

Integrating Digital Tools for Adult Learners: Four Critical Factors

Authored by

Patti Constantakis, Ph.D.

December, 2016

In Partnership with:

The Joyce Foundation
Mockingbird Education
SRI International



Digital Promise

Accelerating Innovation in Education

www.digitalpromise.org

The numbers are staggering — an estimated 36 million adults lack the basic literacy, numeracy, and job skills necessary to find well-paying jobs and navigate public and social systems. What's more, the number of education programs that serve these adults is woefully low. According to a report from Tyton Partners¹, our federal- and state-funded programs have the capacity to serve only about four million of the 36 million.

Technology has the potential to be a powerful tool for improving access to learning for adult learners. Mobile access can support adults who cannot attend in-person classes. Feedback loops, translation technologies, social networks of peers and experts, adaptive problem sets, accessibility features, and more can combine to support development of basic and job (-related) skills. Technology can help create personalized pathways to support learning differences and open up a world of digital information and resources that form the gateway to today's job market.



Despite all of this promise, adoption and implementation of technology for adult learners is nascent. According to two recent Tyton Partners studies², there is increasing demand for education technology among adult education program administrators and educators. These studies show that in brick and mortar classrooms, a reasonable technology infrastructure is in place (computer

labs and internet connectivity) and, more importantly, enthusiasm for the potential of technology to support learning does exist.

Signs of this enthusiasm can be seen across the country. Individual instructors are experimenting with technology tools, such as [Remind](#) or [Google Suites](#), in their classes. Programs are experimenting with ways to incorporate online learning. Product developers are beginning to consider ways to leverage mobile tools for adult learners. But, in general, adult education programs lag behind their K-12 and higher education counterparts in incorporating technology.

If we believe in the potential of technology to bring quality digital learning opportunities to this underserved population, what can we do to accelerate adoption? Can we use what we've learned from education technology efforts in K-12 and higher education to create an environment that gives adult learners a more personalized learning experience? How do we bridge the gap between enthusiasm and effective implementation? What evidence should inform adult education practices and policies?

This paper seeks to help answer these questions by focusing on four factors that contribute to effective implementation of technology. These factors are drawn from the work we undertook to support fourteen program sites that participated in a study of

digital learning technologies' effectiveness in adult basic education³. Our team provided ongoing technical assistance for these sites, including professional development resources, consultation, and workshops. Our hope is to inform the practice of adult educators and administrators, as well as the design and development of new products for this market, to help realize the potential of technology to personalize and provide a quality learning experience for adult learners.

Factor 1: Support Multiple Implementation Models

When incorporating technology into the learning experience, one of the first considerations is whether the new technology product or tool supports the learning needs. Once selected, what is the best implementation model to use with particular adult learners? Will it be core or supplemental? Will students use the technology as a significant part of their in classroom experience or will they use it mostly outside of class? How can the educator construct the surrounding learning experience to ensure technology is best serving their learners?

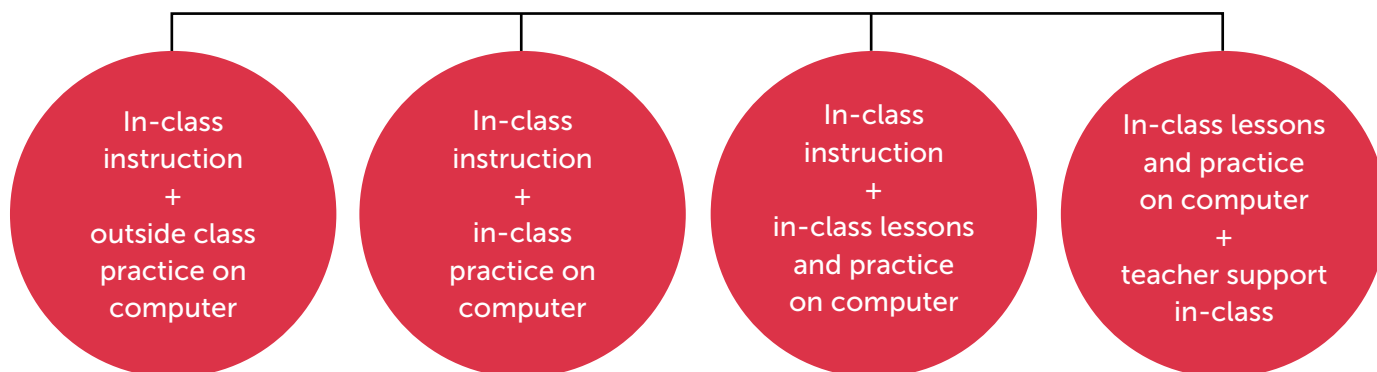
We found a range of models among the fourteen sites we worked with in the study. In fact, several different implementation

models were utilized within the same program. Administrators set minimal requirements — which in most cases was a certain number of hours using the product— and left the implementation details to each instructor. This flexibility is important. Adult educators often struggle with differentiated learning needs but need the freedom to be able to provide whole group instruction and individualized instruction when appropriate.

There are many terms used to describe ways that technology is implemented in adult education programs. Terms like hybrid, supplemental, online, flipped, and blended refer to a spectrum of models that range from one in which the teacher delivers the primary instruction to one in which the technology does this delivery.

Most of the models being used at these program sites fall along a spectrum of blended learning. At one end of this spectrum are models in which the instructor is doing most of the teaching, with students spending little time using the products on the computer. At the other end, most of the instruction is delivered by the product with the teacher supporting students individually as needed. We found programs at both ends of the spectrum and many at points in between.

Spectrum of Blended Learning Implementation Models



There is general agreement among educators that a blended learning model is the most effective implementation model for low-skilled learners⁴. These learners come to the door with differing levels of skills in basic education, language, and computer/digital literacy⁵. Using blended learning models to individualize pace and differentiate instruction augments the work of the instructor.

Allowing for varied blended learning models like we found in this study is key with adult learners, even within one program, as there is no one way to meet the differing needs and levels of these learners. A high touch, blended model is best for the lowest skilled students who are not confident with technology or their own learning skills, or who may lack the self-regulation skills to withstand extended periods of independent learning⁶. Online courses are probably best for more advanced students who are filling gaps in their learning pathways.

Allowing for evolving implementation models is also important. Most programs face the challenge of a fairly transient population of adult learners. Learners who start a class at the beginning of a term often do not stay to complete the term for various life reasons. So as the makeup of the population in a course changes, so might the way technology gets used. Several sites in our study adapted their original implementation models to accommodate the needs of their learners and increase retention. Most often these were programs who originally intended to implement the products primarily via direct

instruction models with most of the work being done in the classroom and decided to allow students to also use a learning lab setting or at home. This allowed learners who needed to, to get more time with the product.

As this study showed, supporting blended and multiple implementation models is key to working with adult learners. By providing such support, administrators can help educators construct a learning environment that will best serve their learners' needs and create more personalized, quality learning experiences.

From an administration point of view, this requires flexibility combined with structure. Our findings suggest:

- Setting overall implementation requirements and goals (e.g., number of hours spent)
- Giving instructors autonomy for implementation details
- Allowing for and encouraging evolving models

Product developers who are looking for ways to support the implementation of their products should consider:

- Ensuring product is designed to support multiple methods of implementation
- Providing training that supports multiple methods of implementation

...supporting blended and multiple implementation models is key to working with adult learners. By providing such support, administrators can help educators construct a learning environment that will best serve their learners' needs and create more personalized, quality learning experiences.

Factor 2: Use Data

Today's technology products have built-in mechanisms that collect a wealth of information on a learner's use. Such data can help educators understand how to target and personalize instruction, and it can help program administrators and instructors understand which products are working effectively and which are not.

We found that the programs in our study were using the data provided by the products minimally. Generally, these programs were just beginning to use the data to help them understand a student's learning experience. At the most basic level, most required that learners spend a minimum amount of time working in the software and were therefore able to track usage. Others were interested in finding out if students engaged with the technology, so they also looked at time spent and the rate at which students progressed through the material.

Only a few instructors had begun to look at the more detailed information provided to understand where students struggled in order to target and individualize instruction. Those educators reported that this data definitely helped them. Interestingly, even those instructors who did not make use of the data in this way saw the value of it and wished they had had more time to do the analysis. Many reported that they saw this data and information as the greatest potential technology had to give.

We know from both K-12 and adult educators that student progress data can shed a light on the skills and areas that a learner is struggling with, and it can help a teacher understand which approaches are working and which are not. Looking, for example, at student responses to questions (correct, incorrect, partially correct), time spent before answering a question, and quiz scores can help educators pinpoint problems a learner is having with a specific topic⁷. From this information, an

intervention can be designed that can focus on the student's problem areas, allowing for a truly personalized learning experience.

Yet, by and large, educators, both adult and K-12, are not making effective use of this data because they do not know how to analyze and apply the data effectively⁸. It is important, then, to provide training on how to use data and to provide time for them to analyze and use it for these purposes.

In addition, many of the programs expressed some frustration that there was little alignment between the products' internal assessments and the standardized assessments that their learners were required to take in order to progress through their programs (e.g., CASAS, TABE). Without that alignment, it was difficult to determine if students were learning what they needed to pass those assessments.

Many instructors reported that they saw data and information as the greatest potential technology has to give.

Knowing how to use and analyze learner data is key to understanding where individual learners are struggling in order to provide personalized learning experiences for them. To make full use of all that effectively implemented technology can offer, programs need to develop a culture in which data is used to provide a more personalized experience.

To help support rich data use, our findings suggest that administrators and instructors should:

- Set clear outcome goals for their learners

- Build in the expectation that instructors use data to monitor their learners' progress
- Build in time for training on how to use the data to better understand their learners
- Provide time and space for instructors to work with learners based on the areas they struggle with

Product developers can support rich data use by:

- Providing specific training for instructors on how to use data to differentiate instruction
- Aligning data/product to required assessments

Factor 3: Support a Rich Technology Infrastructure

Another key factor to effective implementation is the technology infrastructure. The U.S. Department of Education's Office of Educational Technology lays out four components to having a robust and flexible infrastructure that supports rich, personalized learning experiences. In their definition, learners should have persistent connectivity and access to the internet, powerful learning devices, high quality digital learning content, and responsible use policies/practices⁹.

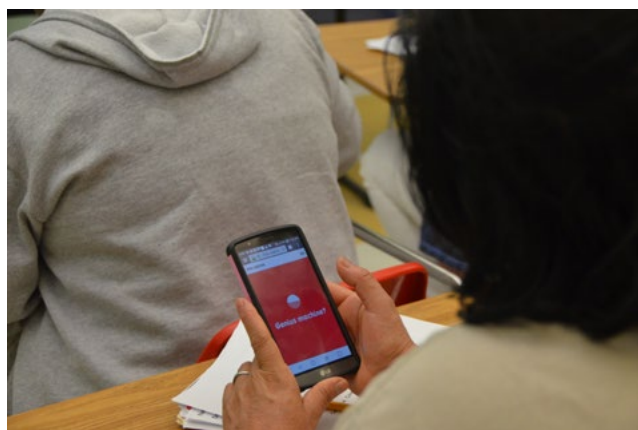
We found that each of the 14 sites had computer labs. They also had broadband connectivity that supported their computer classrooms/labs. There was however variability between programs and the size of their computer labs, affecting access.

Sites also varied as to how accessible those computers were to students outside of class time. A few had drop-in lab hours, but most limited student access to scheduled class or lab time. Several sites had computers in the classroom where instruction was

taking place, but most conducted class in a separate classroom from the computer lab. One program had recently purchased laptops and made them available to students during class time via a mobile cart.

The infrastructure, however, to support access via mobile devices such as tablets and mobile devices for anytime, anywhere learning that this population sorely needs was lacking. Wifi access for students' own devices was largely unavailable, and there were no mobile devices available for loan or checkout.

Our findings were consistent with what others have found across the country. According to a Tyton Partners report^x, adult education programs tend to have good internet access, with 85% of their respondents verifying persistent internet access available.



As for devices, Tyton Partners^{xi} report some variability among adult education programs. Community colleges and other larger programs tend to have robust computer classrooms/labs for students, whereas smaller community-based programs can struggle with only a few computers for students to share. Student ownership of devices skews toward mobile devices with between 55% and 75% of adult learners owning smartphones. This suggests that more needs to be done to make use of mobile devices for learning inside and outside of the classroom.

Interestingly, 65% of the students surveyed in our study reported they had done work in the software outside of class, either at home or at another facility with computers. In addition, the products used did not work on mobile devices like tablets and phones, therefore these sites did not explicitly support devices other than computers. Considering only a few programs allowed for drop-in computer use and none provided the ability to check-out devices for home use, this finding suggests that learners using technology would welcome the opportunity to get access outside the classroom.

Adult education programs would do well to think long-term and consider the infrastructure that is needed to create a flexible, rich, anytime, anywhere learning environment for these underserved learners.

Our study suggest that programs should consider:

- Finding ways to make site computers available outside of class time (e.g., check out policies, drop-in-labs) to support learner desire for more time with the products
- Using products that support mobile learning as well as in-class learning to take advantage of learners' cellphone ownership

Product developers can support a rich technology infrastructure by:

- Making products responsive
 - mobile and computer
- Building products to save data and state information to allow for seamless in-class and out-of-class learning and progress monitoring
- Providing training for students and instructors on different devices

Adult education programs would do well to think long-term and consider the infrastructure that is needed to create a flexible, rich, anytime, anywhere learning environment for these underserved learners.

Factor 4: Support the Evolving Role of the Instructor

As technology is further adopted in adult education, the role of the instructor will evolve. Educators in innovative K-12 and postsecondary classrooms have transitioned from being providers of information and to personalizing based on a growing understanding of their students' needs. This shift from teacher-centered learning in which the teacher directs the student's learning through planning and orderly lessons to student-centered learning in which the student participates in their own learning process is key to improving support for adult learners¹².

We found clear evidence of this evolving role of instructors among the 14 programs. A few programs were new to technology implementation and spent time wrestling with the logistics of managing a classroom/lab full of computers. Others were more experienced, and instructors were finding ways to differentiate instruction for students supported by the technology. For example, one program was experimenting with strategies for using the courseware for small group instruction with students who are at significantly different levels in the same class. Another program was using technology to facilitate tutoring.

Although most were just beginning to consider the ways technology could change the way they taught, when reflecting on what they liked most about using technology in the classroom, almost every instructor included the opportunity to work with learners one-on-one. The use of individual student data to tailor their instruction added to the enthusiasm to continue this shift to a more learner-centered environment.

The road can be bumpy in this evolution, as some of the sites in this study experienced. Educators can find themselves spending more time managing the technology details of the product (e.g., problems with logins, data loss, audio, and headphones) than they do engaged with the curriculum. Teachers often start by focusing too much on the technology itself and not enough on the content and then transition to planning lessons the way they always have, and using the technology as an additional layer, or tool, to advance their lesson.¹³

Ultimately, the technology should not be the focus. Student learning should be, and how the technology is used to develop students' knowledge and skills is critical. Signs of effective technology integration that is supporting student learning can be seen in technology supports for students taking an active role in their own learning progressions; providing frequent and personalized feedback; providing tools for productivity, creativity and research; connecting across cultural and national borders; and connecting classroom activities to the world outside the classroom. Successful technology integration goes hand-in-hand with more personalized supports for teachers, updated curricula, and improved formative assessment practices.

What kind of support did the instructors at these sites get to help them navigate this evolution? At a minimum, all sites received product training provided by the vendors. This typically included the basics

of logging on, navigating through the program as a student and as instructor, and using the data dashboards and reports.



Our sites received additional technical assistance if they wanted it. This included access to a web portal of resources and ideas, weekly emails with additional resources, and one in-person workshop on how to integrate technology into the classroom. Most of the programs took advantage of these extra resources. Overwhelmingly, instructors at these workshops were looking for strategies, ideas, and best practices on how to integrate technology and how to use technology to meet the needs of their different students.

This shifting role requires support that goes beyond just product training. It requires opportunities to develop ideas, strategies and resources, then to try them out, reflect, and adjust. Connecting instructors with others who have had similar experiences is useful. Communities of practice both internally and externally are invaluable.

Two other related issues arose. First, most programs had not articulated their own expectations of what the teacher's role should be when implementing technology. That left each instructor to figure it out without much guidance. Those few programs that had begun to discuss these expectations as a group were more comfortable with their changing role.

This shifting role requires support that goes beyond just product training. It requires opportunities to develop ideas, strategies and resources, then to try them out, reflect, and adjust.

Second, because instructors in adult learning programs tend to turn over about every two years, institutions must make sure that the training, ideas, and practices around technology integration become part of the knowledge base of the institution.

As our study suggests, administrators can help support the evolving role of instructors by:

- Providing appropriate technology and product training

Conclusion

The potential for technology to provide low-skilled adult learners access to more individualized learning opportunities has been echoed by educators and learners alike. But to really accelerate the adoption of technology across our adult education programs will take effort and commitment from program administrators, educators, and product developers to create and support those experiences.

We believe that focusing on these four factors will help adult education programs thoughtfully make the shift to effective technology use. Clearly, integrating technology is much, much more than having computers available for learners, and we hope this roadmap helps programs anticipate the conversations,

- Supporting teachers with professional development that helps them understand how to integrate technology into their teaching
- Supporting and articulating the changing role of the instructor
- Connecting with communities of practice both internal and external
- Institutionalizing the knowledge and best practices

Product developers can also support the changing role of instructors by:

- Providing product training
- Providing training and workshops that helps instructors use the technology in their teaching
- Helping make connections across institutions to establish communities of practice

reflections, and decisions needed to make this transformation a positive one for all involved, from the educators to the learners.

These factors will also help product developers support the effective use of their products with adult learners. By considering both the learners' and educators' needs in product design, developers can create products that maximize the learning potential that technology can provide in blended learning environments.

Ultimately realizing the full potential of technology to personalize and provide a quality learning experience for adult learners will help reach the 36 million adults seeking to better their and their families' lives. There is hard work to be done, but the payoff makes it all worth it.

Acknowledgements

The Joyce Foundation

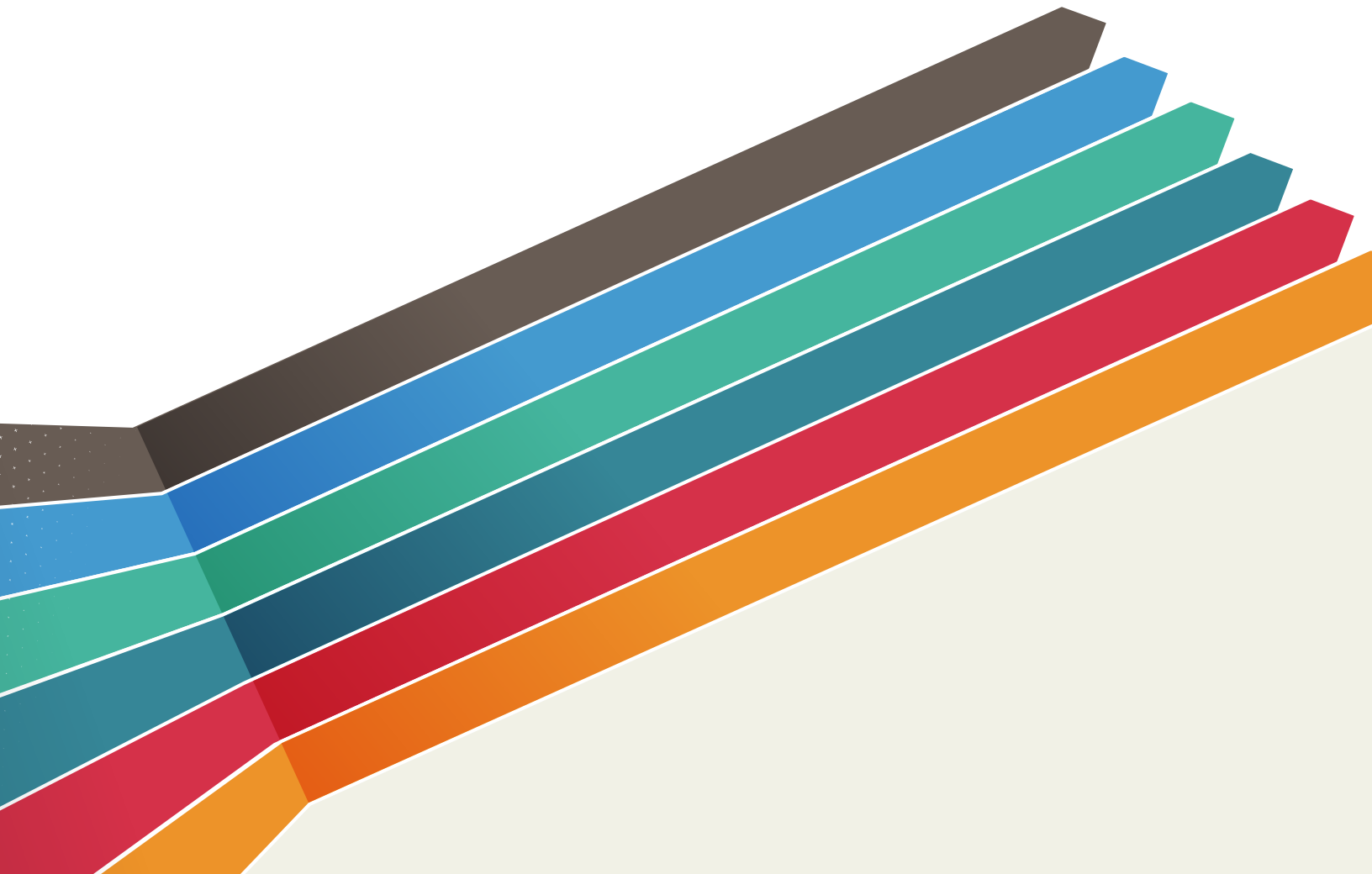
We wish to thank the Joyce Foundation for their continued support of this and other Digital Promise Adult Learning work.

Thanks to our partners



SRI Education™

A DIVISION OF SRI INTERNATIONAL



Endnotes

- 1** Tyton Partners. (2015). *Learning for life: The opportunity for technology to transform adult education. Part I: Interest in and aptitude for technology*. Retrieved from http://tytonpartners.com/tyton-wp/wp-content/uploads/2015/03/Learning-for-Life_The-Oppty-for-Tech-to-Transform-Adult-Education_March-20151.pdf
- 2** Tyton Partners. (2015). *Learning for life: The opportunity for technology to transform adult education. Part I: Interest in and aptitude for technology*. Retrieved from http://tytonpartners.com/tyton-wp/wp-content/uploads/2015/03/Learning-for-Life_The-Oppty-for-Tech-to-Transform-Adult-Education_March-20151.pdf And *Learning for life: The opportunity for technology to transform adult education. Part II: The supplier ecosystem*. Retrieved from http://tytonpartners.com/tyton-wp/wp-content/uploads/2015/10/Learning-for-Life_Part-2_Supplier-Ecosystem.pdf
- 3** This report is the result of the work we did to support research being conducted by SRI Education that investigated the role and efficacy of online learning technologies targeting literacy and math outcomes for low-skilled adults enrolled in adult basic education programs. The study evaluated 5 products being used at 14 adult education program sites across the country. Our role was to provide technical assistance to those program sites and to work with administrators and instructors as they implemented those products with their students. The final report for the larger study will be available in early 2017.
- 4** Rosen, D., & Stewart, C. *Blended learning for the adult education classroom*. Retrieved from <http://app.essential.ed.com/resources/blended-learning-teachers-guide-web.pdf>
- 5** Carpentieri, J.D. (2014). Improving basic skills in adulthood: Participation and motivation. Literature review prepared for the European Commission Working Group on Adult Learning. Retrieved from https://ec.europa.eu/education/policy/strategic-framework/expert-groups/documents/adult-basic-skills_en.pdf
- 6** Rosen, D., & Stewart, C. *Blended learning for the adult education classroom*. Retrieved from <http://app.essential.ed.com/resources/blended-learning-teachers-guide-web.pdf>
- 7** Office of Education Technology, U. S. Dept. of Education. (2014). *Learning technology effectiveness*. Retrieved from <https://tech.ed.gov/wp-content/uploads/2014/03/edm-la-brief.pdf>
- 8** Bill and Melinda Gates Foundation. (2015). *Teachers know best: Making data work for teachers and students*. Retrieved from http://www.teachersknowbest.org/reports/making_data_work; Interview with Andrea Saenz, CPL First Deputy Commissioner (2016).
- 9** Office of Education Technology, U. S. Dept. of Education. (2016). *Infrastructure*. Retrieved from <http://tech.ed.gov/netp/infrastructure/>
- 10** Tyton Partners. (2015). *Learning for life: The opportunity for technology to transform adult education. Part II: The supplier ecosystem*. Retrieved from http://tytonpartners.com/tyton-wp/wp-content/uploads/2015/10/Learning-for-Life_Part-2_Supplier-Ecosystem.pdf
- 11** Ibid.
- 12** Fairbanks, A. M. (2016, April 30). Digital trends shifting the role of teachers. Retrieved from <http://www.edweek.org/ew/articles/2013/05/22/32el-changingrole.h32.html>
- 13** Fairbanks, A. M. (2016, April 30). Digital trends shifting the role of teachers. Retrieved from <http://www.edweek.org/ew/articles/2013/05/22/32el-changingrole.h32.html>