

Technology-Based Learning in the Public Workforce System: Emerging Policy and Practices in States and American Job Centers

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Executive Summary

Background

Over the past decades, the use of technology-based learning (TBL)¹, i.e., educational technology, or digital learning, has dramatically altered the delivery of education and training in the U.S and beyond. At all educational levels and in the public workforce system as well, TBL has been used to extend learning opportunities geographically, reduce costs and allow for individualizing learning.

Technological approaches to building workplace knowledge and skills hold the potential to address several serious skills gaps in the U.S. The gaps exist between the competencies of adult workers and the requirements of many jobs employers want to fill as well as in the skills needed to productively search, apply for and retain jobs. For example, one in six adults has low literacy skills and nearly one in three has low numeracy skills (OECD, 2016). Additionally, a large percentage of adults in the U.S. lack basic computer skills at a time when many new jobs, according to a recent report published by the Brookings Institution, require such skills (Gray, 2017; Muro et al., 2017). Low levels of basic reading and digital literacy in turn, affect jobseekers' ability to use internet-based systems where most job vacancies are to be found. Further, many jobseekers lack current knowledge of how to conduct an effective job search and, in some cases, have not mastered the basic accountability and communication requirements of the work world.

Expanding use of TBL and the technological infrastructure in the workforce system was given renewed impetus by requirements in the Workforce Innovation and Opportunity Act (WIOA), enacted in 2014. The law increased state and local responsibilities to support use of technology for a number of goals, among them enhancing digital literacy skills, accelerating learning, and ensuring access to career services and training for individuals with disabilities or in remote areas.

As part of an ongoing research initiative, the Employment and Training Administration (ETA) in the U.S. Department of Labor has been actively exploring the use of TBL in the public workforce system and has sponsored several discrete but related studies. This report focuses on two areas of this research: 1) emerging state policies on TBL and 2) use of TBL at the local level in American Job Centers (AJCs).

Research Objectives

The research attempted to address an array of research questions posed by ETA and covers multiple topics, such as:

¹ For the purposes of our analysis, we rely on the definition of TBL outlined in Training and Employment Guidance Letter (TEGL) 17-07 by ETA: TBL constitutes learning via electronic technology, including the Internet, intranet sites, satellite broadcasts, audio and video conferencing, Internet bulletin boards, chat rooms, Webcasts, simulations, gaming, and a variety of mobile options such as podcasting. TBL is an umbrella term, which also encompasses related terms, such as distance learning, on-line learning, Web-based learning (which only includes learning that occurs via the Internet), CDs and DVDs, and computer-based learning (by which we mean learning through the use of dedicated personal computers).

- State policies and initiatives that promote TBL in training and education across five focus areas: employability or “soft skills,” basic literacy and numeracy, technological literacy, job search skills, and occupational training and certification;
- Promising state strategies to increase remote access to TBL (e.g., increasing broadband coverage in an area, developing partnerships with community sites such as libraries and schools).
- AJCs’ experiences with TBL used for improving employability or “soft skills,” basic literacy and numeracy, technological literacy, and job search skills;
- Perceived barriers related to TBL implementation; and
- Staff perceptions of the effectiveness of existing TBL-based services, including promising strategies for effective implementation.

Key Findings

Based on in-depth site visits with five state workforce agencies (Massachusetts, Kentucky, Utah, Minnesota, and California) and nine AJCs, all of which were actively developing policy or expanding use TBL, the research team found the following:

- **TBL use was widespread but highly variable at the state and AJC levels.** Some state workforce agencies were in the early stages of piloting and implementing TBL; most had adopted a diverse set of TBL software and support resources to help adults find, apply for, and keep jobs. AJCs too adopted (in some cases from the state) a diverse set of software programs and tools to support the job search process, increase basic literacy and computer skills, and develop or improve their employability. This can be seen in the range of the over 40 different software programs identified to support the various areas for skill development. Whether offered directly by AJCs or partner agencies and providers, these software packages included programs that enabled customers to work at their own pace and allowed instructors to customize services for different learning styles.
- **Access to technology is improving but still a challenge.** Access to career services and training though the Internet remains difficult in a number of states and AJCs. Many individuals reside in rural areas where broadband coverage is sparse, have limited financial resources to afford at-home internet access, or lack reliable transportation options to attend in-person training or utilize technology resources or computer labs at AJCs. Almost all the state workforce agencies visited implemented strategies to address these challenges. These strategies ranged from conducting assessments to understand broadband and connectivity challenges to establishing partnerships with telecommunication companies to increase access for hard-to-reach populations. Moreover, several AJCs adopted TBL to increase customers’ access to career services. With online or computerized training, customers can access training at times and/or locations that are most convenient for them.
- **Lack of technological literacy and costs are the most common barriers to the adoption and use of TBL in AJCs.** The most common barriers identified by AJCs were low levels of technological literacy among customers, and the costs associated with acquiring computers and other equipment. Most of the AJC directors and staff interviewed believed that customers’ lack of computer literacy was a primary barrier in TBL implementation. Moreover, the majority of AJCs

described how funding to purchase technological equipment and software had declined in the past few years, making it harder for them to purchase equipment and software subscriptions.

Additionally, state workforce agencies also noted that there were some challenges coordinating with AJCs in the implementation of TBL and in negotiating the inclusion of online and out-of-state training providers on the Eligible Training Provider List (ETPL).

- **Contextual factors were critical drivers in TBL adoption across selected states and AJCs.** Changes in the local economy (e.g., economic downturns or industry-specific shifts), customers' access to career services, and customers' skill gaps were considered the most critical factors in both state workforce agencies and AJCs' decisions to adopt and expand TBL.
- **TBL was considered valuable by states and AJCs for service provision.** Despite challenges in using technology-based learning, respondents from the state workforce agencies and AJCs were enthusiastic about its benefits of technology in the public workforce system. Overall, TBL was viewed as helping to address customers' needs, both in increasing their skills in a number of areas and increasing capacity and flexibility in the delivery of career services.

Promising Strategies

Some of the strategies used to enhance the use and effectiveness of TBL, as identified by state workforce agencies and AJCs, included:

- **Developing and Cultivating Partnerships.** State workforce agencies and AJCs established partnerships with libraries, local community and state colleges, and community-based organizations to deliver TBL content, engage hard-to-reach customers geographically, and to fill gaps in TBL access. These partnerships helped expand the reach of the workforce system in delivering TBL-based services and promoted efficiency among different components in the overall public workforce system.
- **Increasing Remote Access and Broadband Coverage.** State workforce agencies piloted and implemented a broad array of strategies designed to increase customers' access to TBL as well as to improve workforce services more generally. These strategies include assessments of broadband coverage (to understand the depth of the challenges), newly designed mobile workforce centers and devices, new initiatives and funding for expanded broadband coverage, and partnerships with libraries, telecommunication companies and community-based organizations. By expanding broadband coverage, state workforce agencies were able to expand the geographic reach of TBL and also to career services for many groups that are often excluded from services.
- **Providing Professional Development Opportunities.** While it is difficult for state workforce agencies and AJCs to keep pace with new technology and build staff and instructor competency, providing ongoing professional development opportunities are important for engaging staff in effective use of TBL. To build instructional effectiveness, state workforce agencies and AJCs can consider a range of professional development opportunities. These include shadowing or observing instructors implementing TBL at other AJCs, facilitating learning groups or peer learning opportunities, establishing a community of practice, or hosting "guest speakers" with knowledge of how best to integrate TBL within instructional content.

- **Engaging AJC Staff in the Selection of TBL Resources.** Along with professional development opportunities, executive directors at state workforce agencies and AJC center directors might engage staff in the selection of learning platforms, tools, and resources. This can help to ensure buy-in from staff, and keep them invested in learning new ways to incorporate TBL into other forms of instruction.
- **Building Staff Capacity to Support Customers' TBL Engagement.** AJC directors, staff, and instructors reported that many customers had low levels of technological literacy, and that this was a significant barrier to effective utilization of TBL. In some locations, there was a need to increase the number of staff available in resource rooms or computer labs in AJCs, libraries, and schools to monitor and support students' transition into using online learning, and to encourage and motivate student progress.

Looking Ahead

Overall, state workforce agencies and AJCs recognize the promise of TBL. It can allow workforce systems to more efficiently deliver services and it provides tools and services to more clients, helping to close the skills gap. However, more research is needed to identify what types of TBL are effective. State workforce agencies and AJCs are spending substantial amounts to improve their platforms, purchase software programs, pay for online training, and train staff, but there is little research that shows whether these investments are paying off. Similarly, more systemic research may be needed to understand which types and features of TBL are effective, or could be made more so, for the varied customer groups in the workforce system.

1. Introduction

Over the past decades, the use of technology-based learning (TBL)², i.e., educational technology, or digital learning, has dramatically altered the delivery of education and training in the U.S and beyond. At all educational levels and in the public workforce system as well, TBL has been used to extend learning opportunities geographically, reduce costs and allow for individualizing learning.

Technological approaches to building workplace knowledge and skills hold the potential to address several serious skills gaps in the U.S. The gaps exist between the competencies of adult workers and the requirements of many jobs employers want to fill as well as in the skills needed to productively search, apply for and retain jobs. For example, one in six adults has low literacy skills and nearly one in three has low numeracy skills (OECD, 2016). Additionally, a large percentage of adults in the U.S. lack basic computer skills at a time when many new jobs, according to a recent report published by the Brookings Institution, require digital skills (Gray, 2017; Muro et al., 2017). Low levels of basic reading and digital literacy in turn, affect jobseekers' ability to use internet-based systems where most job vacancies are to be found. Further, many jobseekers lack current knowledge of how to conduct an effective job search and, in some cases, have not mastered basic accountability and communication requirements of the work world.

Expanding use of TBL and the technological infrastructure in the workforce system was given renewed impetus by requirements in the Workforce Innovation and Opportunity Act (WIOA), enacted in 2014. The law increased state and local responsibilities to support use of technology for a number of goals, among them enhancing digital literacy skills, accelerating learning, and ensuring access to career services and training for individuals with disabilities or in remote areas.

1.1 DOL Policy Context

The U.S. Department of Labor's (DOL) Employment and Training Administration (ETA), which administers WIOA, has long been exploring the viability and effectiveness of technological approaches for accessing services and for teaching and learning. This is manifest in ETA's development of signature suites of online information on careers, training and jobs, currently found in its Career One Stop site (<https://www.careeronestop.org>). However, this commitment also emerged in a national initiative in 2008, with the release of the Training and Employment Guidance Letter (TEGL) No. 17.07, *Using Technology-Based Learning in the Workforce Investment System*. Under its TBL initiative, ETA has provided policy guidance and technical assistance to states and has created or refined multiple e-tools, namely computer or web-based applications, to support job seekers. In addition, ETA has pursued a number of research and dissemination projects focused on testing the viability of TBL, sharing best practices for incorporating technology into the public workforce

² For the purposes of our analysis, we rely on the definition of TBL outlined in Training and Employment Guidance Letter (TEGL) 17-07 by ETA: TBL constitutes learning via electronic technology, including the Internet, intranet sites, satellite broadcasts, audio and video conferencing, Internet bulletin boards, chat rooms, Webcasts, simulations, gaming, and a variety of mobile options such as podcasting. TBL is an umbrella term, which also encompasses related terms, such as distance learning, on-line learning, Web-based learning (which only includes learning that occurs via the Internet), CDs and DVDs, and computer-based learning (by which we mean learning through the use of dedicated personal computers).

system, and evaluating promising programs (Koller et al., 2006; Dunham et al., 2011; Maxwell et al., 2013; Gan et al., 2013).

Building on these past efforts, ETA commissioned several discrete but related studies that examine TBL use within the public workforce system. This report focuses on two areas of study: 1) emerging state policies and practices, and 2) TBL use in American Job Centers (AJCs).

For the purposes of our analysis, we rely on the definition of TBL outlined in Training and Employment Guidance Letter (TEGL) 17-07 by ETA:

TBL constitutes learning via electronic technology, including the Internet, intranet sites, satellite broadcasts, audio and video conferencing, Internet bulletin boards, chat rooms, Webcasts, simulations, gaming, and a variety of mobile options such as podcasting. TBL is an umbrella term, which also encompasses related terms, such as distance learning, on-line learning, Web-based learning (which only includes learning that occurs via the Internet), CDs and DVDs, and computer-based learning (by which we mean learning through the use of dedicated personal computers).

1.2 Purpose of Report

This report documents how TBL is currently being used in selected states and AJCs, under what circumstances, and the factors that shaped its adoption. Regarding emerging state policies and practices to promote TBL in training and education by the public workforce system, this study was designed to address the following two goals:

- To explore state policies and practices that promote TBL in training and education across five focus areas: Employability or “soft skills,” basic literacy and numeracy, technological literacy, job search skills, and occupational training and certification; and
- To describe promising strategies implemented in the selected states to increase remote access to TBL (e.g., increasing broadband coverage in an area, developing partnerships with community sites such as libraries and schools).

The second study, focusing on use of TBL in AJCS, examines examples of how TBL is being used to enhance participants’ employability (or “soft” skills), basic literacy and numeracy, technological literacy, and job search skills. The goals of this study were three-fold:

- To document AJCs’ use of and experiences with TBL,
- To examine perceived barriers related to TBL implementation, and
- To describe staff perceptions of the effectiveness of existing TBL-based services, including promising strategies for effective implementation.

1.3 Organization of the Report

The report includes chapters covering the following:

- **Methodology**, which discusses the types of data collected, selection of sites, and the analysis methods used, as well as the limitations of both studies;
- **Findings on Emerging State Policies and Practices on TBL**, based on our review of state WIOA plans and site visits with five state workforce agencies (Massachusetts, Kentucky, Utah, Minnesota, and California);

- **Findings from Technology-Based Learning in American Job Centers**, documents the use and experiences of TBL in nine AJCs visited;
- **Promising Strategies for Effective TBL Implementation**, highlights promising approaches and lessons learned;
- **Summary of Key Findings from States and American Job Centers**, which reviews findings from both studies;
- **State Summaries**, summarize TBL approaches, promising TBL strategies for effective implementation, and future use in each state; and
- **Appendices**, which include additional details on the methodology, sources of TBL software cited in this report, and protocols used for site visits and the survey.

2. Methodology

This section briefly describes the approach to data collection, selection of sites, plan for analysis, and study limitations.

2.1 Overview of Data Collection

The information presented in this report is based on two primary data sources: 1) a review of WIOA state plans, and 2) site visits to state workforce agencies and AJCs.³

Review of State WIOA Plans

To explore states' emerging policy and practices involving TBL, the study team conducted a keyword search of 57 plans, including those for all states, the District of Columbia and six U.S. territories, using the following terms: “technology-based learning,” “computer-based learning,” “web-based learning,” “e-learning,” “online learning,” “distance learning,” “connectivity,” and “digital literacy.” For each state plan, we reviewed how technology was referenced and noted descriptions of TBL programs, including the types of services and target populations (such as veterans, youth, and individuals with disabilities) mentioned in regard to this services. The goal of this search was to highlight states with promising TBL strategies and, if possible, to provide additional context for states selected for site visits. Appendix A includes more information about the review of state WIOA plans.

Site Visits

The primary sources of information for this report were state and local level site visits that involved both interviews and observations. To help identify possible sites for the visits, ETA's regional offices were asked to identify state workforce agencies and AJCs that were actively using TBL and were willing to host site visits. The study team contacted directors and staff at the recommended sites to confirm that they were using and developing new TBL approaches and were willing to host a visit. Once the sites agreed to the visits, the study team worked with them to identify a diverse group of directors and managers, staff members, and partner agencies and organizations with expertise on TBL who would be participate in the interviews on site.

Between August 2017 and March 2018, the study team conducted one-day site visits in five states (Massachusetts, Kentucky, Utah, Minnesota, and California) and two-day site visits at nine AJCs across all six DOL regions. This included the following AJCs: Fall River Career Center in Massachusetts, Arlington Employment Center in Virginia, CareerSource Flagler-Volusia in Florida, Taylorsville and Lehi Unemployment Career Centers in Utah, Anoka County and Bloomington WorkForce Centers in Minnesota, WorkSource Portland Metro in Oregon, and the Inglewood South Bay One Stop and Business Career Center in California. Some local visits also involved local workforce development boards (LWDBs) that have oversight of AJCs.⁴ Exhibit 1 below summarizes the states and ETA regions where visits took place with the AJCs, LWDBs, and states.⁵

³ The study of TBL in American Job Centers involved a survey conducted between January 31 and March 30, 2018, but as discussed later in this report, has a low response rate. For that reason, only information from a review of state WIOA plans and site visits is included in this report.

⁴ In August 2017, we conducted an exploratory site visit in Los Angeles. We conducted interviews with staff at the LWDB as well as directors and staff at the AJCs. The goals of the exploratory site visit were as to gain an in

Exhibit 1: States, LWDBs, and AJCs Selected for Site Visits

Region	State	Interviewed State Agency	Interviewed LWDB(s)	Interviewed AJC(s)
1	Massachusetts	✓	✓	✓
2	Virginia		✓	✓
3	Florida			✓
3	Kentucky	✓		
4	Utah	✓		✓
5	Minnesota	✓		✓
6	Oregon		✓	✓
6	California	✓	✓	✓

Site visitors used a semi-structured interview protocol for both state workforce agencies and AJCs (which can be found in Appendix D) that focused on five main topics:

- Current use of TBL in improving customers’ employability or “soft” skills, basic literacy and numeracy, technological literacy, job search skills, and (at the state level) occupational skill building and certification,
- Decision-making about TBL,
- Perceived effectiveness and satisfaction with TBL,
- Challenges with the implementation of TBL, and
- Perspectives on key supports and resources for effective TBL use.

Along with these topics, site visitors to state workforce agencies also asked about the inclusion of online training providers on Eligible Training Provider Lists (ETPL) and interstate agreements.

During state level site visits, researchers spoke with senior program administrators (e.g., Commissioners, Executive and Board Directors, ETPL administrators, etc.). In visits at AJCs, researchers interviewed directors, academic managers, instructors, partners such as community-based organizations and basic skill providers from local community and state colleges, IT support staff, and a designer at one AJC.

Interviews lasted approximately 45 to 60 minutes. To protect the privacy of these respondents, we define respondents as directors and staff throughout the report.

If workshops or classes were in session during the site visit, the study team also had an opportunity to conduct observations. However, this was not always possible across all of the AJCs visited. When

depth understanding of how technology-based learning (TBL) was currently being used and impressions as to its value and effectiveness, as well as to clarify the most appropriate respondents (e.g., state workforce board directors, and AJC directors, and frontline staff) to help sharpen the topics in the AJC survey as well as for future site visits. Moreover, based on this experience, the study team also interviewed one or two administrators from the LWDBs during site visits in Massachusetts, (state and AJC), Virginia (AJC) and Oregon (AJC).

⁵ In a few instances, the study team visited multiple offices that are part of an AJC. For the purposes of this report, we counted the activities across these offices as one AJC, but explain discrepancies where they exist among different respondents interviewed.

conducting these observations, site visitors sat in the back of classrooms and took detailed notes about the use of TBL, the role of the instructor and customer, and the hardware and software available in the room.

2.2 Overview of Data Analyses

The study team used qualitative analytic techniques to analyze the information from the site visits to the state workforce agencies and AJCs. These techniques involved synthesizing and cleaning the interview notes and then uploading them into NVivo, a qualitative data analysis software package. The team then developed preliminary sets of codes based on each study's research questions and used an inductive coding process to refine the codes and generate new ones in response to emergent themes. As common themes emerged, the study team categorized the data and counted the numbers of states as well as AJCs reporting on a particular topic.

2.3 Study Limitations

Both studies have a number of limitations, which affect the generalizability of the findings regarding TBL use in the public workforce system. First and most obviously, only a small number of state and AJCs were visited and these included only state workforce agencies and AJCs that were actively using TBL. Second, participation in the site visits was voluntary and it is possible that those who agreed to speak with the research team had stronger opinions, either positive or negative, about TBL than those who did not participate.

In addition, the review of state WIOA plans did not target only sections related to the workforce system and thus may have identified efforts conducted by other state agencies. Also, the study team relied on a select number and type of keywords to guide the search and thus may have inadvertently missed particular TBL initiatives or programs described under different keywords. However, the study team conducted site visits in selected states to better document TBL use, providing far more extensive information that was available in the WIOA plan.

In an effort to document the prevalence and types of TBL in use among AJCs, the research team conducted a short survey with the universe of 1,535 AJCs. However, only 20 percent of AJCs completed the survey,⁶ due to a variety of administrative challenges, including a short-time period (January 31-March 30, 2018) for fielding the survey and lack of direct contact information for AJC directors or staff overseeing or implementing TBL. Given the low response rate, and the concomitant inability to generalize from this information, this report includes information only from our review of state WIOA plans and site visits.

⁶ Surveys with large samples typically employ longer field periods to allow more time to reach respondents, which help yield higher response rates.

3. Findings on Emerging State Policies and Practices in Technology-Based Learning

This chapter presents information from a review of state WIOA plans and site visits to five state workforce agencies (Massachusetts, Kentucky, Utah, Minnesota, and California). Discussed here are state workforce agencies' roles, initiatives, partnerships in regard to TBL, as well as the factors they took into consideration in adopting TBL programs, the strategies used for increasing remote access to TBL (and career services) and challenges the states experienced in the implementation of TBL.

The discussion covers the use technology-based training and education programs in five skill areas:

- **Employability or “soft skills,”** which focus on the interpersonal skills and accountability that individuals need in order to be successful in the workplace. These areas include, but are not limited to, positive work habits, attitudes, and behaviors such as punctuality, regular attendance, and working well with others;
- **Basic literacy and numeracy**, which can be at different levels, as found in courses or activities for Adult Basic Education (ABE), Adult Secondary Education, college developmental education, and English language acquisition;⁷
- **Technological literacy**, which typically involves a course or workshop, that teaches individuals to use digital technology, communication tools or networks to locate, evaluate, use and create information;
- **Job search skills**, focusing on learning how to understand labor market and occupational information, and such critical skills as preparing resumes, being interviewed, and preparing follow-up letters; many state workforce agencies provide access to online videos and tutorials that offer self-paced instruction regarding these critical skills; and
- **Occupational skills and certification** involving programs to teach technical or occupational skills and earn an employer or industry-recognized certificate or license in recognition of an individual's attainment of those skills.

3.1 State Roles in TBL, New Initiatives and Programs Currently in Use

State workforce agencies' role in developing policy and promoting use of TBL are varied and evolving. As shown below, developing technology-based learning systems is one area where state workforce agencies are directly engaged in making services available to the public. Also, state workforce agencies often collaborate with other state agencies to provide several forms of TBL – such as literacy programs

⁷ *Adult Basic Education* is a class or instructional program which teaches basic skills including reading, mathematics, and writing, provided to adults with skills at or below 8th grade level and which does not charge college tuition. *Adult Secondary Education* teaches secondary education material to adults with skill levels between 9th and 12th grade levels. Such classes typically prepare students for testing to receive a high school equivalency credential such as the General Educational Development (GED), High School Equivalency test (HiSET), or the Test for Assessing School Completion (TASC). *College developmental education* are classes offered by a college which are designed to raise participants' math, reading, or writing skills to enable them to succeed in college-level work. Lastly, *English Language Acquisition* is a class or instructional program that helps adult English language learners improve their proficiency in English.

through state adult systems, and to expand connectivity through initiatives to enhance broadband coverage.

A quick scan of state WIOA plans showed that workforce agencies either directly developed and implemented software programs and tools or made these available through various partner programs. Exhibit 2 highlights the states from our site visits that discussed TBL in their WIOA plans across the five skills (see Appendix A for a matrix showing the types of TBL mentioned in all states’ and territories’ plans).

Exhibit 2: TBL Discussed in State WIOA Plans in States Visited across Five Focus Areas

States	Employability or soft skills	Basic literacy or numeracy	Technological literacy	Job search Skills	Occupational skills and certification
California		✓	✓		
Kentucky		✓			
Massachusetts		✓	✓	✓	✓
Minnesota	✓	✓		✓	✓
Utah			✓		

Note: Technological literacy was defined as any mention in the WIOA plan as a strategy to increase digital literacy.

Four of the five state plans (California, Kentucky, Massachusetts, and Minnesota) mentioned technology in regard to basic literacy and numeracy in their WIOA plans. Two notable examples of such programs were found in California and Kentucky. In California, the Outreach and Technical Assistance Network, funded by the California Department of Education (CDE) through the Adult Education and Family Literacy Act (AEFLA) grant, piloted an online math curriculum to increase access for adult learners (The State of California, 2018) while Kentucky Adult Education collaborated with the state’s Educational Television on a distance learning program to facilitate students’ completion of online modules in preparation for the GED® test (The Commonwealth of Kentucky, 2018).

A number of state plans discussed efforts to improve technological literacy and expand on-line training services and access, though not necessarily under the workforce system. For example, California’s plan discussed how the Department of Education contracts with an outside agency to provide staff training and space for providers of distance education courses. In Massachusetts, the Adult and Community Learning Services (ACLS), part of the state agency that oversees ABE, is in the process of developing a multiyear statewide technology plan to address the integration of digital literacy in family literacy, distance learning, transition to college, and workplace education programs.

Other state plans (such as those for Massachusetts and Minnesota) mentioned TBL in the context of occupational training and skills certification. In Massachusetts, for example, the state WIOA plan discussed the development of a new online, web-based based platform to help workforce system customers secure occupational training, develop skills, and search for jobs that matched their skills (The Commonwealth of Massachusetts, 2018). These same states also mentioned technology in the context of job search skills. Minnesota was the only state, however, that discussed use of technology in regard to soft skill improvement. Minnesota’s WIOA plan discussed the role of their partners in developing “asynchronous e-learning” courses to help workforce system customers improve soft skills and successfully search for jobs (The State of Minnesota, 2018).

3.1.1 Specific TBL Approaches

WIOA state plans provide only a limited view of efforts to use TBL in the public workforce system. More detailed information was collected in the state site visits in interviews with state program administrators (e.g., commissioners, executive and workforce board directors, and ETPL administrators), which highlights a variety of promising state level initiatives, programs, and tools across each of the five skill areas. These are discussed below. Additional information can be found in Appendix B, which offers a list of all the TBL software and tools reported on during site visits, including the state summaries (located at the end of the report), which provide additional examples of TBL approaches, promising strategies, and partnerships in each of the states.

Employability or Soft Skills

Overall, two of the states (Kentucky and Massachusetts) offered examples of TBL programs that addressed soft skills while other states focused on TBL in other skill areas. For example, *Kentucky’s WIN e-learning platform* consists of four self-paced modules delivered online that focus on communicating effectively, thinking critically and problem solving, promoting teamwork and collaboration, and conveying professionalism. Customers can complete the course individually or in a classroom setting facilitated by an instructor. Additionally, Kentucky implemented the *Teleworks USA program* which can be used to deliver training in-person and online. Staff members in Eastern Kentucky use an interactive, self-directed online program to help individuals develop customer service skills and land remote jobs.

Additionally, Massachusetts encouraged AJCs’ use of *Career Ready 101*. While the state selected the tool to increase basic literacy, several AJCs in the state, including one visited for AJC TBL study (discussed later in this report), used it to improve customers’ soft skills. Career Ready 101 includes three online modules, one of which focuses on positive workplace habits as well as communication skills.

While some workforce program administrators in the state were skeptical about using technology to build soft skills, some AJCs have utilized a blended or hybrid approach to soft skill delivery. Under this strategy, instruction is delivered both using technology and in a traditional classroom. As one workforce board director mentioned:

There are some [local] programs that have used the curriculum from Career Ready 101. They use Career Ready 101 as a platform and then have a blended learning component so there is face-to-face. There is a bias towards an in-person component for soft skills.

Basic Literacy and Numeracy

Workforce agencies in three states (Massachusetts, Minnesota, and Kentucky) provided examples of TBL software designed to improve customers’ basic skills, which was a product of either the workforce agency itself or in partnership with other state agencies.

Key Features of Massachusetts’ Career Ready 101

- Includes a resume builder
- Includes career exploration tools by category and skill
- Incorporates pre-and-post assessments by topic
- Incorporates the O*NET interest profiler
- Generates reports to monitor progress (e.g., enrollment, completion, and time)
- Enables customers to earn the WorkKeys National Career Readiness certificate
- Additional information found at <https://www.mass.gov/career-ready-101>

As described earlier, the Massachusetts Workforce Development Board adopted the use of the Career Ready 101 as part of its Career Readiness Initiative, which was part of a statewide effort to increase basic

literacy and job readiness skills. The curriculum is available online and is organized into three modules: 1) finding your career, 2) KeyTrain Workplace skills, and 3) ACT soft skills. AJCs can also use it as a pre-assessment tool to understand customers' academic and occupational skills or as a tool to help customers search for jobs or build academic skills.

In Minnesota, staff from the state workforce agency reported they met regularly with colleagues from ABE and libraries. However, the ABE system is responsible for managing adult literacy and numeracy programs in the state. To help address basic and technological literacy skill deficiencies, ABE purchased four distance learning platforms. These platforms included:⁸

- ***Burlington English***, a computer-based program for English as a Second Language (ESL) students, which provides hundreds of hours of English language courses online, as well as an interactive SpeechTrainer that works on students' pronunciation;
- ***i-Pathways***, which helps students prepare for the GED, HiSET, and/or TASC exams through the completion of self-paced courses in reading and writing, science, and social studies;
- ***Plato Learning Environment (Edmentum)***, which offers comprehensive online courseware including reading, math, social studies, and science; and
- ***Northstar Digital Literacy Assessment***, which is designed to identify digital literacy skills and highlight areas for improvement.

Workforce and ABE administrators in Minnesota also promoted the use of the ***Learning Express Library***, which includes a suite of e-learning tools such as tutorials, practice tests, and e-books for basic skills improvement. Customers may access these tools in AJCs. However, the availability and use of these tools vary across AJCs in the state.

Lastly, the ***Kentucky Adult Education (KYAE) Skills U Lesson Bank*** has an online repository of lessons created and vetted by KYAE Skills U instructors for Adult Education instructors to use with customers.⁹ Adult education instructors can select lesson plans across a variety of subject areas, which include reasoning through lesson arts, mathematics, science, social studies, English language acquisition, and employability. All lessons are designed to help customers develop critical skills and knowledge for further post-secondary training and employment.

Technological Literacy

Given the prevalence of computer-based labor exchange systems, it is not surprising that all five states workforce agencies had existing software programs to help improve technological literacy.¹⁰ Workforce

⁸ ABE instructors in Minnesota are free to use distance learning as they see fit for their students and their classrooms. TBL approaches in basic skill improvement are likely to vary across regions and instructors.

⁹ The Kentucky Skills U Lesson Bank, of the Kentucky Adult Education agency, is a repository of standards-based units and lessons created by Kentucky Skills U instructors which are a tool and resource for performance accountability in all six core programs under WIOA, including adult and youth programs and Wagner-Peyser funding employment services, as well as for adult education and vocational rehabilitation programs. All lessons and units have undergone a rigorous vetting process with WIOA core programs to ensure they are relevant and appropriate to the adult learner.

¹⁰ The study team was unable to collect concrete information about the instructional methods used to improve technological literacy, at the state level.

board directors in California said that the state offered a basic computer class for customers who indicated they did not have an email address. Kentucky offered basic computer workshops for customers through programs that receive Federal funds directed to local educational agencies under Title I of the Every Student Succeeds Act.¹¹ By contrast, state workforce programs in Massachusetts used free online digital literacy courses available through Microsoft, and Utah used self-guided computer-based educational training to teach basic computer courses.

In Minnesota, ABE partners, libraries, AJCs, and Americorps volunteers collaborated to teach basic computer classes using the *Northstar Digital Literacy Assessment*, which was developed in-state.¹² In 2014, the libraries and several ABE programs in five cities established a site within each community as part of the Northstar Digital Literacy Project. The program assesses adults' digital literacy through online, self-guided modules which focus on "Basic Computer Use, Internet, Windows Operating System, Mac OS, Email, Microsoft Word, Social Media, Microsoft Excel, Microsoft PowerPoint, and Information Literacy" (Northstar Digital Literacy Project, 2018). Participants can obtain the Northstar Digital Literacy Certificate to share with employers once they complete the assessment.

Job Search Skills

All of the states visited used TBL to help customers learn how to find and apply for jobs. However, it was difficult to differentiate between training job search skills and the use of labor market information. Some common components of the systems included: customers being able to develop and review resumes online, use online career exploration tools, and create "interest profiles" to build job search skills. For example, Kentucky utilized an online tool called *Focus/Career* that allows customers to develop resumes, explore careers, and find best-fit jobs based on their skills and work experiences. *Focus/Career* prioritizes best fit jobs to apply for throughout the state of Kentucky for customers based on their previous work experience and skills.

Similarly, Utah and Minnesota were awarded Workforce Innovation Fund (WIF) grants from the U.S. Department of Labor to improve access to career and labor market information and to build job search skills. Utah received a three-year grant to create the state's Next Generation of Labor Exchange Services, under which the state's Department of Workforce Services (DWS) made significant improvements to the online services that job seekers and employers can access (Utah Department of Workforce Services, 2016). The state also developed Utah Futures, an online career information system that provides residents with access to labor market information, career assessments, resume and cover letter builders,

Key Features of Utah's online labor exchange

- Includes a mobile app to help search and target jobs by area
- Connects job seekers to unemployment, childcare, and refugee services
- Provides career assessments and training workshops on job search skills
- Includes online job searching with verified employers
- Additional information found at <https://jobs.utah.gov/index.html>

¹¹ As per the U.S. Department of Education, "Title I, Part A (Title I) of the Elementary and Secondary Education Act, as amended (ESEA) provides financial assistance to local educational agencies (LEAs) and schools with high numbers or high percentages of children from low-income families to help ensure that all children meet challenging state academic standard" (2015). Additional information is available at <https://www2.ed.gov/programs/titleiparta/index.html>

¹² Basic computer classes vary across AJCs. Some AmeriCorps volunteers are stationed at AJCs while others are stationed at libraries or with ABE training providers.

links to paid online courses, and test preparation tools. Workforce program administrators also reported that AJCs conduct in-person workshops, known as Work Success, which integrates several online skill-building components.

Two other states were developing or had piloted TBL software to build customers' job search skills:

- Minnesota was in the process of developing their WIF-funded, web-based employment platform that will help customers' to learn how to develop resumes, enhance their interviewing skills, and professional networking and
- Massachusetts used *Transferable Occupation Relationship Quotient (TORQ)*, a web-based tool that matches job seekers' skills and abilities with current job openings from local employers. TORQ assesses customers' previous jobs and assigns a score that indicates what is needed to transfer current skills to available jobs.

Occupational Skills and Certification

Most online tools adopted in the five states allowed customers to earn skills certificates. In Kentucky, customers can earn the Kentucky Career Readiness Certificate (KCRC) after completion of the *WIN e-learning* curriculum. Moreover, Kentucky's *Teleworks USA program* enables customers to earn Teleworks USA certification, National Career Readiness Certificate (NCRC), or a national retail certificate. Similarly, Massachusetts' *Career Ready 101* provides customers a completion certificate. Minnesota customers that pass the *Northstar Digital Literacy Assessment* at an approved site are awarded the Northstar Digital Literacy Certificate.

Other states such as Utah and California directed their customers to other websites or third party vendors with online and distance learning courses to earn skills certificates. For example, program administrators in California and Utah mentioned *study.com* and *Nevada's Skills Online* as resources that offer customers online certificates to build soft skills.

3.1.2 Target Populations

In this section, we focus on the groups that were targeted in the delivery of TBL-based services. While all the states visited served a diverse group of customers (e.g., veterans, youth, individuals with disabilities, etc.), only two states (California and Massachusetts) provided examples of how they used TBL with specific target populations.

California's Workforce Accelerator Fund was designed by the California Workforce Development Board to spark innovation in the local workforce system and accelerate employment opportunities for target populations. The Fund provides small, yet flexible grants to local organizations and AJCs to test new ideas in addressing barriers to employment for target populations such as returning veterans, individuals with disabilities, low-income workers, CalWORKS participants¹³, disconnected youth, ex-offenders, and immigrant job seekers (California Workforce Development Board, 2017). Several funded projects under this initiative have utilized technology to "accelerate" skill development, employment, and reemployment. For example, a recent accelerator-funded project between the Fresno Regional Workforce

¹³ CalWORKS "is a public assistance program that provides cash aid and services to eligible families that have a child(ren) in the home. The program serves all 58 counties in the state and is operated locally by county welfare departments" (California Department of Social Services, 2018). Additional information available at <http://www.cdss.ca.gov/CalWORKS>

Development Board (FRWDB) and Mentored, an internet/mobile job placement technology firm, used a technology-supported coaching model to help CalWORKS participants and disconnected youth build work-readiness skills for employment. The model uses email, text, and phone communications that allow coaches to connect with customers from any location (California Workforce Development Board, 2017). This coaching model has been scaled and replicated in several regions throughout the state.¹⁴

In Massachusetts, the state workforce agency offered *Career Ready 101* (discussed above) for use with inmates and the Executive Office of Public Safety and Security (EOPSS) piloted use of *Career Ready 101* with its customers in a pre-release program. While there were strict protocols that local programs must follow to limit access to online content with inmates, state program administrators believed the *Career Ready 101* was still accessible in building skills for this group.

3.1.3 Summary

Overall, all five states implemented various forms of TBL, some of which were not included in their WIOA plans, in employability or soft skills (two states), basic literacy and numeracy (three states), technological literacy (five states), job search skills (five states), and occupational training and certification (five states). State workforce agencies and other agencies such as ABE have also adopted products and tools to support both instructors and customers. For instructors, TBL offerings enable them to track customers' progress and design lessons based on customers' learning style and needs. For customers, access to TBL programs and software allows them to build academic and job readiness skills and earn certificates of completion to share with employers. More rigorous research is needed to identify what types of TBL are effective for building academic and job-readiness skills and under what conditions TBL is effective for targeted groups.

3.2 Factors States Consider in Adopting TBL

This section examines critical factors that affect decision-making in the adoption of different TBL products: 1) changes in the local economy, 2) customers' accessibility to career services, and 3) customers' skills gaps.

3.2.1 Local Economic Context

Three state workforce agencies visited reported that TBL helped them to respond to economic downturns or industry-specific shifts in the local economy. For example, Kentucky launched the *Teleworks USA program* (described in the previous section) in response to the decline of the coal industry in the eastern part of the state. As of 2015, coal employment decreased by 18 percent in the state (Kentucky Energy and Environment Cabinet, 2016). The *Teleworks USA program* used interactive, self-directed online tools to help individuals gain technical skills and land remote jobs in this changing economy. This included remote jobs in customer service, digital troubleshooting, or more technical jobs in computer coding or software administration.

Two other state workforce agencies developed TBL tools or expanded labor exchange services in response to the economic recession.

¹⁴ California's Workforce Development Board and the Employment Development Department has also conducted webinars and disseminated publications, toolkits, and white papers for use in scaling and replicating promising practices about the Workforce Accelerator Fund. The state is also collaborating with a third party firm to evaluate the effectiveness of the Workforce Acceleration Fund that will be published in the fall of 2018.

- Utah expanded its technological infrastructure to increase employment prospects of higher skilled workers who lost their jobs during the economic recession. The state redesigned its online services to address the needs of these customers and to deliver more cost-efficient services.
- Massachusetts encouraged AJCs' use of *Career Ready 101* to help address the demands of a changing labor market in which thousands of customers were seeking career services as a result of the economic recession.

3.2.2 Need to Improve Accessibility

Program administrators in three states (Kentucky, Minnesota, and Utah) attempted to improve customer access both to programs that could help build their skills and also to labor exchange services. Many customers in these states live in rural areas with limited Internet connectivity and also lack viable transportation options or are unable, for other reasons, to attend in-person workshops (or even use the computers) in AJCs. Improving access to the Internet and to TBL programs has the potential to expand the geographic and demographic reach of workforce training and educational resources.

To increase customers' access to services, Kentucky's state workforce agency encouraged AJCs to develop their "own spaces with mobile staff." This included providing online and mobile services that were accessible to customers in their homes as well as hospitals, VA Centers, health clinics, or other facilities. In Minnesota, local workforce agencies and ABE providers forged relationships with libraries to provide customers increased access to online workforce and basic skills improvement programs.

3.2.3 Need to Address Critical Skills Gaps

The continued emergence of new technologies and higher skill requirements in many jobs place a premium on workers having skills that allow them to be competitive in the U.S. economy. As reported by administrators in four out of the five states visited, the development and adoption of various TBL program was motivated by a recognition that additional technological resources might help to address serious skill deficiencies.

Two notable examples are from Massachusetts and Kentucky, as noted above. Massachusetts also encouraged AJCs' use of *Career Ready 101* to address challenges of low literacy and math skills among low wage workers throughout the state, many of whom lacked a high school diploma or GED. One workforce board director described the factors that influenced the selection of this tool:

This was in response to the great recession. Scores of people were coming through the system – the system as in Workforce One Stop Career Centers. We saw people coming into career centers looking for jobs, and knew that part of that was because of skill gaps, especially basic skills.

A similar motivation drove program administrators in Kentucky to adopt several online learning tools to help customers develop basic and technological literacy skills that could affect career readiness. As one adult education program administrator described, about 20 percent of the distance learning courses documented in Kentucky's reporting system were delivered through "homework packets" in which students completed lessons with a pen and paper. To help customers develop both basic and digital literacy skills, the department of Adult Education in Kentucky, part of the state's Council on Postsecondary Education, redesigned its curriculum to help close the skills gap in the state. The *KYAE Skills U Lesson Bank* was implemented by the state to ensure all ABE instructors used consistent material that was aligned with college-and-career readiness standards. Lesson Bank is an online

repository of standards-based units and lessons created and vetted by KYAE Skills U instructors to improve basic skills.

3.2.4 Summary

Three factors were critical in state workforce agencies' decisions to adopt TBL approaches and use specific TBL programs: changes in the local economy, customers' lack of geographic and technological access to services, and customers' skill deficiencies. More than half of the states visited for this study adopted TBL in response to economic downturns or industry-specific shifts in the local economy and several were motivated to address customers' lack access to services by working to improve connectivity and in specific TBL programs. Lastly, almost all of the state workforce agencies saw TBL as a means to address gaps in customers' skills, and alone or in partnership with other state agencies, supported specific TBL programs to address those gaps.

3.3 Remote Access

Customers' ability to remotely access TBL (as well as career services) was an ongoing challenge that confronted several states in their efforts to expand TBL to a diverse customer base. Many individuals reside in rural areas where broadband coverage is sparse, have limited financial resources to afford at-home Internet access, or lack reliable transportation to access computer-based training or other AJC resources in person. Improving remote access is an obvious candidate for making the public workforce system more readily available to people who otherwise would be unable to obtain services. Remote access also can reduce costs relative to brick-and-mortar AJCs and can increase the public workforce system's flexibility to respond to job seekers' varied needs. This section briefly discusses the challenges that state workforce administrators identified in improving broadband coverage and Internet connectivity and summarizes promising strategies being implemented to mitigate these challenges.

3.3.1 Challenges

Workforce agency administrators described two significant barriers to improving TBL accessibility: limited broadband coverage in rural areas and funding.

The majority of state workforce agencies (four out of five) noted that schools, libraries, and AJCs were some of the only places rural residents could access the Internet. Yet, just as individuals in rural areas find it hard to access broadband in their homes, they also face difficulties travelling to areas with Internet access. According to several state program administrators, some residents live more than fifty miles away from an AJC, or may reside in farmworker camps without reliable transportation options, both of which create challenges to these individuals accessing TBL services.

Another major challenge confronting some state workforce agencies was lack of funding to improve Internet access in rural areas (reported by three states). In addition, the lack of funding also prevented efforts to improve connection speeds within their jurisdiction, or to provide for a sufficient number of local Internet access points. As one state workforce program administrator noted, limited funding mechanisms made it difficult to support broadband expansion efforts, thereby entrenching rural customers' barriers to receiving online AJC services.

3.3.2 State Strategies

To address these challenges, state program administrators identified six main strategies that have been piloted and implemented to increase remote access.

Scans of Broadband Coverage

Two states reviewed their existing broadband options to better understand remote access capabilities and the extent to which they act as a barrier. For example, Kentucky's workforce agency awards a Work Ready certification to counties providing a minimum level of broadband coverage and Internet connectivity speed, as long as they also meet other standards of workforce service provision. Similarly, Minnesota has expanded upon federal funding they received through the National Broadband Map initiative to create a map of existing broadband coverage that legislators and providers can use to tailor future broadband and connectivity improvement efforts. Through these strategies, state workforce administrators aim to become more aware of the communities that need the most assistance to improve TBL accessibility.

Mobile Workforce Centers

To ease transportation barriers to TBL access in rural areas far from brick-and-mortar locations, two states created mobile workforce centers that travel to communities statewide. In California, mobile units provide free computer access and workforce system information to farm workers. Similarly, a Minnesotan mobile center serves a different tribal community each day instead of operating one brick-and-mortar center.

Mobile Devices

Although some individuals cannot access TBL resources through home computers, they may still own mobile devices with Internet capabilities. In recognition of this, two states designed or modified workforce system platforms to enable customers to access career services from a cell phone or tablet. Utah developed a mobile app that allows job seekers to search jobs from their mobile devices within a specific area or by keywords. Kentucky built a case management system called Key Suite through which customers can access career services through their mobile devices. The state is also collaborating with Amazon to help integrate mobile access capabilities for the new case management system.

State Initiatives and Funding

Some state workforce agencies also tried to improve existing broadband infrastructure by harnessing government funding and grants. Two states, Kentucky and Minnesota, offered examples of this strategy. Kentucky's Shaping Our Appalachian Region (SOAR) and Wired65 initiatives are intended to expand broadband coverage in rural communities, and state administrators claimed their early effects appeared promising.¹⁵ SOAR promotes career pathways training in the telecommunications industry and encourages the development of community-based Internet access improvement plans, while Wired65 uses \$5 million in federal funding to support occupational training and broadband expansion along the I-65 corridor. Moreover, Minnesota recently set aside over \$80 million in state grants to incentivize telecommunication companies to expand their coverage in underserved areas and establish high-speed Internet connectivity across the state.

Six Key Strategies to Increase Remote Access

- Conduct scans of broadband coverage
- Increase TBL accessibility through mobile workforce centers
- Provide TBL access on mobile devices
- Expand broadband coverage through state initiatives and additional funding
- Develop partnerships with local institutions such as libraries or community colleges to increase TBL access
- Establish partnerships with telecommunication companies to expand broadband coverage

¹⁵ The study team was unable to find information about funding levels from the SOAR initiative in Kentucky.

Partnerships with Local Institutions

Most state workforce agencies interviewed reported they often partner with public library systems when collaborating to solve remote access challenges, since many libraries supply free Internet access across multiple locations, and many also provide workforce services through workshops and online training. These existing capabilities make libraries a logical choice for state workforce partnerships. According to the commissioner in Kentucky, the workforce system aims to treat libraries as small, local points where workforce customers can use TBL resources. This is especially helpful in libraries that offer Adult Education Services, since customers can access a wide range of workforce services. Kentucky launched a pilot initiative to offer educational and employment programs at public libraries in multiple counties.

State workforce agencies also collaborate with other local institutions to mitigate barriers to TBL access. When issuing municipal grants¹⁶, Minnesota state administrators favor Internet access improvement projects that aim to serve local institutions—such as community colleges or fire stations—that could act as online access hubs. In Massachusetts, sheriffs’ offices are also licensed to provide *Career Ready 101* services to jobseekers. Partnerships like these allow the state workforce agency to collaborate with numerous organizations to increase the number of places in rural areas where individuals can access TBL services.

Partnerships with Telecommunication Companies

State workforce agencies reported that they also partner with telecommunications companies, encouraging them to expand broadband coverage and making Internet access more affordable for low-income individuals. Two notable examples are in Minnesota and Kentucky. In Minnesota, workforce program administrators provide grants to organizations—including cooperatives and local governments—that provide sustainable and scalable Internet access. The goal is to “incentivize providers to bring broadband out to undeserved homes and businesses.” The Kentucky workforce system also partners locally with telecommunications companies to provide discounted or free Internet access to individuals attending state workshops. They also supply limited amounts of mobile data access to customers using local AJC offices. One state program administrator noted how this strategy links brick-and-mortar services to at-home TBL accessibility, claiming that the workforce system “can offer workshops forever, but if [customers] can’t [perform training tasks] at home because of limited access or service, that hurts the job seeker.”

3.3.3 Summary

State workforce systems often experience challenges when trying to improve access to TBL opportunities for individuals who lack at-home Internet access, many of whom live in rural areas. Rural areas often lack broadband coverage and do not have the resources for necessary improvements. Moreover, many people cannot reliably travel to brick-and-mortar workforce centers. Massachusetts, Kentucky, Utah, Minnesota, and California have implemented a variety of strategies to combat these challenges. These strategies promote mobile access, encourage broadband coverage expansion, and measure existing remote access capabilities. States workforce agencies also work with public and private sector community partners like libraries and telecommunications companies to improve TBL accessibility in these communities.

¹⁶ The study team was unable to collect information as to whom these grants were awarded to in Minnesota.

3.4 TBL Implementation Challenges

This section presents information on the primary barriers states experienced in the provision of TBL. Two challenges emerged from discussions with state workforce agencies about TBL implementation: coordination with AJCs, and the inclusion of online and out-of-state training providers on Eligible Training Provider Lists (ETPL).

3.4.1 Coordination with AJCs

State workforce agencies in Massachusetts and California were the only states that offered examples of the challenges associated with coordinating with AJCs in the use of TBL services. An ongoing challenge was finding the right balance between allowing autonomy to AJCs to adopt TBL initiatives in ways they felt best served their customers and providing enough guidance to assure that AJCs successfully implemented TBL. To build support for *Career Ready 101*, Massachusetts engaged LWDBs and AJCs the year before its release. They also held a series of webinars that introduced the concept of the tool. However, AJCs were allowed to define their own objectives for using the tool with their customers. As one workforce board director described,

We didn't want to be ultra-directive on how to use our TBL tool. Our approach was to say here's a tool that will enhance capacity. You have different needs. Organizationally things are set up differently; the customer base and mix of programs and activities differ. No one size fits all.

This amount of flexibility in the provision of TBL left some AJCs feeling overwhelmed about how best to implement TBL. Retrospectively, workforce program administrators felt that it would have been better to provide AJCs with a few program models to demonstrate how to use *Career Ready 101* and then allow AJCs to adapt the program models as needed.

"The benefit to these tools ... they can be applied in many different ways, but too much flexibility can be paralyzing."
— State Interview, 2018

Issues of local autonomy versus state control also surfaced in California, which developed the "Accelerator Fund" to spark innovation in the local workforce system, creating new opportunities for local organizations and AJCs to design programs (some of which that utilized technology) that accelerated skill development, employment, and reemployment. State program administrators reported that some AJCs were initially skeptical working with California's Employment Development Department (EDD) during the first round of selected grants. As one workforce board director described,

The first round was a trust exercise. They didn't believe this was real and they wouldn't get [penalized] for not succeeding. It was a big effort to work with EDD and not check regular boxes for [outcome] measures"

While the Accelerator Fund provided AJCs with "flexible funding" to test new, innovative ideas, some AJCs were initially cautious about how EDD would assess their performance in meeting key outcomes with target populations. To address these concerns, EDD coordinated with LWDBs and established a technical assistance (TA) team to market the Fund. The TA team carried out the message about the Accelerator Fund and reported back to EDD. They also provided guidance to AJCs on how to utilize funds and establish goals. These strategies have helped to build trust among AJCs, making the Fund widely popular across AJCs and local organizations. As the same workforce board director described,

We're funding the opportunity for local/regional entities to try this idea of bringing people together to come up with innovative solutions. This is unheard of in government to have flexible funding. We're finding it popular, and it's been largely successful.

3.4.2 TBL and Policies Regarding the Eligible Training Provider List (ETPL)

State workforce agencies also reported challenges regarding the inclusion of online and out-of-state training providers on the ETPL. Program administrators cited the two main reasons that keep these programs from being included on the ETPL – the lack of student-level data from the providers and high level of mandatory fees.¹⁷

Three state workforce agencies (California, Kentucky, and Utah) visited required training providers to share student-level data to gain access to their ETPL. However, most online and out-of-state training providers were unwilling or unable to provide such data. ETPL administrators in these states reported that some training providers were uncomfortable sharing student-level data or did not have the resources or capacity to create the required information. Another barrier mentioned by two of these states (California and Kentucky) was the mandatory fee (of \$2,500 to \$5,000) that training providers must pay to gain access to the ETPL. This barrier was of concern to state workforce agencies trying to assure providers in their own state were on the list, as well as state workforce agencies trying to establish interstate agreements with other states.

Overall, these ETPL administrators in workforce agencies felt that current policies regarding the ETPL focused primarily on brick and mortar providers and training resources, and thus prevented quality TBL providers from getting onto their ETPL and enrolling customers in training programs using WIOA funds. One ETPL administrator shared that barriers faced by online programs had prevented some providers from offering Salesforce, an in-demand program used to develop highly relevant occupational skills in the state. However, not all states faced these same challenges. As an ETPL administrator in Minnesota described, the process was a simple one, which allowed out-of-state providers to be automatically accepted in the ETPL if that provider had already been included on the ETPL in their own state.

3.4.3 Summary

State workforce agencies experienced two primary challenges in the provision of TBL: coordinating with AJCs in the implementation of TBL and negotiating the inclusion of online and out-of-state training providers on the ETPL. While state workforce agencies value the benefits of increased flexibility with TBL, some AJCs felt overwhelmed on how best to implement these options locally. Mutual trust between state workforce agencies and AJCs is also important in coordination efforts. How states build mutual trust and cultivate shared goals with AJCs around TBL use was critical for developing a strong foundation for sustained TBL engagement. Moreover, some states also expressed frustration with administrative requirements dealing with the inclusion of out-of-state and online programs on their ETPL. Shared access to student-level data as well as mandatory fees prevented these training providers from gaining access to the ETPL. Additional guidance on the inclusion of these training providers can reduce confusion and help expand TBL implementation efforts across states.

¹⁷ Under WIOA, training providers must have their programs reviewed and approved in order to be included on the ETPL and customers can use WIOA funds to pay only for training programs included on the ETPL. Each state develops its own guidelines and procedures for adding training providers on to the ETPL, including out-of-state and online providers.

4. Findings on Use of Technology-Based Learning in American Job Centers

This chapter documents the use of and experiences with TBL across nine American Job Centers (AJCs). The following text is organized by recurring themes identified across interviews with center directors, program managers, case managers, instructors, and partners.¹⁸ The chapter begins with an overview of TBL approaches used across AJCs to support the delivery of career services and then discusses the factors that influence AJCs’ decisions to adopt TBL, the resources available for staff and customers to utilize TBL, and barriers staff encountered in the implementation of TBL. The chapter ends with perceptions of TBL effectiveness and the benefits of TBL as reported by directors and staff.

4.1 Current TBL Approaches

This section describes the current use of TBL for workforce-related training and education across nine AJCs visited: Fall River Career Center in Massachusetts, Arlington Employment Center in Virginia, CareerSource Flagler-Volusia in Florida, Taylorsville and Lehi UT Unemployment Career Centers in Utah, Anoka County and Bloomington WorkForce Centers in Minnesota, WorkSource Portland Metro in Oregon, and the Inglewood South Bay One Stop and Business Career Center in California. The discussion focuses on how AJCs are using TBL to support and enhance learning and employment-related training across four skill areas: 1) employability or “soft” skills, 2) basic literacy and numeracy, 3) job search skills, and 4) technological literacy. The section begins with an overview of the TBL software commonly used by AJCs to support the designated skill areas and then ends with a summary of the instructional strategies and methods of delivery, including targeted groups for the delivery of TBL services. Appendix B provides a list of TBL software used in the AJCs visited for this study.

4.1.1 TBL Use in AJCs

Exhibit 3 presents the prevalence of software programs currently used by AJCs across three skill areas.¹⁹

Exhibit 3: TBL Software Used by Two or More AJCs Visited by Skill Area

Software Program	Basic Literacy and Numeracy	Job Search Skills	Technological Literacy
Khan Academy	✓		
Career Scope		✓	
Prove IT!		✓	✓
TORQ		✓	
O*NET		✓	
Mavis Beacon			✓
Learning Express Library			✓

¹⁸ To protect the privacy of respondents, we describe them as directors and staff, where appropriate, given the small sample of AJCs selected for visits.

¹⁹ The study team did not find any common tools in employability or soft skills reported by two or more AJCs visited.

- Three out of nine AJCs used Khan Academy to help improve customers' basic skills;
- Two AJCs used Career Scope, ProveIT!, TORQ, and O*NET to assist customers in developing resumes and/or finding jobs,
- Three AJCs used ProveIt! to improve technological literacy, and
- Three AJCs used Mavis Beacon and two AJCs used Learning Express to increase technological literacy.

TBL use in employability or soft skills varied considerably across the AJCs visited. There was not a common tool or platform used by two or more AJCs visited to improve soft skills. Two AJCs, one in Florida and another in California, developed their own tools in this area, three AJCs used tools supported by their respective states (Massachusetts, Oregon, and Utah), and three other AJCs (two in Minnesota, one in Virginia) used software such as Lynda.com, the Aztec Learning System, or Kahoot to deliver soft skills.

The list below offers a more detailed description on the TBL software listed in Exhibit 3.

- **Khan Academy** is an online repository of video recordings of short lectures on topics ranging from grammar and basic math to computer programming. Customers can watch videos and complete practice material on their own, or instructors can use the website to assign specified videos and practice exercises for students to complete at their own pace. The website also gives instructors the ability to track student progress.
- **Career Scope** is a computerized assessment that measures both aptitude and career interests to help guide customers in the career or educational planning process. The tool is self-administered and self-paced.
- **Prove It!** is an Internet-based program that offers assessments in a variety of skill domains, including Accounting, Clerical, Healthcare, Industrial, and Microsoft Office. It also provides self-guided online training tutorials for Microsoft Office.
- **TORQ** is an online tool that matches job seekers' skills and abilities with local job openings. The tool also recommends training programs based on knowledge, skills, and abilities.
- **O*NET OnLine** is an online database that provides detailed descriptions on nearly 1,000 occupations. The web application allows users to search for occupations according to their abilities and interests.
- **Mavis Beacon** is a software program used to teach keyboarding through a series of lessons, speed tests, and games. The program also provides detailed reports to help users identify strengths and weaknesses.
- **Learning Express Library** is a comprehensive set of online tools including practice tests, articles, e-books, and tutorials for improving basic skills among adult learners, high school equivalency, and college admissions and placement exams. Features include individualized study plans, time and untimed practice tests, and instant test and essay scoring.

Overall, the AJCs visited have adopted a diverse set of software programs and tools to help customers find, apply for, and keep jobs, increase basic literacy and computer skills. The next section explores

AJCs' instructional approaches for incorporating TBL into the delivery of basic skills and employment-related services.

4.1.2 Instructional Strategies and Methods of Delivery

AJCs have considerable flexibility in how they use technology to structure training and learning. One AJC may rely on a more traditional, blended approach to teach a basic computer skills course for re-entry/former offenders or older job seekers in need of digital literacy for employment.²⁰ Another AJC may rely exclusively on a technology-only approach that integrates games and interpersonal tools for youth in preparation for a General Educational Development (GED) exam. This section synthesizes leading definitions of TBL in the literature to provide a framework for examining the use of TBL in employability or soft skills, basic literacy and numeracy, technological literacy, and job search skills (and activities) across the AJCs visited for this study.

Three concepts (described in the textbox below) are important for understanding how AJCs use TBL approaches to support soft skills, basic literacy and numeracy, technological literacy, and job search: synchronicity, blendedness, and the role of the instructor. The following section discusses these approaches by focus area below.

Synchronicity: The extent to which students are engaged in learning independently and at their own pace (i.e., asynchronous) versus group-oriented instruction in which students are learning together (i.e., synchronous).

Blendedness: The extent to which a center uses technology in conjunction with traditional instructional methods. Strategies that rely heavily on TBL with minimal traditional educational input are “technology-focused,” while those that rely on TBL simply as a supplement to traditional instruction are “traditionally-focused.”

Role of the instructor: This categorizes a strategy as either instructor-led or one in which instructors are available to assist with TBL-based instruction. Instructor-led strategies rely on instructors to navigate course material, determining pacing and presentation of content. In the alternative approach, instructors are available to support students typically engaged in content-driven TBL instruction.

Employability or Soft Skills

AJCs used technology in a number of ways to help customers develop or enhance soft skills. These skills focus, but are not limited to, effective communication, teamwork, timeliness, and appropriate work conduct. Of the nine, five AJCs in Florida, Oregon, Virginia, including both AJCs in Utah used an asynchronous, technology-focused approach with limited instructor support in soft skills improvement. Under this approach, customers engaged with course content via a computer-based program that delivered instruction using videos to highlight different scenarios in the work place, interactive reading exercises, or practice quizzes. Customers also completed online modules within a resource center or from home at their own pace. Instructors were also present in resource labs or through a live chat service (as observed in one

²⁰ Blended models are those where instruction is delivered both using technology and in a traditional classroom (Gan et al., 2014).

AJC in Florida) to support customers as they completed online modules and to answers questions as needed.

For example, one AJC in Florida hired an in-house designer who developed a set of online training modules using *Articulate 360* software that included a Guide to Successful Workplace Habits. This narrated online course provided customers an overview of tips and advice on how to navigate the first 90 days on a job successfully. It also incorporated YouTube videos, one of which focused on the importance of cultural fit in the workplace. The online modules also allowed customers to send messages to other users.

In contrast, four other AJCs in Massachusetts, California, including both AJCs in Minnesota relied on a synchronous, traditionally-focused approach led by instructors to teach soft skills. Under this strategy, instructors used TBL resources such as videos or PowerPoint slides as a supplement to more traditional approaches. For example, one AJC in California developed its own course material, *Blueprint for Workplace Success*, which can be completed in a classroom or online. However, most AJCs delivered *Blueprint for Workplace Success* in a classroom setting as confirmed by the LWDB and center director. The curriculum includes several components, some of which include time management, effective communication, and skills for keeping a job. Instructors can incorporate videos and PowerPoint slides within a lecture to help customers develop soft skills.

Key Features of One AJCs' Asynchronous, Technology-only Approach

- Consists of self-paced, narrated online modules
- Includes quizzes to measure learning gains
- Includes live chat service to support customers
- Incorporates videos and scenarios to apply learning to real-world contexts
- Offers e-badges and certificates to incentivize customers
- Assigned to customers based on their individual needs

Basic literacy and numeracy

Across all nine AJCs visited, directors and staff referred customers requiring more intensive instruction or services to partners who utilized synchronous, traditionally-focused approaches to deliver basic skills training. Services were provided on-site at AJCs or through partners. Partners included community and state local colleges as well as high schools. For example, one AJC and its partners in Massachusetts used a synchronous, traditionally-focused approach in delivering basic skills training. *Career Ready 101* was used as a supplemental resource to traditional instruction to help customers develop basic skills.

Moreover, one AJC in Minnesota partnered with a local community college and high school and another AJC in Florida partnered with state colleges to deliver basic skills. Instructors incorporated videos and PowerPoint slides into lectures and utilized software such as *Khan Academy*, *Skills Tutor*, and *Burlington English* to supplement instruction for customers. The partnership allowed AJCs to access additional resources provided through the high school, in the case of Minnesota, and college.

Additionally, directors and staff in four other AJCs reported using software such as *Aztec*, *Kahoot*, or *Math is Fun* to supplement traditionally-focused instruction to improve basic literacy and numeracy.

Technological literacy

AJCs visited used three different approaches to increase technological literacy: 1) they offered basic computer classes on-site, 2) referred customers to partners with more resources, or 3) directed customers to build specific skills such as typing or Microsoft proficiency using self-directed online tools.

Three out of nine AJCs in Massachusetts, one in Minnesota, and Virginia offered basic computer classes on-site utilizing synchronous, technology-focused approaches that were instructor-led. Under this approach, instructors used computer-based software such as *Northstar*, in front of the class to demonstrate how to use a mouse or keyboard, and how to navigate screens. As a group, customers followed along at their assigned computer. Two AJCs, one in Florida and another AJC in Minnesota reported they no longer offered classes to build technological literacy skills due to state budgets cuts and low customer attendance. However, they referred customers to their partners, which included libraries, secondary schools and community colleges, or Goodwill. Lastly, directors and staff in the majority of AJCs (seven out of nine) in California, Florida, Minnesota, Oregon, Utah, and Virginia reported using ProveIt!, Mavis Beacon, GCF Learning Express Library or Lynda.com to help customers improve their typing skills or proficiency in Microsoft.

Job Search Skills

All of the AJCs visited provided training in job search skills. Services focused on helping customers learn how to develop or enhance their resumes, explore careers or interests, search for jobs that matched their career interests, and improve interview skills for employment. The majority of AJCs visited (eight out of nine) used synchronous traditionally-focused approaches in which instructors directed the pace and content of the coursework. Under this strategy, the TBL resource was included in a pre-existing workshop or instructor-led class that focused on skills related to finding and applying for jobs. For example, instructors at two AJCs in Minnesota and one in California conducted resume workshops that included different forms of technology each week to engage customers. In one week, the instructor delivered a lecture using PowerPoint on how to explore careers using online resources. In another week, the instructor used a more hands-on approach in one of the resource labs to show customers how to navigate the AJCs' online platform for developing their resumes and exploring careers.

All of the AJCs visited also offered their customers a variety of self-directed technological tools to find and apply for jobs. AJCs, including their partners (e.g., libraries, community and state college, and community-based organizations) reported using 25 software programs and tools. Some examples included *Career Scope*, *ProveIT!*, *TORQ*, and *O*NET*.

Additionally, directors and staff in two other AJCs in Minnesota visited offered job search assistance through partners. For example, one AJC partnered with *HireWire*, which is using technology in new ways that allows customers to demonstrate their skills beyond a paper-based resume. Customers can develop “skills demonstration” videos and embed them in their resumes to share with employers.

Lastly, another AJC in Florida developed its own software program to deliver job search assistance. The AJC used an asynchronous, technology-only approach whereby customers can access narrated online modules from within the AJC or from their homes on how to build a resume, stand out at career fairs, effectively manage the job search process, and improve their interview skills.

Finding and Applying for Jobs Using Hirewire

- Customers can develop “skills demonstration videos” and share them with employers
- Customers can include a QR code on their resumes
- Employers can scan the QR code to access a candidate’s completed profile and video

4.1.3 Target Populations

AJCs provided services to diverse groups of customers, which may include veterans, dislocated workers, youth, individuals with disabilities, ex-offenders, and several others. Some of the specific approaches AJCs used to deliver TBL services to these groups are discussed below.

It should be noted that the majority of AJCs visited (seven out of nine) generally did not differentiate TBL services for targeted groups as compared to the general pool of customers receiving career services. However, across all AJCs, veterans received priority for career services as required in the workforce system²¹.

Several AJCs also tailored TBL services for youth, re-entry/former offenders, and ESL populations. Four AJCs customized services for youth. An example of this can be seen in one AJC in Florida, which contracted with a non-profit that used TBL software such as *NearPod* and *Kahoot* with youth to help them develop both academic and soft skills. Both products used games and quizzes to engage youth in high school completion and improvement in basic literacy and numeracy.

Additionally, two other AJCs, including one in California, described how they worked with re-entry/former offenders populations. However, staff in California used a gradual approach of introducing technology with this group. Most services focused on how to set-up an email account, complete an online job application, or build an effective resume.

Two other AJCs used self-directed tools with ESL customers. AJC staff in Virginia reported using *USA Learns*, a website that helps customers to learn English and prepare for U.S. citizenship. Another AJC used *Accuplacer*, a system of computer-adaptive assessments that evaluate skills in reading, writing, and mathematics, with ESL populations.

4.1.4 Summary

The AJCs visited offer multiple examples of a diverse set of software programs and tools to build academic skills and help customers find, apply for, and keep jobs. Whether offered directly by AJCs or with partner agencies and providers, these software packages include programs that enable customers to work at their own pace and allow instructors to customize services for different learning styles. When implementing these TBL resources, AJCs use one of three instructional implementation strategies to address the needs of their customer: asynchronous (self-paced), technology-centric computer programs; synchronous traditional education environments with supplemental TBL resources; or classroom instruction that is technology-centric. However, most of AJCs and their providers and partners relied on synchronous, traditionally-focused approaches that are instructor-centric with supplemental TBL resources to help customers build academic and work-readiness skills.

²¹ Veterans receive priority for careers in accordance with “Priority of Service,” which focuses on “the specific rights that veterans and eligible spouses of veterans have in all employment and training services provided through the Department of Labor (DOL) funded public workforce system. Specifically, veterans and eligible spouses have the right to take precedence over a non-covered person in obtaining all employment and training services funded through DOL.” Additional information is available at <http://veterans.workforce3one.org/page/priority-of-service>

4.2 AJC Considerations in the Use of TBL

The process of selecting TBL strategies and approaches varies widely across AJCs. AJCs engage with multiple stakeholders in this process and consider a variety of factors when making these decisions. In this chapter, we first review the roles of key stakeholders in selecting TBL resources and strategies and the factors most relevant in decisions to adopt TBL among the AJCs visited.

4.2.1 The Roles of Key Stakeholders

Selection of TBL software and resources relies on the coordinated involvement of different stakeholders. Based on data we collected during site visits, this section identifies those stakeholders and their roles in that process. Across all nine AJCs visited, there were three approaches through which an AJC selected a TBL resource: 1) a center-driven approach; 2) a state-driven approach; and 3) a board-driven approach. While we use these three approaches as a framework to categorize the roles of stakeholders in decision-making about TBL, it is important to note that none of the nine AJCs relied exclusively on one approach when making decisions about the selection of TBL.

Center-Driven Approach

Three AJCs in Florida, Virginia, including one AJC in Minnesota, used a center-driven approach to decision-making about TBL strategies, in which AJC directors and staff exercised autonomy in the selection and purchase of TBL resources. Directors and staff at these AJCs reported that they were given very little guidance on implementing TBL from the state or the LWDB. Instead, directors and frontline staff identified software and TBL tools to integrate into courses, self-directed tasks, or workshop-based instruction. One AJC staff member described this approach, “These decisions are made primarily in-house. As of recently, staff pick the types of workshops that seem to fulfill customers’ greatest needs.” Other staff members also commented that engaging staff in TBL selection decisions was the most effective way to address customer needs. Along with understanding customers’ needs, one AJC in Minnesota reported engaging partner organizations in the TBL decision-making process, which included the local library and high school. In this partnership, the librarian conducted research about software packages that the AJC or library could purchase to deliver training.

State-Driven Approach

Three AJCs in Massachusetts, Oregon, and one AJC in Utah, reported that the state workforce agency made decisions about TBL resources. In Utah, TBL decisions were entirely top down from the state to the AJC. For instance, in Massachusetts, the selection of *Career Ready 101* represented a more collaborative process between the state, LWDBs and AJCs. The director of one AJC commented, “Most investments are done at the state level, which in turn coordinates with centers to see how investments align to the user base.” While the Massachusetts state workforce agency encouraged use of *Career Ready 101*, AJCs were allowed to select which online modules were used to meet the needs of customers and local employers. They also developed a shared funding strategy with AJCs in which the Massachusetts paid for the first three years of the subscription, and left AJCs to fund subsequent subscription renewals.

Board-Driven Approach

Three other AJCs in California, Massachusetts, and Virginia implemented a board-driven approach, in which LWDBs helped to select TBL strategies that were informed by employers. For example, one AJC in California recently implemented a curriculum called *Blueprint for Workplace Success* to help customers find and keep jobs. The development of *Blueprint for Workplace Success* was conducted primarily by the LWDB with input from over 100 local employers. As one LWDB manager described,

“We sat employers in a room and said ‘what do you want?’ We combined that with research to design the curriculum.” According to this manager, incorporating employers in this decision-making process was crucial as local boards “want to make sure that whatever [they’re] using is helping get folks employed.”

4.2.2 Factors Most Relevant in TBL Selection

In making decisions about software and resources, local decision-makers give weight to a variety of internal and external considerations. Discussions with directors and staff focused on three primary factors that influenced TBL selection: 1) costs for development and implementation, 2) the local labor market, and 3) customers’ accessibility to career services.

Costs

AJCs reported three primary factors related to cost. First, AJCs considered the costs of software when purchasing TBL products. Eight AJCs reported that they considered the cost of TBL software before purchasing it.²² One staff person explained, “We look at cost. If it’s free, great. If it’s not, then we have to make a decision if it’s worth the investment of energy and resources.”

Second, while most AJCs reported that the cost of technology was a barrier; two AJCs, one in Florida and another in Minnesota, reported that the benefits of efficiency and scalability of TBL software outweighed the costs. According to directors and staff at these AJCs, investing in online training allowed them to provide training to more customers while using fewer resources. For instance, one AJC in Florida used investments in technology to consolidate resources in response to state budget cuts. Due to a loss of staff from these budget cuts, this AJC transformed the delivery of its career services in the past year from in-person, instructor-led workshops to all online, self-directed workshops. As one staff member described,

[We] switched from in-person workshops to online workshops for multiple reasons. First, it was less expensive. Second, many individuals cannot visit [career] centers easily, so putting trainings online helped increase accessibility.

Lastly, four AJCs leveraged partnerships with external organizations in order to mitigate the costs associated with TBL. These AJCs developed partnerships with businesses, libraries, community colleges, and non-profits to reduce costs. For example, one AJC avoided direct costs of hardware by soliciting iPad donations from a local technology store. Another AJC partnered with the local public school system to provide an online curriculum focused on digital literacy and basic reading and math skills.

Local Labor Market

Directors at all nine AJCs noted that employer input and the local labor market were important factors in TBL selection. An important consideration was how well the programs aligned with employer needs, and whether TBL training imparted customers with skills that would be valuable to local employers. One way that staff tried to understand these needs was through labor market research as seen in efforts by three AJCs to conducting to identify occupations that had been and were likely to continue to be in high demand.

For instance, the LWDB and AJC in California worked with employers to customize training content for the jobs they had available. In these cases, AJC staff worked with employers to select online modules that

²² The other AJC reported that they did not make autonomous decisions based on cost because they had a designated budget established by the state to spend on training.

were most relevant to these employers' needs. One LWDB manager explained, "One of our employers is identifying how each module [of their e-learning software] is related to the skillset that [customers] need." Related to this, six AJCs, weighed the relevance of credentials and certificates from online learning platforms based on whether they would be recognized by local employers. As one AJC staff member said, "if you select [the software], but employers didn't know what that meant, it wouldn't be worth it." Two other AJCs developed curricula specifically to increase employers' involvement and engagement.

Accessibility

Four AJCs in Florida, Minnesota, California, including one AJC in Utah, considered the accessibility of TBL to customers in their decisions to select TBL software. For example, one staff member described the importance of selecting tools that were culturally appropriate for a multitude of customers.

I find that cultural differences are important to consider when choosing a tool. We live in a very diverse area, where one class of 25 students will have 17 different languages spoken. We seek tools that are culturally appropriate for everyone.

Similar to factors influencing TBL adoption in several states, at least one AJC explicitly selected its online modules to increase the access to TBL and career services among the many individuals residing in rural areas that did not have reliable transportation and could not attend in-person training at the AJC. TBL thus was a critical component in expanding the geographic reach of services to customers who were isolated or otherwise unable to access services.

4.2.3 Summary

The role of AJCs, LWDBs, and state workforce agencies in making decisions about TBL varied considerably across all of the AJCs visited. Some AJCs have relied on a top-down approach to TBL decision-making in which decisions came from the state, while others made decisions about TBL at the AJC- or board-level. However, these approaches were not mutually exclusive; AJCs that made most decisions about TBL autonomously also sometimes deferred to state mandates to implement a particular TBL approach. Moreover, the majority of AJCs considered the costs and labor market in the decision-making process, while fewer AJCs considered the accessibility of TBL approaches to customers. Moreover, there was a relationship between the AJC's decision-making approach and the factors that they considered when selecting TBL resources. AJCs that relied on the board-driven approach considered the needs of local businesses more heavily than other AJCs. Additionally, AJCs that made decisions in-house were more likely to involve staff and consider the needs of customers in the decision-making process.

4.3 Resources and Support for Effective TBL Implementation

This section examines customer-related supports and resources needed for effective TBL implementation. Three themes emerged from interviews on improvements to customers' technological (tech) readiness, as supported by the literature: 1) access to assistive technology tools, 2) assessments of customer readiness, and 3) staff-assisted support in computer and resource labs (Kemp 2002; Muse, Jr. 2003; Park and Choi 2009).

4.3.1 Access to Assistive Technology Equipment

All of the nine AJCs visited had some type of assistive technology equipment available for customers. Assistive technology included hardware and software designed to enlarge text. AJCs had screen readers on their computers or used a screen reading software such as Job Access With Speech (JAWS) or MAGic; these assistive technologies were the most utilized at the AJCs visited. One AJC had a Teletype

(TTY) machine available, which allowed those with hearing or speech impairments to communicate on the phone through typing and dictation. Moreover, all nine AJCs also referred customers in need of more intensive services to local partners such as libraries, community colleges, or a visually-impaired or vocational rehabilitation center for additional support. One AJC also utilized *LanguageLine*, an online translation service for ESL customers.

However, staff at one of the AJCs visited reported that they did not have enough computers available for customers with disabilities and needed additional licenses for JAWS software. For example, one AJC staff member mentioned, “We have one computer set up with JAWS, but we should have it everywhere, not just in the one computer that’s equipped with adaptive technologies.” On the other hand, staff at another AJC with designated computers for such populations found that they were rarely used by customers.

4.3.2 Assessments of Customer Tech Readiness

All nine AJCs visited assessed customers’ readiness for use of technology. The majority of AJCs (seven out of nine) assessed tech literacy by observing customers in computer labs or resource rooms as they completed assigned tasks, or signed up for AJC services during the regular triage process. In some ways, these observations proved to be more informative for staff than more formal assessment methods, especially for customers who were less forthcoming about their technical abilities. According to one AJC staff member:

We sit them down and say get to work at the computer. If they get to work we know they’re OK. If they start having computer questions, then we know they need help. Everyone doesn’t want to admit they have shortcomings in some of their computer abilities during intake. It’s once we put them in front of a computer, they can’t do it. Many people have trouble with computers, even if they’re good on smartphones.

Overall, directors and staff members reported that assessments of technological readiness were critical in determining the types of support needed for customers to thrive at the AJC. A staff member at one AJC spoke to the effectiveness of their assessment in enabling them to provide targeted support for customers:

You can’t just tell anyone who walks into the door to sit down at a computer. They may not even have even the most basic understanding. I think that our approach, being local and hands on and involved, gives us the opportunity to assess where each client is when they come through the door... If they are lacking in technical skills, or some people are technophobic, we’re able to provide testing on paper, if that’s the way that they’re better able to be served.

4.3.3 Staff-assisted support in computer and resource labs

Staff-assisted support was available in computer and resource labs in all of the AJCs’ visited. These staff provided support by answering questions as customers completed self-directed software programs or by providing one-on-one guidance as needed. As documented earlier (See Section 4.1), some AJCs (three out of nine visited) also offered customers basic computer classes on-site where instructors demonstrated how to use a mouse or keyboard, and how to navigate screens.

All of the AJCs emphasized how important it was for customers to have that one-on-one support. For example, one AJC staffed their resource room with instructors from partner agencies, which helped youth to improve tech literacy skills. According to one staff member:

The most effective way of serving customers with limited computer literacy is one-on-one, whether it is sitting down with someone the customer knows or with another staff member.

An AJC director emphasized the importance of staff-assisted support:

The proper software is very important, but none are absolutely necessary. It would be helpful to have more staff available to help customers without computer literacy.

In all nine AJCs visited, directors and staff reported that staff-assisted support in computer and resource labs provided customers with the individualized attention needed to build basic computer skills and access several online skills-building activities.

4.3.4 Summary

All of the AJCs visited had resources and supports available to assist a variety of customers with differing needs. These resources included access to assistive technology, assessments of tech readiness, and staff-assisted support in computer or resource labs. Staff members also provided on-on-one assistance and were available to answer questions as needed. Overall, directors and staff interviewed perceived these supports as critical for helping customers develop technological literacy.

4.4 TBL Implementation Barriers

This section reviews the barriers that AJCs face in TBL implementation, including those related to resources and capacity, customer skills, and staff readiness. Across each of these categories, the most common barriers reported by AJCs were the lack of technological literacy among customers, the costs of TBL implementation and associated lack of available computers and other hardware in AJCs.

4.4.1 Capacity-Related Barriers

AJCs encountered a number of capacity constraints that hindered their ability to implement TBL. These included implementation costs, a lack of technological equipment, limited functionality of existing equipment and software, and staff availability. The following section describes these constraints in greater detail below.

Costs

Directors and staff at the majority of AJCs visited (eight of the nine) reported there was a lack of funding and resources to implement TBL. Directors and staff indicated they had limited funds to purchase equipment, such as computers, and subscriptions to TBL software. For example, staff at five AJCs described how funding to purchase technological equipment and software had declined in the past few years, making it harder for them to purchase equipment and software subscriptions. Additionally, two staff members of these AJCs reduced the number of computers they had available to

"We have the will to do more technology at a higher level, but we can't because of resources. We want to see more virtual technology for example, but we can't do that, because we receive cuts every year. Keeping equipment up to date is one cost, and you have to look at that before you go straight to upgrading."

—AJC staff person, 2018

accommodate customers. For example, one AJC reported that budget cuts forced them to reduce staff and cut expenses by almost 20 percent.²³

These findings align with the current literature, which shows that upfront costs associated with course development and the implementation of new technologies were significant barriers to TBL adoption for local WIBs and AJCs (Gan et al., 2013).

Computer Capacity and Functionality

The majority of AJCs visited (eight out of nine) reported not having enough equipment to support customers' demand for services. Staff and instructors at three of these AJCs complained of inadequate computers in the resource rooms or computer labs. Customers often had to wait to use the computers, especially during peak hours. Similarly, AJCs (five reported) also commented that the lack of computers made it difficult to enroll customers in computer-based workshops and courses. For example, one instructor explained that his "Introduction to Computers" course was constantly at capacity.

We have eight openings every week, and every week it's booked. We have at times had to add in an additional class. It's a matter of space and time ... I would say more people need it than we can accommodate.

Staff also focused on the functionality of the other equipment available at their AJCs as a significant barrier to more extensive TBL use. For example, staff at two AJCs commented that they did not have enough headphones for the computers in their computer lab, which prevented customers from completing online courses or listening to videos in a shared computer space.

Additionally, three AJCs reported that their existing hardware and software was outdated. Staff mentioned that computers did not work, frequently broke down, or operated too slowly. For example, one staff member explained that it took her 30 minutes every morning to log into her computer. Another staff member at the same AJC reported that "the newest machine in the office [was] five years old." This same AJC also reported using VHS tapes in one of their programs because of a lack of newer technology available. Moreover, four other AJCs reported that TBL software used at their centers were also outdated and needed upgrading.

Staff Availability

Lack of sufficient staff also hindered TBL use in some instances. Directors at three AJCs reported they had too few staff to support customers' use of TBL in several instances. One staff member commented that instructors at the AJC were unable to teach workshops or monitor customers' usage of online training programs due to funding cuts which had resulted in staff being reduced from 40 full-time employees to 14. One director described one of the center's major challenges as "...not having enough staff to be able to implement the things you want to do," and the lack of any back-up staff since, "If you only have one person who teaches a class, you have to rely on that person."

4.4.2 Customer-related Barriers

Effective TBL implementation requires not only equipment and software, but it also depends on customers' readiness and ability to use the technology itself. Discussions with directors and staff across

²³ The study team was unable to collect complete information as to how TBL is funded across federal, state, and local levels.

all AJCs revealed that a large percentage of customers face significant barriers to TBL use, due to lack of technological literacy, but also to deficits in other skills, such as English language comprehension and literacy, and, in some cases, a lack of motivation to use technology.

Technological Literacy

Directors and staff in all nine AJCs visited reported that low levels of technological literacy was a particular barrier to TBL use, particularly acute among older customers, reentry/former offenders, veterans, individuals with disabilities, recent immigrants, and dislocated workers. Even some youth had difficulty using computers as noted by staff at two AJCs who reported that many young people were technologically savvy with smartphones, but had challenges using computers.

The level of such technological challenges varied, however. As noted by one staff member, some customers “haven’t seen a computer,” while others had some familiarity with computers, nonetheless “come in without basic skills to navigate job sites.” Some customers were also reported to have limited experience in sending emails and forwarding resumes, as well as working in Microsoft Word. These challenges posed particular barriers to customers’ use of self-directed e-learning curricula.

Limited English Proficiency

Most current TBL offerings at AJCs require basic levels of literacy and English language proficiency, making them inaccessible to populations that lack these basic skills. Five AJCs reported that ESL customers had difficulty using TBL resources. One director explained that most TBL software and tools were not available in different languages, particularly Spanish, since the center’s workshops were only available in English. Staff at two other AJCs explained that language barriers were especially difficult for refugee populations who often spoke a variety of languages.

Willingness

AJC staff at three AJCs visited reported that many of their customers were resistant to using technology. This was particularly challenging with chronically unemployed or Temporary Assistance for Needy Families (TANF) populations, as well as veterans, persons with disabilities, and others who face significant barriers to employment. One staff member reported,

Some reentry individuals are also resistant with technology because they haven’t been able to access it in the past. Certain disabled veterans don’t trust the government or technology and don’t want to provide personal information.

AJC staff also agreed that motivating customers required staff to show the value of these approaches. One staff person explained, “you have to convince them that these tools are helpful not hurtful.”

4.4.3 Staff-related Barriers

Effective implementation of TBL requires staff to support customers as they navigate online learning environments. This support role requires staff to be both motivated to use TBL approaches, and technically competent using computers and TBL software. AJCs faced barriers to implementation of TBL on both of these fronts, as reported by staff in the AJCs, similar to concerns expressed at the state level as well.

Four AJCs noted that some frontline staff members had difficulty with use of technology. At least some of these workers were reported to be less comfortable or motivated to use TBL approaches than younger

staff. One staff member noted that “more traditional, retired older teachers are more resistant to trying new things.”

Two AJCs also reported that some partner organizations were resistant to new technology. For example, one staff member reported that some partners were not all “bought into” the idea of adopting a new online skills training program for soft skill improvement, which created delays implementing the selected software in AJCs and partner sites.

Another barrier to TBL implementation was the lack of professional development. Directors at three AJCs reported they had few professional development opportunities available for their staff. Staff members at one AJC mentioned they explored TBL tools and products in the computer lab on their own time but had received little training or guidance on using it effectively. Another AJC explained that they operated entirely on grant funds, which prevented them from allocating additional money for professional development. An example of the lack of such assistance can be seen in the experience of one AJC, which was the beneficiary of state-purchased e-learning software but no time or training provided to staff to learn how to use it.

4.4.4 Summary of Findings

AJCs faced significant barriers to using TBL. These challenges included a lack of resources and technological capacity to implement TBL, as well as resistance to using TBL and a lack of technical competency using TBL from both customers and staff. The most commonly cited barriers to TBL implementation were limited tech literacy among customers, a lack of funding to support the costs of TBL approaches, and a lack of hardware and equipment at AJCs. Professional development was also reported as a challenge for AJC staff. Staff cited the lack of time, resources and number of staff as barriers to providing better training on TBL software. This is particularly challenging given the rapid change of software, which requires staff to be trained on new software and new upgrades on a regular basis.

Despite these challenges, AJCs have implemented strategies to overcome these capacity challenges. At one AJC that lacked a dedicated computer lab, they partnered with another organization who allowed them to host courses in their computer labs. Another AJC requested older computers from a nearby AJC that was closing to reduce costs. One AJC partnered with a local high school and library to provide basic skills training for customers. Some AJCs also had a designated IT-person who was able to optimize the number of working computers and other technological equipment available.

4.5 Satisfaction and Perceived Effectiveness

This section examines AJCs’ satisfaction with and perceptions of the effectiveness of TBL resources. We begin by discussing AJC staff perceptions of effectiveness and then summarize the benefits of TBL as discussed in AJCs.

4.5.1 Perceived Effectiveness

AJC directors and staff found TBL effective in improving customers’ tech literacy and job search skills. Staff at five AJCs visited described how TBL resources helped customers to improve basic computer skills and staff at four of the AJCs noted that the ability to use TBL resources, in their perspective, helped customers to become more employable.

Additionally, staff at three AJCs described how TBL resources were effective in helping customers in learning how to conduct job search activities. As a result of such learning, customers were able to benefit

in concrete ways: One AJC staff member described the reasons customers found TORQ useful for their job search. The staff member provided the examples of a customer discovered that his skills and interests were applicable to jobs in other settings and of another customer reported that he was able to use TORQ to generate good job leads.

Customers love it because it translates their skills and knowledge to other jobs they could apply for. Most job seekers ask why they didn't see that on day one. [...] It helps motivate people to search for jobs they wouldn't have otherwise thought to search for. We identify gaps in their skills for those occupations. It can also identify potential training opportunities for each identified occupation.

However, there were mixed reports from AJC staff (echoing some state concerns) about the effectiveness of educational software for soft skill improvement. Staff at three AJCs reported that TBL resources were helpful for developing soft skills, such as being on time and calling out sick. However, one state workforce board director and staff at four other AJCs seemed skeptical about whether TBL was the best method for teaching soft skills. These concerns were also reflected in interviews with AJC staff who believed that instructor interaction was needed to effectively to inculcate soft skills. Staff at one AJC reported they used a hybrid approach that integrated activities such as role plays or games into a traditional lecture based format supported by TBL elements.

Additionally, staff at five AJCs said that they wanted to expand TBL in the area of occupational training. At one AJC there was a desire expressed for more “credential-based, vocation-focused” material but as another staff person commented, “Some of the online training modules are not industry-specific, which may hinder effectiveness.”

Since the majority of AJCs refer customers to partners for basic skills training, directors and staff were unable to offer perspectives on the effectiveness of TBL in improving basic literacy and numeracy skills.

4.5.2 Benefits of TBL

Discussions with directors and staff at AJCs focused on three main benefits of TBL: 1) increased capacity, 2) greater flexibility to address local and customer needs, and 3) improved customer access to training services.

Expanding System Capacity

AJC directors and staff lauded TBL for its potential to increase the capacity of the workforce system. Since many AJCs lack capacity and resources to adequately provide training in a number of areas, technology-based programs have the potential to provide AJCs with the tools to help job seekers improve their skills in a time-efficient manner.

An example can be seen in AJCs in Utah, where, staff no longer had to spend time helping job seekers improve their basic computer skills as opposed to improving their job search skills. By creating an online computer skills workshop, Utah digitized one of the most time-consuming activities for employment counselors. This alleviated pressure on staff and allowed them to work with customers on job search activities.

Online learning also helped Utah accommodate larger caseloads during the great recession, when the number of customers surged. Higher-skilled individuals who did not need staff assistance in-person were able to access services online, which gave staff the time to focus on lower-skilled customers with higher

needs. Online workshops and services also helped to relieve the stress on their offices while meeting the higher demand for center services.

Flexibility

AJCs also described how TBL resources increased flexibility to address customers' needs. For example, various products and tools such as *Career Ready 101* in Massachusetts and *Blueprint for Workplace Success* in California can be used individually by customers or as part of a blended workshop with instructor facilitation depending on staff capacity or customer need; staff cited this versatility as a major strength of the TBL resource. AJC staff also explained how TBL resources increased flexibility of service delivery. Staff reported that TBL instructional resources provided more opportunities for individualized, self-paced learning. For example, one staff commented:

They [customers] appreciate the ability to go at their own pace, the opportunity to revisit material, live-chatting with an instructor, and watching videos, TED talks, and skits.

Accessibility

TBL also increases opportunities for customers to access state workforce services without having to travel to a physical location. Staff at four AJCs described how TBL provided customers with greater accessibility to the trainings they needed. TBL helped to overcome barriers such as transportation, child care, and conflicts with customers' existing work schedules. With online or computerized training, customers can access the training at times and/or locations that are most convenient for them.

4.5.3 Summary

The findings presented in this section highlight the benefits of TBL for states and AJCs. Four key findings emerged from discussions. One, AJC staff found TBL effective in helping to improve customers' tech literacy and job search skills. Two, TBL helped to help AJCs address skill deficiencies, which increased the number of customers served and the types of employment, education, soft and basic skills, technological literacy services customers can access. Three, TBL resources provided AJCs with greater flexibility to respond to customers' needs for career services. Lastly, TBL provided opportunities for remote access of workforce services, which increased the reach of workforce services to those customers with transportation, geographic, and time constraints.

5. Promising Strategies

The information in this report represents an initial step in identifying examples of how TBL is being managed and supported by state workforce agencies and used in AJCs to build employability or soft skills, literacy and numeracy, technological literacy and job search skills. Based on the concrete examples offered during the site visits, we identified five strategies for state workforce agencies and AJCs to consider in expanding use of TBL and making it more effective. These include:

- **Developing and Cultivating Partnerships.** State workforce agencies and AJCs established partnerships with libraries, community and state colleges, and community-based organizations to deliver TBL content, engage hard-to-reach customers geographically, and to fill gaps in TBL access. These partnerships helped expand the reach of the workforce system in delivering TBL-based services and promoted efficiency among different components in the overall public workforce system.
- **Increasing Remote Access and Broadband Coverage.** State workforce agencies piloted and implemented a broad array of strategies designed to increase customers' access to TBL as well as to improve workforce services more generally. These strategies include assessments of broadband coverage (to understand the depth of the challenges), newly designed mobile workforce centers and devices, new initiatives and funding for expanded broadband coverage, and partnerships with libraries, telecommunication companies and community-based organizations. By expanding broadband coverage, state workforce agencies were able to expand the geographic reach of TBL and also to career services for many groups that are often excluded from services.
- **Providing Professional Development Opportunities.** While it is difficult for state workforce agencies and AJCs to keep pace with new technology and build staff and instructor competency, providing ongoing professional development opportunities are important for engaging staff in effective use of TBL. To build instructional effectiveness, state workforce agencies and AJCs can consider a range of professional development opportunities. These include shadowing or observing instructors implementing TBL at other AJCs, facilitating learning groups or peer learning opportunities, or hosting "guest speakers" with knowledge of how best to integrate TBL within instructional content.
- **Engaging AJC Staff in the Selection of TBL Resources.** Along with professional development opportunities, executive directors at state workforce agencies and AJC center directors might engage staff in the selection of learning platforms, tools, and resources. This can help to ensure buy-in from staff and instructors, and keep them invested in learning new ways to incorporate TBL into other forms of instruction.
- **Building Staff Capacity to Support Customers' TBL Engagement.** AJC directors and staff reported that many customers had low levels of technological literacy, and that this was a significant barrier to effective utilization of TBL. In some locations, there was a need to increase the number of staff available in resource rooms or computer labs in AJCs, libraries, and schools to monitor and support students' transition into using online learning, and to encourage and motivate student progress. Murphy and colleagues (2017) recommended that ABE program administrators and instructors offer additional monitoring and support for students "struggling with the transition to online learning." They also advise training staff to gradually introduce TBL products and instructional strategies to this group to keep them engaged and motivated in learning. These strategies can be beneficial for customers with low levels of technological literacy in the public workforce system.

6. Summary and Conclusions

In this report, we have documented the current use of TBL in the context of employability or soft skills, basic literacy and numeracy, technological literacy, job search skills, and occupational training and certification across five states and nine AJCs visited. In the section below, we summarize the key findings from the analysis of site visit data and discuss prospects of TBL in the future.

Factors Contributing to the Adoption of TBL

Collectively, state workforce agencies and AJCs visited outlined several factors contributing to the adoption of TBL. First, understanding the local economic context (economic downturns or industry-specific shifts in the local economy) was critical in TBL adoption. Second, directors and staff recognized the need to close the skills gap that exists between the availability of jobs that require certain levels of education and skills and the number of clients who meet the requirements to perform the jobs.

In addition to helping customers attain additional skills and knowledge, TBL also allows workforce agencies to serve more customers and serve them more efficiently. Customers who live in more rural areas and live further from workforce centers may be able to access education and training from their homes or libraries rather than having to travel longer distances to AJCs.

TBL Strategies Pursued

State workforce agencies and AJCs have developed and implemented a diverse set of TBL programs, products, and tools. Most of the state workforce agencies developed new or expanded existing software and platforms that house a wide range of distance learning programs, many with highly interactive and flexible elements. Some state workforce agencies, such as Kentucky, were in an earlier stage of implementing TBL but had adopted an array of resources to reach a diverse customer-base. Several state workforce agencies had developed “scalable” systems that could be implemented across multiple AJCs to increase basic skills and some were making considerable progress replicating and evaluating TBL strategies. Also, in many states, partnership arrangements and collaboration led to other state agencies taking prominent roles in certain types of TBL, such as in the role of state adult education systems and public libraries in developing, deploying and sharing TBL to enhance literacy and numeracy skills, and in championing and funding improved connectivity, particularly for customers in rural and isolated areas with only limited transportation options.

AJCs also adopted a diverse set of software programs and tools to help customers find, apply for, and keep jobs, increase basic literacy and computer skills. This can be seen in the range of the over 40 different software programs identified by the study team to support the various areas for skill development. AJCs also were engaged in partnerships with local agencies and institutions such as libraries, community colleges, and adult education departments to provide access to and support in using technology-based training and education programs to the populations they serve. AJCs also often referred customers to various partners such as libraries, state and local colleges and community-based organizations to access these TBL programs.

Additionally, the information from this small sample showed that the roles of state workforce agencies, LWDBs, and AJCs were highly variable. Some state workforce agencies were far more involved in implementation and support of local AJCs, while others took a less directive role. However, these roles may shift as some states try to improve cost-efficiency by use of more online services, and as service demands in the workforce system shift due to improvements in the labor market.

Challenges Facing Staff and Customers

State workforce agencies and AJCs have experienced several challenges in increasing TBL in the workforce system. First, directors and staff in the workforce system have to buy-in to the changes that TBL requires. It may require staff training to administer TBL tools and resources. Some noted that it takes time for public workforce agencies to adopt new technologies, and they lag behind the private sector. Second, customers need the digital literacy skills to navigate the training and services available online and there are often constraints on the capacity of AJCs to spend additional time with clients who lack basic computer skills. Additionally, some AJCs lack sufficient funding, hardware and equipment, and professional development opportunities for providing and fully exploiting the TBL software that is available. Finally, while all the state workforce agencies visited allow online learning providers to be listed on eligible training provider lists, in some states the focus is more on brick and mortar locations and some ETPL processes appear to prevent most online providers from getting on the lists.

Looking Ahead

Overall, state workforce agencies and AJCs recognize the promise of TBL. It can allow workforce systems to more efficiently deliver services and it provides tools and services to more clients, helping to close the skills gap. However, it would seem that more research is needed on what forms of TBL are most effective. State workforce agencies and AJCs are spending substantial amounts to improve their platforms, purchase software programs, pay for online training, and train staff, but there is little research that shows whether these investments are paying off. Similarly, more systemic research may be needed to understand which types and features of TBL are effective, or could be made more so, for the varied customer groups in the workforce system.

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8. State Summaries

California

The State workforce agency makes a full suite of online training videos and tutorial related to job search skills available through its CalJOBS website. However, State leaders enacted the California Accelerator Fund (“the Fund”), which enables AJCs and local organizations to design programs that address their regions’ needs. While this initiative is not focused on TBL explicitly, the Accelerator Fund has sparked innovations in several projects that use technology to accelerate skill development, combined with other services to support employment or reemployment. This case study describes the Fund, promising strategies for effective implementation, and next steps for the state.

TBL Approaches for Training and Learning

- **The California Workforce Accelerator Fund** provides small, yet flexible grants to local organizations to test new ideas in addressing barriers to employment for target populations such as returning veterans, individuals with disabilities, low-income workers, CalWORKS participants, disconnected youth, ex-offenders, and immigrant job seekers (California Workforce Development Board, 2017). Several funded projects under this initiative have utilized technology to “accelerate” skill development, employment, and reemployment. For example, a recent accelerator-funded project between the Fresno Regional Workforce Development Board (FRWDB) and Mentored, an internet/mobile job placement technology firm, used a technology-supported coaching model to help CalWORKS participants and disconnected youth build work-readiness skills for employment. The model uses email, text, and phone communications that allow coaches to connect with customers from any location (California Workforce Development Board, 2017). This coaching model has been scaled and replicated in several regions throughout the state

Lesson Learned from California’s Workforce Accelerator Fund

- Allows local organizations to identify new areas of focus that prevent target populations from job placement
- Promotes collaborations with a diverse group of stakeholders
- Increases individuals’ access to services and support systems
- Helps to identify employers in the improvement of service delivery
- Additional information available at <https://cwdb.ca.gov/wp-content/uploads/sites/43/2017/03/WAF-at-a-GlanceV1.26.17.pdf>

Promising TBL Strategies for Effective Implementation

- **Increasing Local Control in the Design of Programs.** The state workforce agencies allows AJCs to design programs, including some focused on TBL, that best addresses the needs of their customers.

Future Plans

California’s overarching plan is to share best practices across its regions. Specific steps include holding webinars to showcase successful projects and replicating best practices throughout the state.

Kentucky

The Kentucky Workforce System is guided by a vision of decreasing the state's reliance on brick and mortar career centers and moving towards a model where customers can access career services from their homes and at other locations outside of AJCs. In alignment with this vision, Kentucky developed several TBL learning platforms and tools to help customers develop employment skills. This case study briefly describes these TBL approaches, promising TBL strategies for effective implementation, and next steps.

TBL Approaches for Training and Learning

Three tools are noteworthy of further investigation: 1) WIN Learning, 2) Focus/Career, and 3) the Kentucky Adult Education (KYAE) Skills U Lesson Bank.

- **WIN e-learning platform** helps customers develop soft skills needed to succeed in the workplace.
- **Focus/Career** allows customers to develop resumes, explore careers, and find best-fit jobs based on their skills and work experiences.
- **KYAE Skills U Lesson Bank** provides an online repository of lessons created by KYAE Skills U instructors.

Additionally, the state launched the **Teleworks USA program**. The program includes a system of “Hubs” across Eastern Kentucky that provides online and in-person skill building services and trainings to help prospective teleworkers land remote job opportunities.

Promising Strategies for Effective TBL Implementation

- **Engage employers.** Kentucky learns about employers' needs and uses this information to help guide TBL strategy and software selection. They encourage employers to use WIN software directly with their employees.
- **Promote Efficiency.** Kentucky developed a system that enables program administrators and employers to collect and monitor data to improve services.

Future Plans

Moving forward, Kentucky will also continue to decrease their reliance on brick and mortars by moving towards a self-service model. They also plan to roll-out a new case management system, KeySuite, in the fall 2018 that will enable customers to access career services remotely and through cell phones. The state also plans to set up local access points where individuals can receive employment assistance.

Key Features of Kentucky's WIN Soft Skill Courseware

- Consists of narrated online modules to help customers with diverse learning styles
- Includes pre-and-post tests to measure learning gains
- Incorporates videos and scenarios to apply learning to real-world contexts
- Offers e-badges and certificates to incentive customers
- Creates activity reports across multiple levels (e.g., county, center) to monitor student progress
- Additional information found at <https://www.winlearning.com/s/oft-skills.html>

“It doesn't seem like we should be having a conversation about whether you will engage in TBL, but rather how are you going to, and what are the tools that will make that most successful. It's not optional in 2018. There is no learning that isn't TBL.”

— State Interview, 2018

Massachusetts

In 2011, in the wake of the great recession, Massachusetts saw an increase in the volume of job seekers requiring career and Adult Basic Education (ABE) services. In response, the Massachusetts Workforce Development Board convened an interagency group tasked with finding a tool that could increase the workforce system's capacity to increase basic skills for jobseekers and improve job seekers' employment opportunities. State leaders required a new tool that was relatively inexpensive, did not require additional staffing, and could be used across multiple AJCs. Career Ready 101 was selected by state leaders as the most promising, cost-effective tool for helping to address the growing skills gap.

TBL Approaches for Training and Learning

- **Career Ready 101** is part of a statewide effort to increase basic literacy and employment prospects for residents. The tool is an online remediation system that helps customers identify their career interests, develop or enhance their resumes, and explore careers.

Promising Strategies for Effective TBL Implementation

- **Cultivating Key Partnerships.** The Massachusetts Workforce Development Board convened an interagency team to help select the TBL tool as well as drive implementation. This team included representatives from the workforce board, workforce community-based organizations, funders, economic development, and education at the K-12, postsecondary and adult education levels.
- **Building Consistency Across Diverse Systems.** In purchasing the Career Ready 101, Massachusetts selected a tool that would meet the needs of multiple workforce systems.
- **Engaging Career Centers Early in the Implementation Process.** To build support for Career Ready 101, Massachusetts engaged local WIBs and AJCs the year before its release. The state held a series of webinars that introduced the concept of the tool and why they were implemented. A state staff member also continues to provide customized technical assistance (TA) to AJCs on how they can improve their use of the tool to better assist customers.

Future Plans

Massachusetts is in the process of disseminating an online job aggregator tool from Burning Glass. They are also looking into products that will help customers gain exposure to certain fields, industries and are working with businesses to recognize the National Career Readiness Certificate (NCRC).

Key Features of Massachusetts' Career Ready 101

- Includes a resume builder
- Includes career exploration tools by category and skill
- Incorporates pre-and-post assessments by topic
- Incorporates the O*NET interest profiler
- Generates reports to monitor progress
- Enables customers to earn the WorkKeys National Career Readiness certificate
- Additional information found at [Career Ready 101](#)

"[CR101] has a lot of ways to connect people to next steps, gives power to Career Centers to get a handle on assessment tools, and also connects to remediation to meet job goals."

— State Interview, 2018

Minnesota

Concerns about Minnesota's growing skills gap prompted state leaders across various sectors to adopt TBL solutions to prepare residents for in today's global economy. Since the workforce system in Minnesota is part of a collaborative system, much of the TBL was developed under the Adult Basic Education (ABE) system, which has supported several TBL learning platforms to increase customers' access to basic skill training. Moreover, the Office of Broadband Development has led the charge of expanding broadband access throughout the state. This brief case study describes these TBL approaches, promising TBL strategies for effective implementation, and next steps for the state.

TBL Approaches for Training and Learning

The Virtual Task Force, comprised of ABE providers, purchased the following platforms for all ABE providers to expand distance learning opportunities and improve basic skills in the state.

- **Burlington English** is a computer-based program for ESL students, which provides hundreds of hours of English language courses online, as well as an interactive SpeechTrainer that works on students' pronunciation.
- **i-Pathways** helps students prepare for the GED, HiSET, and/or TASC exams through the completion of self-paced courses in reading and writing, science, and social studies.
- **Plato Learning Environment (Edmentum)** offers comprehensive online courseware including reading, math, social studies, and science. They also offer online learning for ESL students as well as Career and Technical Education courses.
- **Northstar Digital Literacy Assessment** is designed to identify digital literacy skills and highlight areas for improvement.

Key Features of Utah's Northstar Digital Literacy Assessment

- Assesses basic computer skills, including proficiency in Microsoft
- Provides customers with Northstar Digital Literacy Certificate when completed at approved sites

Promising Strategies for Effective TBL Implementation

- **Providing professional development opportunities.** The Adult Basic Education system as well as the Minnesota Literacy Council provides online courses, technical assistance, and other professional development opportunities to help instructors develop and expand distance learning programs.
- **Expanding broadband coverage.** The Office of Broadband Development awards grants to providers that can build, sustain, and scale internet service to areas without in hopes of meeting the state's goal of providing universal, high-speed internet access.

Future Plans

The Department of Employment and Economic Development (DEED) is in the process of creating a mobile-friendly, web-based platform through their receipt of a Workforce Innovation Fund (WIF) Grant. Scheduled to launch in October 2018, this web-based platform will integrate existing online learning resources with the state's labor exchange system and will create new opportunities for communication between employers and workforce partners.

"It's easy to assume that everyone knows how to use a computer, but that's not the case. We need to build digital literacy skills because that will be a deal breaker in the job market."

— State Interview, 2018

Utah

Utah's Department of Workforce Services (DWS) oversees 32 American Job Centers (AJCs) and 25 workforce and welfare programs. Among other TBL resources, DWS provides Utah residents access to online job search workshops, adult education material, and in-depth career assessments. This case study briefly describes these TBL approaches, promising TBL strategies for effective implementation, and next steps.

TBL Approaches for Training and Learning

- **DWS Online Workshops.** Accessed through Utah's state labor exchange, jobs.utah.gov, DWS created multiple online workshops on resume building, interviewing preparation, networking, and soft skills. Customers are referred to these workshops depending on results from a 24-question, online job search needs assessment.
- **Utah Futures.** Utah Futures is the state's online career information system providing labor market information, career assessments, resume and cover letter builders, and test preparation tools to all Utah residents.
- **Learning Express Library (LEL).** Developed by EBSCO and contracted through Utah Futures, LEL provides DWS customers with GED preparation and Adult Education material, Microsoft Word trainings, and workplace skills courses.

Key Features of Utah's online labor exchange

- Includes a mobile app to help search and target jobs by area
- Connects job seekers to unemployment, childcare, and refugee services
- Provides career assessments and training workshops on job search skills
- Includes online job searching with verified employers
- Additional information found at <https://jobs.utah.gov/index.html>

Promising Strategies for Effective TBL Implementation

- **Providing both remote and brick-and-mortar TBL services to AJC customers.** Program administrators reported that the provision of remote and in-person trainings helped to improve staff capacity and efficiency in service delivery.
- **Promoting a "pro-technology" organizational culture.** Program administrators found that a pro-technology culture, which involves encouraging staff buy-in to TBL tools and working with partners who support the integration of technology into service provision, was vital to TBL's effective implementation.
- **Reframing staff roles to meet customers' basic computer skills needs.** DWS reframed staff roles to ensure frontline staff could provide computer skills instruction to customers lacking these skills.

Future Plans

DWS plans to make all AJCs in the state comprehensive centers that are integrated with every core WIOA partner. DWS will also revise the curriculum of their online workshops over the next six months.

"Utah is invested in technology...Without this pro-technology culture, we couldn't do some of the things we're doing."

— State Interview, 2018

Appendix A: Data Collection Methods Regarding the Review of WIOA States

The data collected for this study comes from two sources: 1) a review of state WIOA plans and, 2) semi-structured interviews with management and staff at five states and nine AJCs. This appendix provides additional background on the process by which we reviewed state WIOA plans.

Review of State WIOA Plans

We searched 57 abbreviated state plans²⁴, including the District of Columbia and 6 U.S. territories, using keywords outlined in the previous memo sent on July 14th, 2017. We searched all state plans for the following terms:

- Technology-based learning
- Computer-based learning
- Web-based learning
- E-learning
- Online learning
- Distance learning
- Connectivity
- Digital literacy

In addition, the team found other terms that were used to describe TBL strategies. These included: assistive technology, blended learning, computer [literacy, skills, and skills training], e-literacy, and mobile, online [career, courses, curriculum, education, preparedness], recorded trainings, video technology, web portal, web-based system, webinar.

For each plan, we counted how many times the term was used, though we did not find this helpful in understanding the extent to which the state addressed TBL in their plans. However, searching the terms helped us to hone in on areas of the plan that could be reviewed. We also looked for examples from the plan that addressed the study's research questions.

²⁴ Including the sections focusing on Title I, Wagner-Peyser, and Adult Education.

Exhibit A.1 highlights which states in our search of state plans identified use of TBL in the specified areas in their plans.

Exhibit A.1: States Promoting TBL in Specific Areas

State	Employability or "Soft Skills"	Basic literacy and numeracy	Technological literacy *	Job Search Skills	Occupational training and certification
Alabama		✓			
Alaska		✓			
Arizona		✓			
Arkansas		✓			
California		✓	✓		
Connecticut			✓		
District of Columbia		✓	✓		
Hawaii					✓
Idaho		✓	✓		
Illinois			✓	✓	✓
Indiana			✓		
Iowa		✓			
Florida		✓			
Georgia					✓
Kentucky		✓			
Maine			✓		
Massachusetts		✓	✓		✓
Michigan	✓	✓		✓	✓
Minnesota		✓		✓	✓
Mississippi		✓	✓		
Missouri				✓	
Montana		✓			
Nebraska		✓	✓		✓
Nevada		✓		✓	
New Hampshire		✓			
New Jersey		✓		✓	
New Mexico			✓		
New York		✓	✓	✓	
North Carolina				✓	
North Dakota		✓	✓	✓	
Ohio		✓			
Oklahoma			✓		
Oregon		✓			
Pennsylvania			✓		
Rhode Island		✓	✓		

DATA COLLECTION METHODS RE: WIOA STATE PLANS

State	Employability or "Soft Skills"	Basic literacy and numeracy	Technological literacy *	Job Search Skills	Occupational training and certification
South Carolina		✓	✓	✓	
South Dakota		✓	✓		✓
Tennessee		✓		✓	
Texas			✓		
Utah			✓		
Vermont		✓			
Virginia		✓	✓		✓
Washington		✓	✓		
West Virginia		✓	✓		
Wisconsin			✓		
Wyoming			✓	✓	
American Samoa		✓			
Guam		✓	✓		
Northern Marianas		✓	✓		
Palau		✓	✓		
Puerto Rico		✓	✓		
Virgin Islands			✓	✓	✓

* Technological literacy was defined as any mention in the WIOA plan of a strategy to increase digital literacy

As this table shows, most states included some mention of basic skill improvement using technology and included some strategy for increasing digital literacy. There were fewer mentions of the other areas.

Appendix B: TBL Currently Used in States and American Job Centers

TBL Reported by States Visited

TBL Software	Source
Kentucky's Win e-learning platform	https://www.winlearning.com/
Teleworks USA	https://www.teleworksusa.com/
CareerReady 101	http://www.keytrain.com/careerready101.asp
Burlington English	https://www.burlingtonenglish.com/
i-Pathways	https://www.i-pathways.org/
Plato Learning Environment (Edmentum)	http://www.edmentum.com/
Northstar Digital Literacy Assessment	https://www.digitalliteracyassessment.org/
Learning Express Library	https://www.learningexpresshub.com/productengine/LELIndex.html#/learningexpresslibrary/libraryhome?aspxerrorpath=%2F
KYAE Skills U Lesson Bank	https://lincs.ed.gov/professional-development/resource-collections/profile-995
Focus/Career	https://focuscareer.ky.gov/careerexplorer/home
Utah's state labor exchange	https://jobs.utah.gov/index.html
Utah Futures	https://utahfutures.org/
TORQ	http://www.torqworks.com/
Study.com	https://study.com/
Nevada's Skills Online	Not available

TBL Reported by American Job Centers Visited

TBL Software	Source
Khan Academy	https://www.khanacademy.org/
Career Scope	https://va.careerscope.net/qibill https://www.benefits.va.gov/qibill/careerscope.asp
Prove It!	https://www.proveit.com/default.htm
TORQ	http://www.torqworks.com/
O*NET	https://www.onetonline.org/
Mavis Beacon	http://www.mavisbeaconfree.com/
Learning Express Library	https://www.learningexpresshub.com/productengine/LELIndex.html#/learningexpresslibrary/libraryhome?aspxerrorpath=%2F
Career Ready 101	http://www.keytrain.com/careerready101.asp
Blueprint	https://www.blueprinteducation.org/
Train Oregon	https://www.trainoregon.org/home
Work Success	Not available
Aztec	http://www.aztecsoftware.com/
Kahoot	https://kahoot.com/what-is-kahoot/
Math is Fun	https://www.mathsisfun.com/
Lynda.com	https://www.lynda.com/
Skills Tutor	Not available

APPENDIX B: TBL CURRENTLY USED IN STATES AND AJCs

TBL Software	Source
Plato Learning Environment (Edmentum)	http://www.edmentum.com/
Burlington English	https://www.burlingtonenglish.com/
NearPod	https://nearpod.com/
Articulate 360	https://articulate.com/360-ii
GCFLearnFree	https://www.gcflearnfree.org/
HireWire	https://www.stacknology.com/about.php
JAWS	Not available
MAGic	Not available
LanguageLine	https://www.languageLine.com/
USA Learns	https://www.usalearns.org/
Accuplacer	https://www.accuplacer.org/

Appendix C: Site Visit Protocols

Emerging State Policies on Technology-Based Learning Site Visit Guide

Introductory Statement: Thank you for agreeing to meet with us today. My name is [*First Site Visitor*]. [*Second Site Visitor*] and I work for [*MEF/Abt Associates*], an independent research firm contracted by the Employment and Training Administration (ETA) to conduct a study about the state policies on the use of technology-based learning (TBL). We know that use of technology in the workforce system is widespread for enrollment, case management, data and job listings. Our focus here today is different. Our study and this site visit concern the use of technology for training and learning in five primary areas – soft skills, basic reading and math, technological literacy, job search, and training and certifications. Also, technology-based learning in this research is primarily about the use of computers, computer-based programs, and various forms of connectivity. We will also touch upon the policies with regard to Eligible Training Providers, collaborations with other programs, and the remote access to TBL (e.g., increasing broadband coverage throughout the state).

Privacy Statement [*Interviewer must read this to all respondents*]: Before beginning the interview, I (we) would like to assure you that all of your responses will be kept private and used only for this research study. The interview is voluntary and you may choose not to answer any specific question and may stop the interview at any time. We have many questions and are going to talk to many different people, so please do not feel as though we expect you to be able to answer every question. The interview today should last about 90 minutes. This interview is not part of an audit or a compliance review. We are interested in learning about your ideas, experiences, and opinions about TBL. Please note that there are not right or wrong answers.

During our conversation today, we will take notes.

In addition, I want to let you know that although we will take notes during these interviews, information is never repeated with the name of the respondent in any reports or in any discussions with supervisors, colleagues, or anyone from DOL. There is a small risk of loss of privacy, but we have many procedures in place to ensure your information does not get lost.

Before we start, do you have any questions?

Introductions

I would first like to start by giving you and/or each individual a minute to introduce yourselves.

1. Please tell me your name and your title/position.
2. How long have you been working in this position?
3. What are your responsibilities in this position?

State Context

4. What are the states' goals with regard to using or implementing TBL?
5. Who makes decisions regarding the use of TBL? Is it the state/board/AJC?

6. In what ways does the state support the use of TBL?
[Probe for the following]
 - a. Soft skill improvement (e.g., study skills, communication skills, punctuality, personal maintenance skills, or professional conduct)
 - b. Basic skill improvement,
 - c. Technological literacy,
 - d. Seeking employment, and
 - e. Training and certification
7. What factors most influenced decisions to develop or adopt the use of TBL in the state?

State Policies/ Initiatives

We are interested in learning about state policies/ funded initiatives promoting TBL.

8. Has the state implemented policies or funded initiatives promoting TBL to support the development of **soft skills**? If yes:
 - a. What motivated the policy/ initiative?
 - b. Is there state funding for the policy/ initiative?
 - c. When was it implemented?
 - d. Do the policies/ initiatives target particular groups such as youth, veterans, or individuals with disabilities or low basic skills?
9. Has the state implemented policies or funded initiatives promoting TBL to improve **basic skills**? If yes:
 - a. What motivated the policy/ initiative?
 - b. Is there state funding for the policy/ initiative?
 - c. When was it implemented?
 - d. Do the policies/ initiatives target particular groups?
10. Has the state implemented policies or funded initiatives promoting TBL to improve **technology literacy**? If yes:
 - a. What motivated the policy/ initiative?
 - b. Is there state funding for the policy/ initiative?
 - c. When was it implemented?
 - d. Do the policies/ initiatives target particular groups?
11. Has the state implemented policies or funded initiatives promoting TBL to improve **job search skills (e.g., resume preparation, job applications, interviewing)**? If yes:
 - a. What motivated the policy/ initiative?
 - b. Is there state funding for the policy/ initiative?
 - c. When was it implemented?
 - d. Do the policies/ initiatives target particular groups?
12. Has the state implemented policies or funded initiatives promoting TBL to increase **training and certifications**? If yes:
 - a. What motivated the policy/ initiative?
 - b. What type of training is encouraged (e.g., particular sectors)?
 - c. Is there state funding for the policy/ initiative?
 - d. When was it implemented?
 - e. Do the policies/ initiatives target particular groups?

Collaborations with Partner Agencies

13. Has the state collaborated with any agencies or partners (e.g., adult education or community colleges) to promote and support the use of TBL? If yes, can you describe the type of partners involved in facilitating TBL? [Probes]:
- The selection of TBL platforms
 - Content delivery
 - Participant access and use

Software Programs/ Databases

14. Does the state encourage the use of particular databases with information on TBL programs (e.g., Skills Common)? If yes, are there any challenges? [Probes]:
- Are the databases accessible to AJCs?
 - Are they up-to-date?
 - Are there any problems with maintenance and the underlying systems?

Eligible Training Providers

15. Are there policies pertaining to use of TBL in the selection of Eligible Training Providers?
16. What is the nature and extent of reciprocal interstate agreements with regard to ETP and the use of TBL?

Remote Access

17. Can you tell me about the level of connectivity across the state? For example, do you have a strong broadband connection throughout the state or is it limited in some rural areas?
18. Are there promising strategies that have been implemented to increase remote access to TBL (e.g., increasing broadband coverage in an area, developing partnerships with community sites such as libraries and schools)?

Monitoring Use/ Effectiveness

19. Do you collect information on the use of TBL in the workforce system? If so, can you tell me about the types of information you collect and how it is used in the state?
20. Do you believe the TBL services are effective? If so, what has been most effective, and why?
- How do you monitor uptake and/or utilization of TBL services in the development of soft skills, basic skills, and computer/technology skills?
21. Are there promising strategies that have been implemented in particular local areas?

Conclusion

22. Is the state planning on any expansions or changes to policies regarding TBL?
23. What are the main challenges for the state to implementing any TBL policies or initiatives?
24. What strategies, if any, have you implemented to address these challenges? Was this effective? Why/not?
25. What key supports or resources need to be in place for successful implementation of TBL program/practices at the state or local level?
26. What concluding thoughts would you offer (from your perspective) on the value of TBL in the workforce system?

- a. What advice, recommendations, and suggestions do you have for other states looking to implement TBL?

Thank you for your assistance in completing this interview and providing important information for the study. We appreciate the information you've shared with us today.

Technology-Based Learning in American Job Centers Site Visit Guides

Study of Technology-Based Learning in American Job Centers Site Visit Guide (Center Director/Manager)²⁵

Introductory Statement: Thank you for agreeing to meet with us today. My name is [*First Site Visitor*]. [*Second Site Visitor*] and I work for [*MEF/Abt Associates*], an independent research firm contracted by the Employment and Training Administration (ETA) to conduct a study about the use of technology-based learning (TBL) in American Job Centers. We know that use of technology in the workforce system is widespread for enrollment, case management, data and job listings. Our focus here today is different. Our study and this site visit concern the use of technology for training and learning in four primary areas - job search, soft skills, basic reading and math, and technological literacy. Also, technology-based learning in this research is primarily about use of computers, computer-based programs, and various forms of connectivity. We will also touch upon other forms of hardware and even some other forms of technology used in teaching and learning.

Privacy Statement [*Interviewer must read this to all respondents*]: Before beginning the interview, I (we) would like to assure you that all of your responses will be kept private and used only for this research study. The interview is voluntary and you may choose not to answer any specific question and may stop the interview at any time. We have many questions and are going to talk to many different people, so please do not feel as though we expect you to be able to answer every question. The interview today should last about 90 minutes. This interview is not part of an audit or a compliance review. We are interested in learning about your ideas, experiences, and opinions about TBL. Please note that there are not right or wrong answers. We simply want to know what you think.

During our conversation today, we will take notes. However, information is never repeated with the name of the respondent in any reports or in any discussions with supervisors, colleagues, or anyone from DOL. There is a small risk of loss of privacy, but we have many procedures in place to ensure your information does not get lost.

Before we start, do you have any questions?

Introductions

I would first like to start by giving you and/or each individual a minute to introduce yourselves.

1. Please tell me your name and your title/position.
2. How long have you been working in this position?
3. What are your responsibilities at the AJC?

AJC Context and Administration

4. Tell me about your center. Can you describe the types of in-house training activities available to customers at your center? (Whether provided with technology or not). [*Probe(s)*]

²⁵ The study team developed separate protocols for directors, staff, and instructor. We have included only the center director protocol in the report since the other protocols (i.e. staff and instructor protocols) have been modified from this version.

- a. How many people served in-house, on average over a month (that would include basic, individualized and training participants)?
- b. And about how many get individualized services? And training?
- c. Would you know about how many are self-service (but are “reportable”)?
- d. Would you say your center serves an urban, rural, suburban, or mixed group?
- e. Does it cover a wide or small geographic area?
- f. Can you tell me about the mix of people you serve here? For example, do you see a lot of dislocated workers, new entrants, disadvantaged adults, veterans, or people with disabilities?
- g. Can you tell me about the people you tend to serve in terms of demographics?
- h. Similarly, can you tell me about the educational levels of most of the people served?
- i. Typically, what are the main industries in this area? Are they growing or declining?
- j. How high has the unemployment rate been in this area in the last year or so?

I'm interested in first learning about the on-site training or learning activities available to customers at your center.

5. Many AJCs provide courses or workshops to teach participants job search skills, soft skills related to work readiness, use of computers, and sometimes basic reading or math skills. Can you describe the types of in-house training activities available to customers at your center? (Whether provided with technology or not).
6. Who makes decisions about the types workshops or courses available to customers?
 - a. [Probe] Is it mostly the Board or the AJC staff?
7. Does your Center generally provide any of these workshops or courses using TBL? By TBL, we mean any teaching and learning programs and practices that use electronic technology. This can include online courses, live or recorded video or audio, use of educational software (with simulations or game-like elements), as well as a variety of hardware options, such as desktops, laptops, tablets, and smartphones.
 - a. To what extent is TBL integrated into occupational training?

Partnerships

8. Does your center provide some TBL with partners? If so, can you describe the type of partners (e.g., community and technical colleges, libraries, employers, etc.) involved in facilitating TBL use within AJCs?
 - a. Do some of these partners provide access to TBL courses nearby?
9. How, and to what extent, does the center collaborate with partner organizations to promote the use of TBL?

[Ask all probes if relevant]

- a. The selection of TBL platforms
- b. Content delivery
- c. Participant access and use

Hardware and Connectivity

Now, I'd like to ask you a few questions about connectivity and hardware.

10. [This question could be asked during the tour] What type of hardware and other equipment do participants routinely use to support training in the areas of skills just discussed (soft skills, basic skills, technological literacy/basic computer skills)?
- How do customers typically access TBL hardware and other equipment (e.g., computer lab, classroom, etc.)?
11. Do you feel there are enough computers for providing technology-based training? Is there competition with use of computers for other activities (such as for intake, job search)?

[Ask all probes below]

- Do you feel these computers accessible to customers are up-to-date?
 - Are there any problems with maintenance of the computers and the underlying systems?
 - Do you use other technology, such as projected videos or slides, for in-house training?
 - Can you tell me about the level of connectivity, for example, do you have a strong broadband connection here?
 - Do you feel you have adequate connectivity in regard to computer-based training programs? If not, what types of problems do you experience?
12. What type of software and/or TBL infrastructure has your center invested in to support the delivery of training in soft skills, basic literacy and numeracy, technological literacy, or job search skills and knowledge (e.g., mobile applications, webinars, online discussion boards, etc.)?
13. What improvements would be of most help to you in providing access to more technology-based learning programs? Would those improvements allow you to offer more sophisticated programs in house?
14. Finally, do you know if computer-based training is used with any youth programs in contracts with your workforce area?
- Are contracts with the board or AJC? If with the AJC: can you tell me something about these contracts?

TBL Approaches

Let's now discuss in greater depth how you are using TBL to support or enhance your center's training and learning activities in the skill areas you mentioned earlier in our discussion.

15. [Soft Skills] First, let's talk about the ways your center uses technology-based approaches to develop employability or work readiness skills, also called "soft" skills (e.g., interpersonal and communication skills, punctuality, time management, personal responsibility, and other standards of conduct in the workplace). Do you have any programs for such skills that use TBL? Can you describe them?

[Ask each probe below, if relevant]

- Is there a specific program you use?
- How long do they typically last? About how many individuals take these classes over the course of a year?
- Are these longstanding or new programs? Have these changed in the last few years?
- About how many people participated in these programs in the last year?

- e. Are these courses provided in-house by your own staff? Or are they delivered primarily through partner agencies? (If so) Which ones?
 - f. Do you monitor the use of these programs on-site or remotely? If so, what strategies are used to monitor the use of these programs?
 - g. Can you describe the strategies, tools, or products?
 - i. Probe for specific names of products and key features, such as animation, simulations, game-like elements, badges.
 - h. How would you describe your center's approach for integrating TBL tools or products in soft skills training?
 - a. Are TBL tools predominately instructor-centric, with a teacher or expert at the core who delivers a lecture? If so, please describe.
 - b. Are TBL tools content-centric such that students interact individually with content embedded in a learning system? If yes, please describe.
 - c. Are they customer-centric, whereby the student is the navigator, driving the content and pace? If yes, please describe.
16. **[Basic Literacy and Numeracy]** Does your center use TBL to build basic reading and math skills (e.g., Adult basic education, GEP Preparation courses, or English as a second language, or any career pathways programs that build up basic reading and math skills in the context of occupational training?)
[Ask each probe below]
- a. What programs do you offer?
 - b. About how many individuals took these classes over the course of the last year? Which ones had the highest enrollments?
 - c. Are these long-standing programs or have there been any recent programs or initiatives that use TBL to support the development of basic skills?
 - d. Where are the courses provided – on-site here or at another location?
 - e. Are these courses provided in-house by your own staff? Or are they delivered primarily through partner agencies? If so, who delivers them?
 - f. Do you monitor the use of technology in these programs on-site and remotely? If so, what strategies are used to monitor use?
 - g. Are these courses provided in-house by your own staff? Or are they delivered primarily through partner agencies? If so, who delivers them?
 - h. What are the technology-based tools, or products? Probe for specific names of products and key features
 - i. How would you describe your center's approach for integrating TBL tools or products in basic skills training?
 - a. Are TBL tools predominately instructor-centric, with a teacher or expert at the core who delivers a lecture? If so, please describe.
 - b. Are TBL tools content-centric such that students interact individually with content embedded in a learning system? If yes, please describe.
 - c. Are they customer-centric, whereby the student is the navigator, driving the content and pace? If yes, please describe.
17. **[Technological literacy or Basic Computer Skills]** Now I'd like to turn to technological literacy, i.e. computer skills themselves. Can you tell me if you initially try to determine if customers are adequately prepared to use TBL tools and platforms?

[Ask each probe below]

- a. If so, what types of assessments of technological readiness or fluency do you use?
- b. Can you estimate how many customers lack basic computer skills in the last year?
Approximately what percentage of your customers needed help in this area?
- c. Do you offer any workshops or classes to improve technological literacy or basic computer skills so that participants can access information and other training course?
 - i. What types of workshops or course do you offer to build technological literacy?
 - i. Probe for specific names of products and key features.
 - ii. Are these longstanding or recent programs or initiatives?
 - iii. Are these programs generally used on-site or in other locations? If not on-site, how do you track use of the programs?
- d. Do you also offer computer skills courses at a higher level, such as training on Microsoft Office or other programs?
- e. Are these programs offered by in-house staff, contractors, or partner programs or agencies?
- f. Do you monitor the use of these programs on-site or remotely? If so, what strategies are used to monitor the use of these programs?
- g. How would you describe your center's approach for integrating TBL tools or products in technological literacy/basic computer skills?
 - i. Are TBL tools predominately instructor-centric, with a teacher or expert at the core who delivers a lecture? If so, please describe.
 - ii. Are TBL tools content-centric such that students interact individually with content embedded in a learning system? If yes, please describe.
 - iii. Are they customer-centric, whereby the student is the navigator, driving the content and pace? If yes, please describe.

If the center does offer workshops/courses in basic computer skills or other computer courses:

- h. If not, why don't you offer them? (Probe: Is it because of a lack of resources – or because it is not needed, i.e., most participants can already use computers? Or is it because the customers who do need it, have other learning problems?)

18. [Job Search Skills] I'd like to ask you about how technology-based learning is used to build knowledge and skills for job search (this includes how to prepare resumes search for job openings, input job applications, interviewing or other self-marketing skills)?

[Ask each probe below]

- a. Can you describe the types of workshops or course you offer and how you use technology in delivering that training?
- b. How long does such training typically last?
- c. Are these long-standing programs or have there been any recent programs or initiatives that involve increased or different uses of TBL in these workshops (or courses) regarding these job search skills?
- d. Are these workshops or courses led by in-house staff (or contractors)? Are they delivered primarily through partner agencies?
- e. What are the tools, or products? Probe for specific names of products and key features

- f. Do you monitor the use of these programs on-site or remotely? If so, what strategies are used to monitor the use of these programs?
- g. How would you describe your center's approach for integrating TBL tools or products in job search?
 - i. Are TBL tools predominately instructor-centric, with a teacher or expert at the core who delivers a lecture? If so, please describe.
 - ii. Are TBL tools content-centric such that students interact individually with content embedded in a learning system? If yes, please describe.
 - iii. Are they customer-centric, whereby the student is the navigator, driving the content and pace? If yes, please describe.

Supports for TBL Instruction

I would like to learn more about the supports offered to customers on how best to use TBL products and tools, including any supports and training available for specific target populations.

- 19. What types of training or support is available to ensure that customers can thrive in a TBL environment?
 - a. Is there a formal orientation/training available on how best to use TBL tools for customers?
 - b. Do you utilize any assistive technology tools? If so, can you describe these tools?
 - i. [Probe(s)] Screen readers such as iPhone's VoiceOver or Android 4.0's TalkBack, or closed captions for online videos that require additional technical assistance
- 20. What types of training, tools, or support is available to instructors to ensure that they can productively integrate technology into their instruction?
 - a. Has your center offered any professional development services related to TBL use to staff? If yes, please describe the services offered and the purpose of each service.

Target Populations and Programs

- 21. Are there specific training strategies you center uses that involve for TBL targeted at specific populations such as youth, veterans, or individuals with disabilities or low basic skills?
 - a. Who oversees the implementation of TBL strategies for youth?
[If veterans are mentioned, use the following probe]
 - b. How is TBL used to support or enhance soft skills, basic skills, or computer/technology skills for veterans? How does it differ from other core and intensive services?
- 22. How is the delivery of TBL-related content structured for customers with different skills and needs? Do you prioritize TBL differently for these customers:
 - a. A customer with little or no experience with computers or software
 - b. A customer who is significantly below the 9th grade level in both reading and math
 - c. A customer with difficulty mastering soft skills (e.g., communication, punctuality, etiquette in the workplace, etc.)
- 23. What types of training, tools, or support is available to individuals with disabilities to ensure they thrive in a TBL environment?
- 24. What types of training, tools, or support is available to individuals that require additional remediation in math and reading?

Perceived Effectiveness

25. In general, do you monitor uptake and/or utilization of TBL services in the development of soft skills, basic skills, and computer/technology skills? If so, how?
26. Have you received any feedback from students, employers, or any other stakeholders about the quality of TBL offered? If so, please describe the type of feedback received.
27. What do customers find most appealing or useful about TBL? What do they find challenging?
28. What do instructors find most appealing or useful about TBL? What do they find challenging?
29. I'd like to get your overall views and impressions on the effectiveness of TBL for your in-house workshops or courses. To what extent do you think use of technology-based learning programs or activities are helpful in improving customers' skills related to basic workplace, literacy basic skills, or computer/technology skills?
 - a. What do they offer that prior methods didn't?
 - b. Do you think they are more effective or about the same?
 - c. How do they support the learning needs of customers?
 - d. What has been most effective about these programs?

TBL Decision-making

30. How are decisions made regarding the use of TBL in the delivery of these services?
[If unclear, use probes below]
 - a. Is there a specified decision-making process? (e.g., top-down from the Board or bottom-up from instructors who request certain technology)
 - b. Do you have a manager and/or director solely responsible for TBL?
 - c. [If Board is involved in decision-making] To what extent is your local Board involved in decisions to integrate TBL tools or products within the center's suite of core and intensive services?
 - d. Which staff members are involved in making decisions about TBL tools and strategies used to support career services?
 - e. What are the roles of federal/regional/local institutions, partners, students and instructors?

TBL Development and Adoption

31. What factors most influenced decisions to develop or adopt the use of TBL (e.g., costs, students' skills/abilities, etc.)?
[Use probes below, if discussed]
 - a. Cost (related to equipment or availability of funding for hardware)
 - b. Student readiness
 - c. Instructor/staff readiness
 - d. Support for IT
 - e. How do these factors differ from other career services that do not incorporate TBL components?

Perceived Challenges

32. Based on your experience, what are the main challenges to implementing any TBL program/practice in your center? Are there challenges that are unique to using TBL for career services?

[Use probes below for each focus area]

- a. Soft skills
- b. Basic literacy
- c. Technological literacy/basic computer skills
- d. Job search

33. What strategies, if any, have you implemented to address these challenges? Was this effective? Why/not?

34. What challenges did you face as a center director/manager?

Lessons Learned

I would like to end our discussion today on reflections and lessons learned from your involvement with TBL.

35. Would you change (expand/eliminate) any of the TBL services, products, or tools available offerings if you could? If yes, in what ways?

36. What key supports or resources need to be in place for successful implementation of TBL program/practices in AJCs?

- a. Which supports or trainings for customers are most effective for implementation? Why?
- b. Which supports or trainings for academic instructors are most effective for implementation? Why?
- c. What supports do you need as a center director/manager?

37. What concluding thoughts would you offer (from your perspective) to other centers who are implementing new TBL programs or practices?

- a. What advice, recommendations, and suggestions do you have for other Center Directors to implement TBL in soft skills, basic skills, and technological literacy?

Thank you for your assistance in completing this interview and providing important information for the study. We appreciate the information you've shared with us today. With your help, we will have better information about the use of TBL services within AJCs.

Appendix D: Survey

Survey Questionnaire

Technology-Based Learning (TBL) in American Job Centers

Dear AJC Manager:

The U.S. Department of Labor's Employment and Training Administration (ETA) is conducting a survey on how American Job Centers (AJCs) use technology-based learning (TBL). The survey focuses on use of TBL for teaching pre-vocational and job search skills, **not** on its use in occupational training. The information you provide will be critical in gaining a systematic understanding of how TBL is used on the front lines of the workforce system and will be important for planning and policy purposes.

Completing the questionnaire will take about 25 minutes. Please feel free to consult with other staff as needed in filling it out. Also, please note that your responses will be kept confidential; they will be combined with those from other AJCs and shared only in the aggregate in all reports and communications with ETA.

We very much appreciate your time and effort in filling out this questionnaire, and thank you in advance for helping this important research. Many thanks for completing it!

- The Division of Research and Evaluation, Office of Policy Development and Research, Employment and Training Administration, U.S. Department of Labor

Note: The survey is being conducted by the Employment and Training Administration (ETA) under OMB Control # 1205-0346. ETA's Division of Research and Evaluation (DRE), with input and support from the relevant program offices in ETA, is directing the survey, which is being administered by the research firm, Abt Associates, and its partner, MEF Associates. Your identity and that of your center will be kept private, and will not be shared with ETA, to the extent permitted by law. If you have any questions or comments regarding this survey, please contact DRE staffer, Charlotte Schifferes, at: schifferes.charlotte@dol.gov, or 202/693-3655.

Section I: Identification and Center Characteristics

What is the name and location of your AJC?

Name of your AJC: _____

Street Address: _____

City/State: _____

What is your role at the AJC? _____

What is your email address? _____

What type of area does your AJC serve? Check all that apply.

- Urban
 Rural
 Suburban

About how many customers (participants and reportable individuals) did your AJC serve in PY 2016 (ending June 30, 2017)? _____

Definition:

In this survey, technology-based learning (TBL) is defined as teaching or learning activities that use electronic technology, including:

- Computer-based classes or workshops that may be offered online, at your AJC, or other partner;
- Educational software with simulations or game-like elements; and
- Live or recorded video or audio.

We are interested in the use of technology-based learning in the following skill areas:

- Employability or basic “soft” skills (e.g., punctuality, communication);
- Basic reading and math below the 9th grade level;
- Building job search skills (e.g., instruction on how to write a resume, interviewing, find job openings); and
- Technological literacy/basic computer skills.

1. In the past 12 months, did your AJC offer access to technology-based learning in the following skill areas? Check all that apply.

- Employability or basic “soft” skills
 Basic reading and math below the 9th grade level
 Building job search skills
 Technological literacy/basic computer skills
 Other: (Please specify)
 None - we do not offer technology-based learning, including online classes, computer-based classes or workshops, or access to educational software **[Skip to VERSION B, Question B2]**

VERSION A of Questionnaire**Section II: Self-Directed Use of TBL**

2. Many AJCs and their partners provide access to technology-based learning that is self-directed and does not require any staff assistance. Examples include online self-paced courses, recorded sessions, or video tutorials that are delivered without staff involvement. Please indicate how customers obtain access to self-directed TBL for each of the skill areas below. Check all that apply.

	We do not offer self-directed TBL in this skill area	Self-directed TBL is offered, customers must meet with AJC staff to obtain registration information before accessing this service	Self-directed TBL is offered, any customer can access this service without meeting with AJC staff
Employability or basic “soft” skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Basic reading and math below the 9 th grade level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Building job search skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Technological literacy/basic computer skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[Skip to Question 6 if AJC does not offer self-directed TBL activities for any of the four areas]

3. In general, where do customers access these self-directed TBL services? Check all that apply.

- At the AJC
- Through a specific AJC partner (e.g., library, community college)
- At any location with internet access
- Don't know.

4. Please indicate below how you track self-directed customer use of TBL. Check all that apply.

- Track “hits” on various web-pages
- Monitor registration to access the courses
- Monitor customer time logged in
- Monitor customer completion of modules, units, sections, courses
- Monitor customer progress in fixed time period
- Receive report(s) from partners/providers
- Receive customer self-report
- Other (please specify): _____
- Not applicable/Do not track self-directed service use.

5. For self-directed TBL, please indicate the software programs used for each skill development area. Check all that apply.

	GCF LearnFree	Metrix Learning	ed2go’s Career Online High School	LearningExpress	KeyTrain	Career Ready 101	Lexia	Acellus	MathXL	Odyssey	Khan Academy	Edgenuity	Achieve 3000	Lynda.com	Provelt	Other	
Employability or basic “soft” skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Basic reading and math below the 9 th grade level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Building job search skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Technological literacy/basic computer skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Please specify the other software programs used for self-directed TBL.

Employability or basic “soft” skills	
Basic reading and math below the 9 th grade level	
Building job search skills	
Technological literacy/basic computer skills	

Section III: STAFF/INSTRUCTOR-ASSISTED TBL:

Staff- or instructor-assisted TBL refers to learning activities in which a staff person or instructor delivers content, feedback, technical assistance, or instruction alongside use of technology-based learning.

6. Please indicate below if your AJC offers staff/instructor-assisted TBL in the following skills areas.

SKILL AREA	Yes	No
Employability or basic “soft” skills	<input type="radio"/>	<input type="radio"/>
Basic reading and math below the 9 th grade level	<input type="radio"/>	<input type="radio"/>
Building job search skills	<input type="radio"/>	<input type="radio"/>
Technological literacy/Basic Computer skills	<input type="radio"/>	<input type="radio"/>

[If no for all, skip to question 13]

7. Please indicate below if you provide staff/instructor-assisted TBL that is specifically tailored to the following groups in each of the skill areas. Check all that apply.

SKILL AREA	Dislocated workers	Veterans	Youth	Individuals with disabilities	Ex-Offenders	Other
Employability or basic “soft” skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Basic reading and math below the 9 th grade level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Building job search skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Technological literacy/basic computer skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

For what other groups do you provide staff/instructor-assisted TBL in the following skill areas?

Employability or basic “soft” skills	
Basic reading and math below the 9 th grade level	
Building job search skills	
Technological literacy/basic computer skills	

8. For staff/instructor-assisted TBL, please indicate which software programs are used in each skill development area. Check all that apply.

	GCF LearnFree	Metrix Learning	ed2go's Career Online High School	LearningExpress	KeyTrain	Career Ready 101	Lexia	Acellus	MathXL	Odyssey	Khan Academy	Edgenuity	Achieve 3000	Lynda.com	Provelt	Other
Employability or basic "soft" skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Basic reading and math below the 9 th grade level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Building job search skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Technological literacy/basic computer skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>

Please specify the other software programs used for staff/instructor-assisted TBL.

Employability or basic "soft" skills	
Basic reading and math below the 9 th grade level	
Building job search skills	
Technological literacy/basic computer skills	

9. Some AJCs provide staff/instructor-assisted TBL that is offered remotely, such as online classes led by instructors delivering video-conference lectures. Please indicate below if you offer staff/instructor-led online classes for the following skill areas. Check all that apply.

	Yes	No	Don't know
Employability or basic "soft" skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Basic reading and math below the 9 th grade level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Building job search skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Technological literacy/basic computer skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. For staff/instructor-assisted TBL classes, which of the following tools are used for sharing course material or communicating with students? Check all that apply.

- Online collaboration tools (e.g., SharePoint, Google Drive)
- Learning Management System (e.g., Blackboard)
- Online discussion boards or forums
- Webinars (live/recorded)
- Videoconference technology
- Online messaging (such as Skype, Slack, Google Hangouts, etc.)
- Other (please specify): _____
- Not applicable

11. For staff/instructor-assisted TBL classes in the following skill areas, to what extent do the programs use game-like elements ("gamification") and/or simulations?

	No use of game-like elements and/or simulations	Limited use of game-like elements and/or simulations	Moderate use of game-like elements and/or simulations	Significant use of game-like elements and/or simulations
Employability or basic "soft" skills				
Basic reading and math below the 9 th grade level				
Building job search skills				
Technological literacy/basic computer skills				

**12. Please indicate in which settings staff/instructor-assisted TBL is offered for each skill area.
 Check all that apply.**

	One-on-one Assistance	Workshops or classes that do not meet regularly	Classes that meet regularly	Other
Employability or basic "soft" skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Basic reading and math below the 9 th grade level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Building job search skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Technological literacy/basic computer skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

In which other settings is staff/instructor-assisted TBL offered for the following skill areas?

Employability or basic "soft" skills	
Basic reading and math below the 9 th grade level	
Building job search skills	
Technological literacy/basic computer skills	

Section IV: Assistive Technology

13. Which of the following assistive technology tools are available for TBL? Check all that apply.

- Screen reading technology for mobile devices (e.g., iPhone's Voiceover or Android's TalkBack)
- Screen reading technology for desktop or laptop (e.g. WindowEyes screen reader)
- Closed captions(e.g., webinars, online videos)
- Screen/text enlargement capability
- Ubiduo devices (two-way speech generating software)
- Word prediction software
- Other (please specify): _____
- Not applicable

Section V: Supports for Staff/Instructor-Assisted TBL

14. How do you assess participants’ basic computer skills and ability to successfully use technology?

Check all that apply.

- Formal technological literacy assessment
- Informal assessment
- Staff recommendation
- Customer self-assessment
- Other (please specify): _____
- Don’t formally assess these skills

14A. [If selected formal technology literacy assessment] What is the name of the formal technological literacy assessment used to assess participants’ basic computer skills and ability to successfully use technology? _____

15. [If offers staff/instructor-assisted TBL] Which of the following professional development opportunities are available to staff to support them in their delivery of TBL? Check all that apply.

- Training (e.g., conferences, webinars, online courses)
- Ongoing mentoring
- In-person demonstration of TBL
- Peer learning
- Other (please specify): _____
- Not applicable

16. SkillsCommons is an online repository of curricula, course materials, training guides, and other workforce training materials. Please indicate below if staff have used materials from SkillsCommons to develop TBL for the following skill areas.

	Yes	No	Don’t know
Employability or basic “soft” skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Basic reading and math below the 9 th grade level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Building job search skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Technological literacy/basic computer skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17. A key to successful use of TBL is ensuring that IT systems function properly. Who provides technology system support to participants and staff using TBL? Check all that apply.

- IT support staff
- Other AJC staff
- Individual instructors
- External contractor
- Partners
- Other (please specify): _____
- Not applicable

Section VI: Satisfaction and Perceived Effectiveness of Staff/Instructor-Assisted TBL

18. **[If offers staff/instructor-assisted TBL]** Please rate the perceived effectiveness of staff/instructor- assisted TBL instruction as compared to non-TBL approaches.

	More effective	The same	Less effective	Don't know
Employability or basic "soft" skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Basic reading and math below the 9 th grade level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Building job search skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Technological literacy/basic computer skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19. **[If offers staff/instructor-assisted TBL]** How do you evaluate the effectiveness of staff/instructor- assisted TBL for the following skill areas? Check all that apply.

	Measure student progress using formal assessment or graded assignments	Customer feedback	Instructor feedback	Partner feedback	Employer feedback	Other performance metrics	None
Employability or basic "soft" skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Basic reading and math below the 9 th grade level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Building job search skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Technological literacy/basic computer skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section VII: Implementation Barriers

20. What type of internet connectivity does your center have? Check all that apply.

- Dial-up
- Broadband/High-speed (e.g., cable, DSL)
- Other

21. Does your center offer wireless internet to customers?

- Yes
- No

22. To what extent do the following factors pose barriers to customers using TBL programs:

	No barrier	Minimal barrier	Significant barrier	Don't know
Low levels of basic literacy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Low levels of technological literacy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of access to hardware	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of access to software	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of training to use the TBL tool	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of IT systems support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of interest in using TBL	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of accommodations or assistive technology (for customers with disabilities or special needs)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23. To what extent do the following instructor/staff related factors pose barriers to more extensive use of TBL for delivery of career services?

	No barrier	Minimal barrier	Significant barrier	Don't know
Low levels of technological literacy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of access to hardware	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of access to software	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of training to use the TBL tool	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of continuous supports needed to use the TBL tool (e.g., IT staff to troubleshoot)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of instructor/staff interest in using the TBL tool	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

24. To what extent do the following technological factors pose barriers to more extensive use of TBL for building skills?

	No barrier	Minimal barrier	Significant barrier	Don't know
Lack of availability or compatibility of hardware and/or software needed to use TBL tools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Security requirements (e.g., unable to disable firewalls or pop-up blockers)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Issues with internet connectivity or insufficient bandwidth	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of responsiveness or capacity of the AJC staff responsible for IT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty maintaining current technology (e.g., software updates)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section VIII: Decision-Making about TBL

25. Are there plans in your AJC to expand use of TBL in any of the following skill areas? Check all that apply.

- Employability or basic “soft” skills
- Basic reading and math below the 9th grade level
- Building job search skills
- Technological literacy/basic computer skills
- Other (please specify): _____
- No/None **[Skip to Question 27]**

26. How does your AJC plan to expand TBL use in any of the skill areas? Check all that apply.

- Add new software programs to the curriculum
- Add new/more hardware options
- Expand to new populations
- Expand to additional services (e.g., training)
- Develop new partnerships to support TBL
- Expand use of TBL with existing partners
- Other (please specify): _____

27. Some AJCs involve their partners in various aspects of programming. Please indicate the role of partners in the provision of TBL. Check all that apply.

	Public libraries	Community and technical colleges	Employers	Community-based organizations	School districts or local education agencies	Public housing authorities	Other
Delivery of staff/instructor-assisted TBL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Hardware provision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Oversight	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Advising on curricula	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Selection of TBL platforms and software	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Data sharing on participants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

What other partners are involved in the provision of TBL?

Delivery of staff/instructor-assisted TBL	
Hardware provision	
Oversight	
Advising on curricula	
Selection of TBL platforms and software	
Data sharing on participants	

28. Please indicate below which stakeholders have significant input concerning your AJC's use and implementation of TBL in the following areas. Check all that apply.

	Local Workforce Development Board	AJC Leadership	AJC staff	Partner agencies	State leaders	State Workforce Board	State workforce agency	Employers	Other partners and training providers
Selection of TBL programs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How content is delivered	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Resource use (e.g., staff time, classroom space, hardware)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Priority populations for TBL use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What other partners and training providers have significant input into decisions about TBL use and implementation?

Selection of TBL programs	
How content is delivered	
Resource use (e.g., staff time, classroom space, hardware)	
Priority populations for TBL use	

Thank you for your participation.
[END OF SURVEY – Version A]

VERSION B

[For respondent answering "None" to Question 1 in Version A.]

B2. Has your AJC ever used TBL for employability or basic "soft" skills, basic reading and math below the 9th grade level, building job search skills, or technological literacy/basic computer skills?

- Yes **[Continue to B3]**
- No **[Skip to B5]**

B3. Why did your AJC stop using TBL for employability or basic "soft" skills, basic reading and math below the 9th grade level, building job search skills, or technological literacy/basic computer skills? Check all that apply.

- Cost of software
- Cost of hardware
- Lack of customer interest
- Lack of instructor interest
- Customer readiness
- Instructor readiness
- Lack of applicability to jobs or educational pathways
- Perceived ineffectiveness of TBL tools
- Other (please specify): _____

B4. Who has input into the following decisions about TBL use and implementation? Check all that apply.

	Local Workforce Development Board	AJC Leadership	AJC Staff	Partner Agencies	State Leaders	State Workforce Board	State Workforce Agency	Employers	Other Partners and Training Providers	
Selection of TBL platforms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Content delivery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Resource use (e.g., staff time, classroom space, hardware,)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Priority populations for TBL use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

B5. Are there plans in your AJC to implement use of TBL in any of the following skill areas? Check all that apply.

- Employability or basic “soft” skills
- Basic reading and math below the 9th grade level
- Building job search skills
- Technological literacy/basic computer skills
- Other (please specify): _____
- None **[Skip to QB7]**

B6. How does the AJC plan to implement or resume use of TBL in the future?

- Add software programs to the curriculum
- Add hardware
- Develop partnerships to support TBL
- Implement TBL within existing partnerships
- Other (please specify): _____

B7. What specific supports/assistance would be helpful in implementing TBL? Check all that apply.

- More information on TBL tools/software
- Learning opportunities from other AJCs
- Needs assessments of partners to understand if TBL is useful
- Needs assessments of customers to understand if TBL would be beneficial
- Training opportunities for AJC staff
- Expanded partnerships around TBL
- Resources to purchase new hardware
- Other (please specify): _____

B8. To what extent do the following customer related factors pose barriers to more extensive use of TBL for delivery of career services?

	No barrier	Minimal barrier	Significant barrier	Don't know
Low levels of literacy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Low levels of technological literacy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of access to hardware	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of access to software	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of training to use the TBL tool	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of support needed to use TBL (e.g., IT staff to troubleshoot)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of interest in using TBL	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of accommodations or assistive technology for customers with disabilities or special needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

B9. To what extent do the following instructor/staff related factors pose barriers to more extensive use of TBL for delivery of career services?

	No barrier	Minimal barrier	Significant barrier	Don't know
Low levels of technological literacy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of access to hardware	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of access to software	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of training to use the TBL tool	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of continuous supports needed to use the TBL tool (e.g., IT staff to troubleshoot)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of instructor/staff interest in using the TBL tool	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

B10. To what extent do the following technological factors pose barriers to more extensive use of TBL for delivery of career services?

	No barrier	Minimal barrier	Significant barrier	Don't know
Lack of availability or compatibility of hardware and/or software needed to use TBL tools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Security requirements (e.g., unable to disable firewalls or pop-up blockers)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Issues with internet connectivity or insufficient bandwidth	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of responsiveness or capacity of the AJC staff responsible for IT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty maintaining current technology (e.g., software updates)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Thank you for your participation. [END OF SURVEY – Version B]