory of information technology adoption and use. UTAUT includes four dimensions determining user intention and technology use: Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions. Each of these dimensions is further classified into constructs constituting the dimension. The subsections below define and discuss each of these dimensions. Venkatesh empirically tested the model and reported that it was successful in explaining more variation in user adoption of technology than other adoption models tested.

Figure 10 presents the relative frequency of topics related to grant implementation, as discussed during interviews and focus groups. These topics were placed in four categories, corresponding to the four UTAUT categories listed above. Nearly half of the implementation topics discussed relate to Facilitating Conditions, and about a third to Social Influence. Performance Expectancy and Effort Expectancy subject matter accounted for a smaller portion of discussion.

Figure 10. Distribution of Grant Implementation Topics by UTAUT Dimension



4.1 Facilitating Conditions

“This particular lab is the one that I feel the most comfortable teaching in, and I think the students also are less frustrated with the computers. The computers are up to date. If I have an issue with a particular computer, all I have to do is dial an extension and a technician comes right out and fixes the problem.” – GVC Trainer, Stanislaus County

This category captures the degree to which the technical infrastructure available to the user supports potential broadband adoption, and the degree to which there are organizational supports to adoption. This includes access to broadband technology, the extent to which users can choose to use broadband, the compatibility of broadband with their lifestyle and activities, and the cost of using broadband. This also includes the resources needed to support training activities such as the broadband connection, computers, workspaces, and clean and safe computer labs. California Connects addressed Facilitating Conditions in the following ways:

- GVC training locations included schools, adult education centers, libraries, community centers, and churches. Some of the schools offered free childcare during training, allowing trainees with children to attend. Trainers held multiple class sessions to serve trainees with different schedules. Those with school-age children generally came to the morning classes after they took their children to school. Trainees who worked during the day preferred evening classes. MESA student trainers usually facilitated trainings using their donated laptops. However, some MESA Centers, such as the one at SWCC, had lab space for training activities.
- The quality of GVC training sites varied. Trainers and trainees felt most comfortable in a lab with well-maintained equipment. Poorly maintained computers were susceptible to viruses or slow processing speeds, causing frustration among learners. Sites with on-site technical support also helped to alleviate problems. The layout of workstations was important, because trainers may have had to move from station to station to provide help.
- California Connects had identified low-cost broadband service options available in the grant’s service area. It promoted programs such as Comcast Internet Essentials, Clear Mobile Citizens, and FreedomPop. Comcast Internet Essentials offered a wired home connection, while Clear Mobile Citizens and FreedomPop were mobile services. The grantee marketed Mobile Citizens and FreedomPop to migrant workers and Internet Essentials to permanent residents.
- Trainers who facilitated courses in Spanish incorporated English keywords into lessons. This helped students navigate computers programmed in English, even if they did not speak the language. Additionally, some options in the Windows operating system still appeared in English

when the language settings were set to Spanish. Students had a set of notes to which they could refer that listed the options in both languages.

- Trainers taught students on free cloud computing services so they could access them outside of class. For example, one class session involved creating a résumé using Google Drive. Many students did not complete their résumé during the class session, but they were able to complete it at home through their Google account.
- Shirts, folders, stickers, and other items marked with the California Connects logo made the program appear cohesive and authentic. This lent credibility to instructors, particularly those who were much younger than their trainees.

4.2 Social Influence

“There are a lot of seniors I had the opportunity to work with that range in age. They feel like they’ve been exiled because they just can’t communicate through a computer. And I feel that the purpose of a computer is all about being in touch with your family. It’s so much more accessible, especially for some of them whose family members are in Europe or Mexico, and they can’t really communicate every day.” – MESA Student, Southwestern Community College

This category measures the degree to which potential adopters perceive that others will view them favorably or interact with them in a positive way if they adopt broadband technology. This includes friends and family members who might already be using broadband technology. It also includes measures of whether the use of broadband is considered to be a social norm for the social group to which the potential adopter belongs. Components of Social Influence include subjective norms, social factors, and the image associated with broadband use. Examples include the following:

- The populations served by grant programming deeply valued social connection. These individuals felt particularly motivated by the social nature of computing. Regular use by friends and family often influenced nonusers to adopt broadband in order to communicate locally and abroad. Both programs included features that encouraged students to train or encourage family and community members to gain digital literacy skills and adopt broadband. Social networking sites, e-mail, and Skype were popular training topics among these individuals.
- The social relationship between trainers and trainees was important. Establishing trust among trainers and trainees was necessary as a foundation for training activities, as inexperienced learners required a comfortable, nonjudgmental environment.
- California Connects created Ning sites for MESA students and GVC trainers. Ning is a customizable social networking tool. On the MESA and GVC Ning sites, members could access important documents, post to message boards, and share resources. An FAQ page served as a resource for users who encountered common problems with their laptops.
- GVC trainers were responsible for marketing and outreach activities. They deployed marketing through local radio, television, and print outlets. They also distributed fliers, in English and Spanish, at frequently visited community institutions. Project partners and training site hosts also marketed training programs, which is a particularly effective strategy because these organizations were established and trusted in the community. Endorsement from these groups legitimized GVC training programs.
- California Connects operated in community colleges within a previously established organization, MESA. When students joined MESA, staff urged those who were eligible for the California Connects program to participate. The existing social ties allowed for peer learning opportunities.

4.3 Performance Expectancy

“Training also helped my family realize that having a computer and having Internet access has shifted from being a luxury to a necessity. My younger family members, my siblings, are going to need it. They’re going to need it heavily in school. So a lot of my family bought laptops.” – MESA Student, East Los Angeles College

Performance Expectancy measures the degree to which a potential adopter believes that gaining access to broadband is beneficial for job searching or for an activity in another focus area. Aspects of Performance Expectancy include the perceived usefulness of the new technology, outcomes expectations, and the perceived relative advantage of the technology versus previously used technologies. Examples include the following:

- Performance expectations among the target populations were relatively limited. Trainers presented material through real-world applications and examples to demonstrate how trainees could integrate technology into their daily lives. Examples included accessing online news sources, searching for recipes, comparing product prices, and creating a budget spreadsheet.
- Trainees who purchased a computer after completing training often solicited help from their trainer in selecting the equipment most appropriate for their use. Trainers explained the benefits of desktop and laptop computers. They asked questions about the trainees’ intended use of the computer to recommend an appropriate product.
- Even the brief, one-on-one training sessions given by MESA students had significantly broadened performance expectancies. Many student trainers observed a shift in their families’ perception of computers and Internet access as a luxury item to a necessity.

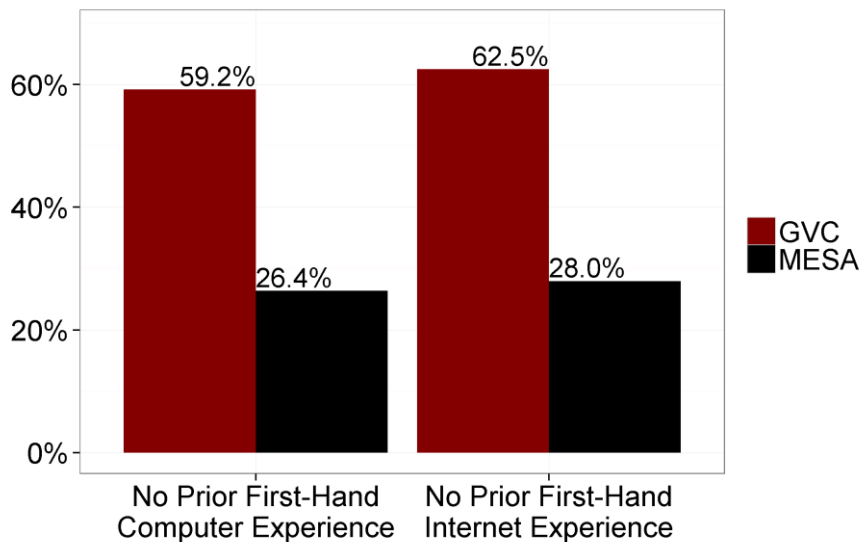
4.4 Effort Expectancy

“I had a student once who was very nervous about touching the computer. She even cried because she was afraid of breaking the computer. I sat down with her and I told her, ‘If you break it, I’m going to pay for it.’ And then she started playing with the computer.” – MESA Coordinator, Southwestern Community College

This category measures the expectations of the potential adopter regarding the difficulty of using broadband to achieve benefits in one or more of the focus areas described above. It includes preconceived ideas about the difficulty of using broadband technology and computers in general, and anxiety or concerns about the risks of broadband use. For SBA programs, it indicates how the service model made using broadband to access information and services on the Internet easier for new or inexperienced users.

Training a first-time user requires a different approach from working with frequent computer users. They often show apprehension toward manipulating computer equipment and absorb material at a slower pace. Because the GVC and MESA training components served different populations, Effort Expectancy among the programs’ trainees differed. Figure 11 shows the percentage of trainees who reported no first-hand computer or Internet experience before the training.³¹ The proportion of GVC trainees with no first-hand computer experience was more than twice that of the MESA trainee population. The pattern was similar among trainees without first-hand Internet experience. For both trainee populations, the proportion of individuals with no first-hand Internet experience was slightly higher than the proportion of those with no first-hand computer experience.

Figure 11. Trainees with No Prior First-Hand Computer and Internet Experience



California Connects addressed Effort Expectancy in the following strategies:

- Trainers served non-English-speaking trainees by teaching them in their native language. GVC classes served a largely Hispanic population, so many GVC trainers taught in Spanish. Courses observed by ASR in Ceres and Delano were delivered in Spanish. MESA student trainers had delivered training in thirty-five languages, including Spanish and Tagalog.
- Trainers used different approaches when training senior citizens. Seniors tend to master material at a slower rate than trainees who recently attended school. GVC trainers often paired senior citizens with younger trainees during the practice portion of lessons. Peer learning allowed seniors to receive one-on-one, personalized attention, which made them more comfortable.
- Program management found that trainees were not challenged by language barriers, but rather by literacy barriers. The GVC target population, in general, had relatively low levels of educational attainment. Trainers revised materials to make them appropriate for trainees with limited literacy skills.
- MESA students completed a digital literacy pre-test that served two purposes. First, it helped program administrators gauge the digital literacy rate among participants. Staff typically regarded STEM students as highly proficient in computer use. However, program management discovered through tech support requests that this was not necessarily the case among all MESA students. Second, it allowed FCCC to adapt the program's service model to educate and support students with lower levels of digital literacy.
- Trainees with no computer experience tended to be nervous about touching or using equipment. They were often anxious they would break the computer if they touched it. Trainers created a comfortable environment by emphasizing that touching the computers would not result in damage and that, if it did, the trainees will not be liable.

Section 5. Techniques, Tools, and Strategies

This section describes successful techniques, tools, and strategies identified by the grantee. California Connects noted many successful techniques, tools, and strategies that it developed over the course of the grant.

5.1 Techniques, Tools, and Strategies

The evaluation study team identified the following successful techniques, tools, and strategies:

- Trainers' teaching styles evolved during the grant period with each group of trainees. In general, there was a shift in focus from technical subjects to skill application. Trainers observed that their students gained more from the course by learning about practical, relevant uses of the Internet.
- The Ning sites for GVC trainers and MESA students helped grant administrators manage the project over a broad geographic area. Users could share information through message boards, allowing staff to pool resources to develop effective strategies and solutions. The FAQ page helped laptop recipients troubleshoot common technical issues, limiting the number of help requests faced by the technical support team.
- Program management streamlined the way it collected, organized, and stored data. After paper forms and Excel reporting proved inefficient, the grantee purchased a subscription to Zoho, a cloud-based database tool. GVC trainers and MESA directors could input data directly through Zoho. FCCC used Zoho to run reports on GVC and MESA data and manage trainers' supply orders.
- FCCC used Moodle to design a series of free web-based digital literacy lessons called Living with Technology in English and Spanish. A welcome video introduced students to the course, which was self-guided and loosely mimicked the GVC course structure. Each of the eight lessons concluded with a post-test.
- Trainers choose outreach methods with the target population in mind. They reported having the greatest success marketing through Spanish radio stations, local access television, and churches. They circulated English and Spanish marketing materials. Where possible, fliers included pictures of real GVC training sessions to humanize the program and make it appear relatable.
- FCCC hired GVC trainers well connected in their communities, because community partnerships were essential for acquiring training space and recruiting participants. Trainers who were aware of the resources in their communities were more likely to find and obtain permission to use adequate training facilities. They trained in a wide variety of sites, including churches, schools, adult education centers, libraries, and a mobile lab. Partnerships with trusted organizations signaled to community members that California Connects is a legitimate, trustworthy program.
- Having a staff member who could serve as a California Connects program coordinator was helpful to MESA directors. The directors interviewed expressed that administering the California Connects program in addition to other MESA activities was a great deal of work for a single person. The grant did not fund support staff. However, at some campuses, other employees or student workers were able to assume this role.
- ELAC conducted a follow-up survey with program participants each year to collect feedback about the program. Through these results, they learned which program components were effective and ineffective, and made changes accordingly.
- The Champion Program is a leadership and outreach program designed to recruit MESA students to participate in California Connects. Each MESA group designated one or two Champions who promoted awareness about the benefits of California Connects and encouraged eligible MESA members to join.

5.2 Challenges

Interviewees expressed the following challenges:

- The service period of the AT&T broadband cards that accompany students' laptops began when the manufacturer shipped the laptops. Colleges did not distribute all of their laptops immediately upon receiving them. Because of this timing, some students received fewer than six months of free broadband service, or in some cases no service at all.
- Some campuses had difficulty recruiting participants. A common issue was proving the validity of the program. Students thought the program sounded "too good to be true" or worried there were hidden requirements attached to receiving the laptop. Other issues included challenges in raising awareness and unwillingness to complete community service requirements.
- Intake tests showed that most MESA students had moderate to low digital literacy skills. As a result, they required more technical support than anticipated by program management. FCCC would like to acquire more funding to build a technical support department. In the interim, a group of student employees provides support through a hotline.
- Because GVC trainers rely on other organizations' labs for training, the space and equipment did not always meet their specific needs. Workstations were occasionally mismatched or poorly maintained, leading to frustration among trainees. Different sites may have had different operating systems, requiring trainers to alter training materials accordingly. Some networks, such as those at schools, restricted sites like Facebook or Skype that are part of training.
- Low levels of literacy among GVC trainees posed a barrier to learning. Twenty-five percent of GVC trainees were not educated past elementary school.³² Trainers had to revise course content to serve these individuals.
- Many factors affect training participation, and multiple training cycles passed before trainers discovered what schedules worked best. Many trainees were parents, so finding childcare was a barrier to enrollment. In response, trainers held classes during school hours or at locations that offered free childcare. Because the target population had a large number of migrant farm workers, trainers had to schedule courses with seasonality in mind.

Section 6. Conclusions

The California Connects project promoted broadband adoption through the provision of training services and equipment for underserved populations. California Connects participants are largely Hispanic low-income earners with little to no computer or Internet experience. Lack of broadband adoption is markedly lower among GVC trainees who have less first-hand computer and Internet experience compared to MESA trainees. California Connects has provided these populations with free computer training resources in areas where free training alternatives are scarce.

The provision of laptop computers was immensely beneficial for MESA students. Most students interviewed stated that they would not have had a personal computer without the California Connects program because of limited financial resources. Without their own laptop, they relied on shared public computers at school or other PCCs or shared computers with their family members. Having a personal computer allowed them to attend to their schoolwork at their own convenience, resulting in more time spent on academic activities. It also enabled students who previously did not have a home computer to communicate with professors and other students from home.

Although nearly all trainer and end-user training sessions focused on general digital literacy topics, grant activities affected other focus areas as well. Most notably, California Connects produced impacts in the Education and Training and Workforce and Economic Development focus areas. Education-related impacts included improved academic performance, new enrollment in college programs, transfers to four-year universities, and the acquisition of merit-based and service-based scholarships.

Impacts in Workforce and Economic Development affected the employed, unemployed, and students. Unemployed individuals developed the technology skills necessary to use computer and web-based resources to acquire a job. The program led to promotions among some trainees who were capable of new work responsibilities after training. MESA students developed leadership skills as trainers and used their laptops to connect with industry professionals to obtain internships and full-time employment.

The goals of California Connects aligned with the intent of BTOP and the Recovery Act. FCCC partnered with academic and community organizations to provide training and equipment to vulnerable populations in California. Grant programs directly created more than twenty-four jobs and prompted more than 9,000 new home broadband subscriptions.³³

Successes and challenges of the program serve as examples for the deployment of similar programs in the future. One notable feature of the program was the leveraging of community resources for GVC training activities, which eliminated equipment costs for that arm of the program. Expiration dates of the broadband cards distributed with the laptops also serve as an important lesson learned for future programs that aim to provide a similar service for their participants. Developing creative solutions for internal program operations was greatly beneficial to program management and staff. The GVC trainers' Ning site, for example, proved to be a successful technique for communicating and sharing resources across a broad geographic area. FCCC also discovered a valuable tool when they identified Zoho as method for collecting, organizing, and reporting data.

Section 7. Next Steps for the BTOP Evaluation Study

In early 2014, ASR will deliver *Interim Report 2* to NTIA. This report will include a summary of the second round of case study visits to the fifteen PCC and SBA grants, allowing for an analysis of the impacts of the grants over time. *Interim Report 2* will also summarize the findings from case study visits to twelve Comprehensive Community Infrastructure (CCI) grants. These visits will take place in the fall of 2013 and result in a set of twelve case study reports delivered to NTIA over several months.

For the PCC and SBA projects, *Interim Report 2* will provide an update to and refinement of the analysis presented in *Interim Report 1*. For the CCI projects, *Interim Report 2* will summarize the activities underway by twelve CCI grantees and the impacts these projects intend to have on broadband availability and adoption for community anchor institutions, communities, and individuals.

FCCC is considering strategies for sustainability over the coming years. Because lab space is donated, the focus will be on continuing to fund trainers or identifying volunteer trainers. Many MESA participants trained beyond the minimum program standards and FCCC expects that they will continue to do so. In the future, FCCC will also focus on moving training content online. Some basic digital literacy training modules are available online through California Connects' Living with Technology series. ASR will check in with FCCC in the second quarter of 2014 to learn more about the sustainability of the project.

In September 2014, ASR will deliver a *Final Report* that quantitatively and qualitatively measures the economic and social impact of BTOP grants (including CCI, PCC, and SBA). The centerpiece of the *Final Report* will be an assessment of how and to what extent BTOP grant awards have achieved economic and social benefits in areas served by the grantees. To the extent that such information is available, results from studies performed by the grantees will round out the conclusions presented.

Notes

- ¹ Foundation for California Community Colleges, "Broadband Non-Infrastructure Application Submission to NTIA - Sustainable Broadband Adoption", March 2010.
- ² Daniel Gilbert-Valencia, "FCCC Data Request" (Email attachment, June 2013).
- ³ National Telecommunications and Information Administration, "Post-Award Monitoring (PAM) Database 2013-06-11" (Washington, DC: Distributed by National Telecommunications and Information Administration, 2013).
- ⁴ Gilbert-Valencia, "FCCC Data Request."
- ⁵ Daniel Gilbert-Valencia, "TestResults" (Email attachment, July 2013).
- ⁶ United States Census Bureau, "ACS 2005-2009 Summary," *American Community Survey*, December 13, 2011, <http://www2.census.gov/acs/>.
- ⁷ United States Census Bureau, "ACS 2005-2009 Summary."
- ⁸ National Telecommunications and Information Administration, "Statement of Work for Broadband Technology Opportunities Program (BTOP) Evaluation Study", July 26, 2010.
- ⁹ Foundation for California Community Colleges, "Broadband Non-Infrastructure Application Submission to NTIA - Sustainable Broadband Adoption."
- ¹⁰ National Telecommunications and Information Administration, "Post-Award Monitoring (PAM) Database 2013-06-11."
- ¹¹ Armando Rivera-Figueroa. Interview by author. Audio recording. Monterey Park, CA, May 15, 2013.
- ¹² National Telecommunications and Information Administration, "Post-Award Monitoring (PAM) Database 2013-06-11."
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- ¹⁴ ASR Analytics, *Progress towards BTOP Goals: Interim Report on PCC and SBA Case Studies, Broadband Technology Opportunities Program Evaluation Study (Order Number D10PD18645)* (Potomac, MD, December 5, 2012), <http://www.ntia.doc.gov/report/2012/progress-towards-btop-goals-interim-report-pcc-and-sba-case-studies>; National Telecommunications and Information Administration, "Post-Award Monitoring (PAM) Database 2013-03-11" (Washington, DC: Distributed by National Telecommunications and Information Administration, 2013).
- ¹⁵ Federal Communications Commission, *Connecting America: The National Broadband Plan*, 2010, <http://www.broadband.gov/plan/>.
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Daniel Gilbert-Valencia, "GVCYear2Training_Edit" (Email attachment, July 2013).
Daniel Gilbert-Valencia, "MESA training_Edit" (Email attachment, July 2013).
- ¹⁸ Gilbert-Valencia, "FCCC Data Request."
- ¹⁹ Gilbert-Valencia, "FCCC Data Request."

²⁰ Rivera-Figueroa. Interview by author.

²¹ Gilbert-Valencia, "TestResults."

²² Monica Garcia, "East Los Angeles College California Connects Activities Report" (Email attachment, May 2013).

²³ Gilbert-Valencia, "TestResults."

²⁴ National Association of Colleges and Employers, "Class of 2012: 60 Percent of Paid Interns Got Job Offers", June 24, 2013, <https://www.naceweb.org/s08012012/paid-intern-job-offer/?referral=knowledgecenter&menuid=109>.

National Association of Colleges and Employers, "Class of 2013: Paid Interns Outpace Unpaid Peers in Job Offers, Salaries", June 24, 2013, <https://www.naceweb.org/s05292013/paid-unpaid-interns-job-offer.aspx?referral=knowledgecenter&menuid=109>.

²⁵ Gilbert-Valencia, "FCCC Data Request."

²⁶ Gilbert-Valencia, "FCCC Data Request."

²⁷ National Telecommunications and Information Administration, "Post-Award Monitoring (PAM) Database 2013-06-11."

²⁸ Recovery.org provides the following guidance and example for calculating grant-funded jobs:

1. If a normal full-time schedule is 40 hours a week, multiply 40 hours x 52 weeks = 2,080 Total Hours per year.
2. Divide 2,080 Total Hours by 4 to equal 520 regular quarterly hours.
3. If two full-time employees each worked 520 hours (1,040 hours) for the quarter and another half-time employee worked 260 hours, the Total Hours for the three employees is 1300 (520 + 520 + 260 = 1300).
4. Divide 1300 by 520 to equal 2.5 Recovery funded jobs during that quarter.

For more information, visit <http://www.recovery.gov/News/featured/Pages/Calculator.aspx>

²⁹ The Recovery Accountability and Transparency Board, "Recovery API," *Recovery.gov* (Washington, DC, March 20, 2013), <http://www.recovery.gov/FAQ/Developer/Pages/RecoveryAPI.aspx>.

³⁰ Viswanath Venkatesh et al., "User Acceptance of Information Technology: Toward a Unified View," *MIS Quarterly* 27, no. 3 (September 2003): 425–478.

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³² Gilbert-Valencia, "GVC_Year1Training_Edit."

Gilbert-Valencia, "GVCYear2Training_Edit."

³³ The Recovery Accountability and Transparency Board, "Recovery API."

National Telecommunications and Information Administration, "Post-Award Monitoring (PAM) Database 2013-06-11."

Glossary

Acronym	Definition
APR	Annual Performance Progress Report
ASR	ASR Analytics, LLC
BCC	Bakersfield Community College
BTOP	Broadband Technology Opportunities Program
CCI	Comprehensive Community Infrastructure
DMV	Department of Motor Vehicles
ELAC	East Los Angeles College
ESL	English as a second language
FAQ	Frequently asked questions
FCC	Federal Communications Commission
FCCC	Foundation for California Community Colleges
FERPA	Family Educational Rights and Privacy Act
GED	General equivalency degree
GVC	Great Valley Center
ISP	Internet Service Provider
MESA	Mathematics, Engineering, Science Achievement
NTIA	National Telecommunications and Information Administration
PCC	Public Computer Center
PPR	Quarterly Performance Progress Report
SBA	Sustainable Broadband Adoption
SODA	Student of Distinction Award
STEM	Science, Technology, Engineering, and Mathematics
SWCC	Southwestern Community College
UTAUT	Universal Theory of Acceptance and Use of Technology

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