Accelerating Change

How education technology developers can jump-start a new adult education market

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Foreword by
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Foreword by
Governor Beverly Perdue

As Governor, I recognized that no issue was more important than education. It's at the root of our economic success and our ability to thrive as a society, and in today's knowledge economy, human capital is our greatest asset. It is what builds communities and strong economies. My efforts to create learning pathways, starting in pre-Kindergarten and continuing through workforce training in North Carolina, reflect this.

We've made progress, but there is a long way to go. We've seen educational technology begin to reshape K-12 and postsecondary education, but these changes have not (yet) reached the millions of adults seeking to join the middle class and get themselves and their families to a better place. Adult learners, whether working toward basic literacy or acquiring new professional skills, invest limited time and scarce personal resources to make their lives and communities better. We should make a commitment to investing talent, time and money in developing both policy solutions — and more effective educational tools — to unlock their vast potential.

Such investments will require a shift in thinking. They require thoughtful public-private partnerships. Entrepreneurs must be mindful of the unique needs of adult learners. Policymakers must be creative about how we finance adult learning. In today's economy, learning cannot be bound by set locations and rigid schedules. The usual service providers such as community colleges, and adult learning centers, represent only a portion of what's possible. Technologies that we take for granted today were the stuff of science fiction only ten years ago. If we can align the transformative potential of technology — with the realities of adult education - the results over the next few years will be profound.

This paper is a welcome contribution to the shift. It can help entrepreneurs and technologists to understand the challenge and opportunity of adult education. It makes the point that we must act soon. The benefits of stronger adult education are not limited to adult learners. They ripple across society as a whole. We build stronger families, communities, and states, and a stronger country when more people are empowered to participate fully in civic life and our rapidly evolving knowledge economy.

Beverly E. Perdue

Governor Beverly E. Perdue
Governor of North Carolina, 2009–2013
October 31, 2015

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Executive Summary

This document is for entrepreneurs and technologists who are exploring the possibility of serving adult learners. It argues that this is a promising time for the market. Economic and labor trends are applying unprecedented pressure on policymakers to think differently. Federal, and in turn, state policies are shifting. The adaptation of K-12 and postsecondary education technologies (ed-tech) to the unique needs of adult learners is only beginning to shape the delivery of adult learning. It is not a matter of *whether* technology can improve adult learning outcomes at scale, but *how.*

Getting there will require a thoughtful conversation about both the potential and limitations of technology for adult learners. It will require careful consideration of policy-driven barriers and opportunities. We hope that this paper gives entrepreneurs and investors a window into the policy environment that shapes the adult education landscape and, in doing so, helps to inspire a thoughtful, collaborative conversation about what's possible.

The Opportunity section identifies the market potential. It describes the pace at which emerging technologies have been adopted within our existing system of adult education and sizes up the opportunity.

In **Today's Federal Framework**, we explain the policies and funding streams that shape the market today. In many ways, the adult education market is in flux. Shifting demographics and employer demands are forcing creative thinking, resulting in the emergence of policies that reflect the potential for technology to improve outcomes at unprecedented scale. This is followed by three short sections that look at emerging opportunities at the federal, state, local and philanthropic levels.

Policymakers and funding streams are not customers. The **Tailoring Ed-tech Solutions** shares perspectives from the field to help entrepreneurs understand the real-world demands of practitioners, and think about use-cases and solutions. We provide illustrations from across the ed-tech sectors to inspire and challenge our discussions.

Like all learners, the unique challenges of adult learners are not limited to the transmission and acquisition of content. Success requires wraparound services and expertise that should fuel **Innovative Partnerships** within the adult learning sector—including thoughtful collaboration with the public and private institutions that govern its success.

Finally, it would be great if this document could provide simple answers, but it cannot. This paper will succeed if it raises questions for policymakers, inspires attention from entrepreneurs – and generates lively conversations about the ways that ed-tech can play a role in serving the millions of adult learners who so eager to learn.

Introduction

Let's be blunt. The field of adult learning has been the backwater of ed-tech entrepreneurship. It remains stagnant while the currents of K-12 and higher education technologies swirl.

There are plenty of reasons for this lack of growth: the delivery model for adult education is terribly fractured, even in comparison to K-12 and postsecondary education. The government-run adult education programs are designed to deliver specialized services responsive to local needs, rather than establish overarching goals and success metrics to inform product design. There is, today, also insufficient funding in the system to meet the growing demand of adult learners.

These barriers are beginning to fall. The urgency to do better by adult learners is disturbing and obvious. If you look for it, you see it everywhere. The news is brimming with stories about the skills gap. Millions of adults live in our digital and knowledge economy but lack the skills required for successful, rewarding employment.[1] We are also witnessing growing income inequality. Harvard political scientist Robert Putnam's latest bestseller, *Our Kids,* details the gaps between the rich and the poor, the educated and the uneducated. It is, as he puts it, the "pulling apart" of American society.[2] We see its effects in places like Baltimore and Ferguson, and in the gentrification tensions within our cities.

At the same time, technology is changing the education marketplace and the way that school districts, colleges, and universities are doing business. A multitude of learning and digital resources enable more differentiated instruction. Institutions are beginning to use data to target interventions and improve retention. Near broadband ubiquity and mobile computing means that coaching and other supports are more readily available. The application of these ideas to the adult learning market requires more than the transposition of existing tools and concepts to new delivery models and funding streams. It will require an approach that is tailored to the needs and realities of the adult learner. This paper discusses one way that education technology developers can approach the tailoring — it is called "empathy by design."

Ultimately, this paper puts the responsibility for jump-starting the adult ed-tech market on the readers. What role can investors and entrepreneurs play in articulating a new vision for adult education? How should new delivery models and new solutions inform practice and policymaking?

First, some level setting. What do we mean by the current adult education market — who is getting served? Adult education programs serve individuals over the age of 16 who are not enrolled in school, and either lack a high school credential or do not have strong enough literacy, numeracy, or English language skills to improve their position in life. The needs of each individual differ, so there are a variety of service categories. Here are the most common models:

- **Adult basic education (ABE),** an instructional program for the undereducated adult planned around

those basic and specific skills most needed to help him or her function adequately in society (often used interchangeably with **basic adult literacy**);

- **Adult secondary education (ASE)**, a program designed to prepare adults for either further education or to help them gain skills that will lead to employment;

- **English as a Second Language (ESL or ESOL)**, which provides basic English language skills to non-native speakers;

- **High school equivalency exam preparation (HSE)**, which prepares students to earn their GED;

- **Remedial/developmental education**, designed to help students entering postsecondary education achieve core competencies;

- **Bridge or integrated education and training (IET)**, which includes programs that take basic adult education and connect it to higher-level occupational skills training;

and

- **Workforce readiness training**, which focuses on giving adults the applied skills they need to fill employers' workforce needs, but can also encompass basic education and/ or basic literacy components.

In this paper, we use the term "adult education" to refer to the full range of models and providers, unless otherwise specified.

The Opportunity

Today, our system of adult education serves only a fraction of the total demand. And the demand is massive. According to the Organisation for Economic Co-operation and Development (OECD), there are about 36 million "low-skilled" adults in the US, yet only an estimated 4.1 million adults benefit from the $10 billion we invest each year in adult learning services.[3]

The adult learning market, OECD reminds us, represents "roughly the population of New York, Michigan, and Minnesota" combined.[4] That is more than double the total enrollment at public and private colleges and universities (including both two- and four-year institutions). If we include adults that are more than low skilled, who can perform simple and everyday literacy activities but who still may need more services, the figure begins to move toward 93 million individuals.[5] For an excellent overview of the market, read Tyton Partner's *Learning for Life*, a pair of reports on the demand and supply sides of the adult education technology market.

At a system level, the pace of investment in digital learning represents both a challenge – and an opportunity. The relative adoption for digital materials alone is telling. Of our $10 billion national investment in adult education, about 8 percent, or $800 million, is spent on instructional supplies and materials.

Estimates suggest that only twenty-five percent of that $800 million is currently spent on digital materials.[6] Contrast that roughly $200 million spend on digital materials for adult learners with the estimated $1 billion spent on subscriptions to electronic resources by the 3,793 academic libraries in the U.S,[7] and the more than $8 billion that K-12 invests in non-hardware educational technology.[8] The investment in adult education technology pales in comparison.

Digital resources alone don't equate with outcomes. The challenges of adult learners are complex and multifaceted. But the relative level of our investment in digital learning resources for adult learners, at a national level, makes for an easy argument that we are leaving great and needed opportunities for adult learning on the table. As the quality and quantity of available resources for the adult learner increases, that won't hold.

Today's Federal Framework

If we want to improve upon the current government-run system, we need a basic understanding of its limitations and forthcoming opportunities. Let's take a moment to unpack the key government programs that make up today's adult education market. After examining each one, we'll discuss the implications of the structure for market entry, and then look at recent changes to the law that create new opportunities.
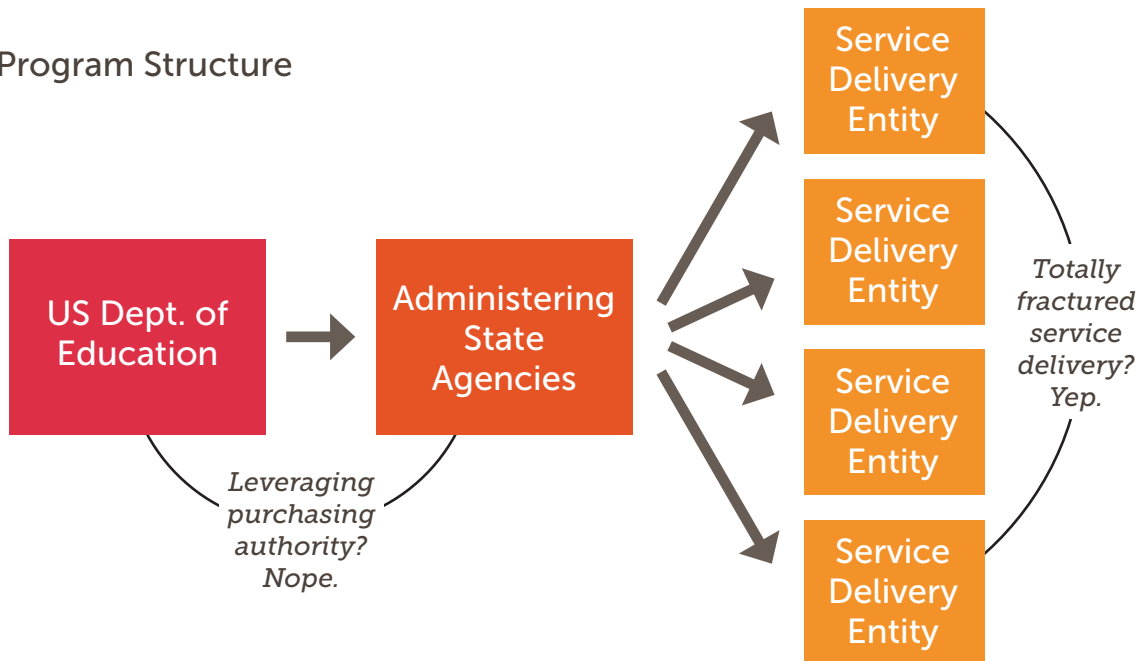
At the federal level, the Workforce Innovation and Opportunity Act (WIOA) is the primary adult education law. Before Congress reauthorized it in 2014, it was called the Workforce Investment Act (WIA). It has two focal programs: Title I, the adult workforce development program, and Title II, the Adult Education and Family Literacy Act (AEFLA). Congress appropriates about $1.7 billion for Title I and about $600 million for AEFLA each year.[9] The states complement these funds with their own investments, as discussed in the **Emerging State Opportunities**

section below. These federal programs are important as funding mechanisms, but more so because they provide structure to the delivery of adult education services.

AEFLA, Title II of WIOA

AEFLA is the primary federal funding vehicle for the most basic kinds of adult education, from English literacy instruction to courses leading to a high school diploma equivalency.[10] The federal government distributes AEFLA funds to state agencies based on Census data

Figure 1:
AEFLA Program Structure

US Dept. of Education → Administering State Agencies → Service Delivery Entity / Service Delivery Entity / Service Delivery Entity / Service Delivery Entity

Leveraging purchasing authority? Nope.

Totally fractured service delivery? Yep.

on the number of adults (ages 16 and older) in each state who lack a high school diploma and are not enrolled in school.[11] The grantee agency that is responsible for the program varies across the states. It is typically the state's department of labor or workforce agency, but it can also be the state's postsecondary education or its community college division.

The overseeing agency, at the state level, then offers multi-year grant competitions for the delivery of the AEFLA services by non-profits, libraries, school districts, and postsecondary institutions, which are most often community colleges. Typically, these funds go out to providers in relatively small amounts and are used to enroll eligible adult learners in evening programs that offer a mix of personal and computer-assisted instruction.[12] See Figure 1 for a basic overview of the program structure.

What is significant about this program structure? First, once the funds are disbursed, they are small and spread out across service providers, making sales and marketing very difficult. Second, if any purchasing leverage exists, it would be with the state grantee that runs subsequent competitions. Yet, these competitions do not typically acquire
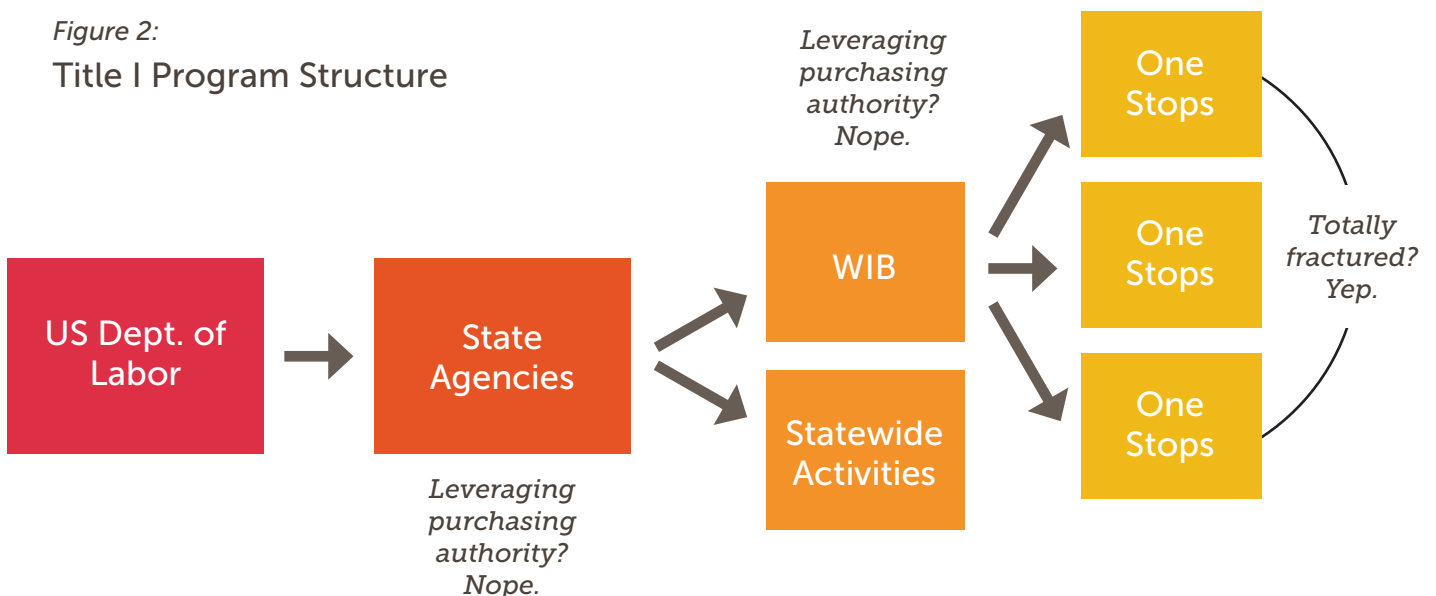
products or services. Rather, they typically approve localized services that meet basic delivery standards.[13] "There are programs that people love and support, but today's buyers, the government agencies, avoid favoring one vendor over another," said Alison Ascher Webber, Education Director with Cell-Ed, a mobile-based adult learning provider.[14] The result is a very mixed provider system that has made sustainable business revenue hard to cobble together.

Adult Workforce Development, Title I of WIOA

WIOA's adult workforce development program, Title I, is far larger than AEFLA, at $1.7 billion a year. The funds are managed by state workforce governing boards, which are responsible for developing and coordinating the state's workforce training plans and activities. The boards then distribute the funds to regional Workforce Investment Boards (WIBs).

The WIBs oversee the localized workforce programs. They select or set the rules for the selection of service providers, and they broker the connection between the training

Figure 2:
Title I Program Structure

US Dept. of Labor → State Agencies

Leveraging purchasing authority? Nope.

WIB

Statewide Activities

Leveraging purchasing authority? Nope.

One Stops

One Stops

One Stops

Totally fractured? Yep.

programs and the needs of local employers. Typically, investment boards do not deliver the services themselves. They oversee the delivery of the services through "one-stop" centers, which may be non-profit entities, community colleges, employment service agencies, or other organizations (see Figure 2).[15] That's three levels of entities before services get to the adults, in case you're keeping track.

Eligible job seekers come to the centers, get an initial screening, and receive an individualized training plan and an individual training account (ITA), which functions like a voucher that job seekers can spend on approved training programs. Unfortunately, training is typically sequential and not personalized for the job seeker.[16] More problematically, the available training services are not usually synced with the needs of local and regional employers.[17]

A consequence of this structure, for ed-tech entrepreneurs, is that there is no state agency or service provider with the responsibility to leverage its purchasing power to drive change. State governing boards do not make large procurement decisions, and neither do the WIBs. Rather, the goal of the WIB has been to provide a menu of options that could meet the range of adult learners' needs as they progress through their training with their ITAs. As with AEFLA, the result is a small and very localized service market that makes it difficult for new and potentially high-impact models to achieve a degree of scale required for investment, research and development.

Given the structure of these programs, it is fair to say that the AEFLA and the adult workforce programs have not been welcoming to education technology entrepreneurs. But don't despair. Changes are in the works that are beginning to establish the foundation for new distribution and delivery models in adult education.

An Improved Federal Law and New Opportunities

When Congress reauthorized the Workforce Investment Act (WIA) in 2014 and renamed it the Workforce Innovation and Opportunity Act (WIOA), they made some noteworthy changes to AEFLA and the adult workforce development program.

For example, under the prior version of the law, Title I and Title II were delivered separately. Under the reauthorized law, AEFLA programs may be integrated with workforce training programs.[18] "The breaking down of silos has been a key policy priority over the years," said Michael Brustein, founder of the national law firm Brustein & Manasevit, PLLC, and one of the leading experts on federal grants management.[19] "This silo [preventing the flexible use of AEFLA] has now been knocked down."

The new WIOA also requires the state workforce governing boards to create a more robust state planning document, the Unified Plan, which should better integrate the needs of the private sector and other key economic partners in the development of career pathways.[20] This plan could give states and WIBs the authority they need to leverage their purchasing power to deliver more organized training tools and services. Similarly, WIOA now allows local training centers to offer group training instead of just individual training accounts. This, too, provides program administrators the leverage they need to deliver more coordinated and focused services.[21] The bottom line is this: if a state administrator wants to make something happen, he or she now can, and this creates new opportunities to develop and test the application of technology, at scale, to address our most vexing adult education challenges.

Emerging State Opportunities

As a result of the changes to WIOA, state policymakers are reviewing their adult education and workforce training programs — and the potential for improvement is great. States have, in large part, been accomplices in creating a fractured service delivery model.

This is particularly true for adult education, where state and local funds make up, on average, about half of the budget for adult education service providers (although the exact contribution varies across the states).[22] WIBs tend to rely more on federal funding, but their services also face the sabotage of fractured state service delivery.[23] A recent state audit of the workforce programs in Virginia helps to illustrate the point. In 2013, there were 24 workforce development programs administered by nine state agencies. The agencies then worked with more than eight different kinds of local entities that each had discretion in the way they administer programs.[24] The auditor's conclusion was predictable: the patchwork of programs is not benefitting job-seeking adults or employers.

This patchwork problem sets the stage for change. States, faced with unprecedented pressure from employers and shifting demographics, are desperate for solutions. An evolving federal landscape provides governors and state legislatures with increased flexibility. As laboratories for policy development, states early to reform their systems will have a disproportionate impact on the national landscape — sharing best practices with their peers, and informing federal policy over time. Entrepreneurs should be mindful of states on the front end of this curve

Ohio, for example, is pioneering a new coordinated adult learning initiative, the Ohio Adult Diploma Program (ADP). ADP allows adult learners to earn a high school diploma and industry credential simultaneously through self-paced, competency based learning better suited to the time constraints of adult learners. ADP service providers work with local employers to determine the skills that are necessary to gain a living wage. Students work with the provider to design a personal success plan, with progress based not on seat-time or clock-time, but rather the mastery of skills in the plan on their own timetable.[25] This pilot initiative is opening up new opportunities for education technology companies. Graduation Alliance, for example, uses a blended laptop and in-person learning model to serve non-traditional students seeking a high school equivalency or other adult education credential.[26] As the Ohio Board of Regents put

The bottom line is this: if a state administrator wants to make something happen, he or she now can, and this creates new opportunities to develop and test the application of technology, at scale, to address our most vexing adult education challenges.

it: "Graduation Alliance provides a good model for adult education programs — first, because they use older adults as role models and as mentors, and, second, because Graduation Alliance works with industry partners to prepare their adult learners for specific workforce opportunities."[27]

Ohio is not alone. California is in the process of making a $525 million state investment through its Adult Ed Block Grant system for "a new era" of adult education and career training programming. The new investment is an effort to better organize adult basic education with other programs, and coordinate it within regional consortia that must include K-12 districts, community college districts, and County Offices of Education.[28] These consortia will be able to better leverage their purchasing authority, which has been sorely missing from the adult basic education and job training systems. Moreover, cross-sector coordination should help to increase the market reach of that purchasing authority.

Local and Philanthropic Investments

In addition to the changing federal and state funding landscape, it is important to keep an eye on two other funding sources that are helping to reform the adult learning sector.

First, municipalities have begun creating their own markets. Some cities are taking matters into their own hands, launching initiatives and funding strategies that function differently than, or outside of, the state's adult education framework. Philadelphia and New York City, for example, have each developed their own city-wide initiatives to blend existing funding sources and draw on municipal resources. In 2011, Mayor Michael Nutter re-established the Philadelphia Mayor's Commission on Literacy. He allocated $1 million for a demonstration project, and the program scaled from there, drawing almost exclusively from the city budget. The program includes the first online cohort learning program for low-literate adults, myPLACE Online. The platform is a single electronic registration that adult learners fill out to access services, and all 30 of the Commission's partner agencies use this registration in their enrollment process, and can access information for any learner in the system. Similarly, the Jobs for New Yorkers task force is re-examining New York City's job training strategies and recognizing the need to maximize its resources, like the City University of New York (CUNY), the New York Center for Employment Opportunities (CEO), and others.

Second, it is important to acknowledge the work of private foundations. The Barbara Bush Adult Literacy XPRIZE, for example, is holding a $7 million global competition to develop a smartphone app that can increase literacy skills within 12 months for adults reading at or below the third-grade level. Jobs for the Future (JFF), a nonprofit focused on creating innovative career pathways and educational resources, managed the 2012 Accelerating Opportunity initiative, an $18.5 million collaboration designed to support five states' efforts to coordinate adult basic education programs and prepare low-skilled adults to succeed in technical and occupational degree programs. Philanthropies including the Bill & Melinda Gates Foundation, the Joyce Foundation, the W.K. Kellogg Foundation, the Kresge Foundation, the Open Society Foundations, and the University of Phoenix Foundation all provided funding. The Joyce Foundation also supports Digital Promise in their efforts to clear the path for the emergent adult education technology market.

Albeit nascent, recent policy shifts, local investment, and philanthropic commitment suggests that this is a time of promise for the adult learning market. It is certainly the start of something new, and potentially the start of something far better.

Tailoring Ed-tech Solutions for the Adult Learner

Policy shifts and market consolidation are beneficial trends, but at best only enablers. The opportunity-gap for adult learners is both a demand and supply-side challenge. To succeed, next generation technology must demonstrate both scale and impact — and to do that, it has to be tailored to the unique needs of adult learners.

The interviews conducted for this paper, along with our experience in the field of educational technology, make this point very clear. Cell-Ed CEO Jessica Rothenberg-Aalami put it bluntly. "I have been shocked by what I would consider a major need that is going unmet," she said. "We, as a sector, have continually focused the development of technology on K-12 and higher education. We haven't addressed the problem of adult education for the 21st century."[29] Paula Hoffman, the Chief Student Affairs Officer at Pine Technical Community College in Minnesota, echoed that sentiment. "There are some really well-founded adult learning theories; but these are largely absent from our policies and adult learning technologies, whether that is in workforce development, a two-year college, or other."[30] To fix this, entrepreneurs and developers need to put the adult learner at the center of the design process. Let's call it "empathy by design."[31]

What is "empathy by design?" It is a set of guiding principles for the development of adult educational technology products. These principles, listed below, are drawn from the large body of research and practice in the field of adult learning. After each principle, we include examples from across the ed-tech sectors that can help us to connect the dots and spark ideas about how to develop around the principle. (In full disclosure, some of the examples are from organizations that work with Whiteboard Advisors. They are identified in the endnotes). As Steve Jobs put it in a 1996 *Wired* interview, "Creativity is just connecting things. When you ask creative people how they did something, they feel a little guilty because they didn't really do it, they just saw something. It seemed obvious to them after a while."[32] Keep in mind that this framework is not exhaustive. It is a starting point for a discussion about ways that we can improve the quality and quantity of adult ed-tech products.

The Principles

> **Principle:** Adult Learners face multiple obstacles and barriers to learning.

People come to adult learning with complicated biographies. Their lives, typically, have not gone as planned and they are now making the effort to address that while managing all of life's daily responsibilities. Research has shown that the most cited barriers to learning are situational (*e.g.*, job responsibilities, child care, lack of money and more),[33] but adults also face internal struggles, such as a lack of confidence in their ability to learn. "I'm too old to learn" is a common phrase heard in many cases.[34] In western New York, Charles Diemert, Literacy Zone Coordinator at Orleans/Niagara BOCES, observed that "for many of our adults, education is not even close to being the top

priority. […] They need tools that can help them to navigate their other daily challenges, which include transportation, [their] rural setting, and keeping track of the available services."[35] The story is similar in Texas, where there are almost 8 million adults who need services. "We are a large and diverse state with many immigrants, migrants, and rural settings. We need solutions that can address these barriers. The traditional class setting just does not work for many," said Jon Engel, the Adult Education Director at Community Action, Inc. of Central Texas.[36]

What technology trends might animate our discussions about this principle? Three stand out.

- **Mobile technology** will be important for adult ed-tech developers trying to break down the barriers of class schedules and remote locations. "Mobile first really is a new way of thinking about adult education. It doesn't rely on visuals or sitting for long periods of time or commitment to an hour-long classroom," said Cell-Ed CEO Jessica Rothenberg-Aalami. "We are moving away from that, toward small bits of information delivered on the go. That is what many adult learners are demanding."[37]

- **Mobile devices can also help adult learners navigate** the challenges that

get in the way of learning. Full Measure Education, for example, provides mobile-based communication and motivation strategies that help adults attending community colleges and workforce programs focus on their learning. "The challenge is to remove the administrative, financial, communication and scheduling barriers to their success. We simplify this for them so they can get to their learning. Mobile can do this," said James Rianhard.[38]

- **Competency-Based Education (CBE)** programs award students credit based on demonstrated mastery of competencies and knowledge, and for prior learning and experiences. It can help to address the barrier of time, and it allows developers the opportunity to build flexibility into their programs. In January of this year, for example, the U.S. Department of Education launched an Experimental Sites Initiative to explore the expansion of student financial aid for 40 colleges that have launched competency-based education programs.[39] Students enrolled in these programs finish their courses not when they have completed a certain number of hours, but when they have demonstrated mastery of all the required knowledge and skills. They can also receive credit for learning that took place before starting the course. CBE is also emerging in less formal settings, as a way to track and give students credit for making progress in their learning. This trend is a natural fit for adult learners who need flexibility for their learning, and who, in most cases, already have employment experience.

> To succeed, next generation technology must demonstrate both scale and impact — and to do that, it has to be tailored to the unique needs of adult learners.

Principle: Adult Learners learn differently than traditional students.

There is a large body of research telling us that adult learners do not learn like traditional secondary and postsecondary students, and it would be worthwhile for developers

of adult ed-tech to explore the prominent learning theories.[40] To put it succinctly, many adult learners process things differently and they lack the learning skills that we assume students to have. "We presume that persistence, completion, and knowing how to ask questions are innate abilities. We forget that that's taught culturally," observed Paula Hoffman. Instructional design for adult learners has to un-pack assumptions about the learning process to support learners that are not only new to the topics and disciplines required for success, but may be new to learning altogether.

The un-packing of learning skills is becoming a hot topic. The work of researchers like Carol Dweck and Angela Duckworth, for example, is having a big impact on K-12 school instruction and on the development of learning technologies. It is likely that their work and the the work of adult learning theorists will soon have a similar impact on the adult sector.

- Dweck and Duckworth, among others, have shown the critical role that **"non-cognitive" skills** play in an individual's ability to master new material and complete their studies. Many in K-12 education are dialing into this, and these skills and mindsets are also desired by employers. Georgetown's Center on Education and the Workforce finds that skills like critical thinking, active listening, social perceptiveness, speaking, and problem-solving are among the most highly-valued abilities throughout the economy; 48 percent of jobs, for example, require high levels of active listening.[41]

- **Personalized Learning** can help to accommodate the different skill levels and learning methods that adult learners bring to the table. The approach allows teachers to work with students at their skill level and to support their particular learning needs, even when a teacher is not available. Programs like i4class. org are beginning to partner with adult

education providers to deliver customized academic mathematics instruction and, as noted, groups like Graduation Alliance are threading personalized academic content with the emotional and peer support that is critical to adult learning.

> **Principle:** Adult Learners thrive in a supportive, mentor-rich environment.

There is ample research that cohort learning is extraordinarily important for the adult learner. According to a 2014 Department of Labor report on the matter, which cites a series of other corroborating reports, "belonging to a cohort, or a tightly knit, reliable group of student peers with a common purpose, contributes to developing skills and persisting in courses and programs."[42] Judy Mortrude, the Director of the Alliance for Quality Career Pathways at CLASP, echoed that sentiment. "Having the participant showing up and physically meeting with a learning advisor or a career counselor [is] the model that we see working best with low-skill, high-barrier populations."[43]

How can designers encode connections to peers, mentors, and related supports? The trends in blended learning will likely influence the way developers could address this principle.

- Personalized learning may include the use of **blended learning,** or an instructional model that entails a combination of time spent learning on devices (*e.g.,* through software programs) and face-to-face time with the instructor. Blended learning helps ensure that students balance screen time with peer and teacher interaction and learn non-cognitive skills like teamwork and discussion.

- Blended learning programs can connect to the "two-generation" approach to

breaking cycles of poverty. This is an approach to address the needs of both children and parents together, and it is being used to increase within-family synergies that reinforce educational motivation, persistence, and interest in learning.[44] Early research shows that the strategy is effective. According to a 2013 report by the National Center for Families Learning, "two- generation learning can increase student achievement, expand parent engagement, improve adult reading behaviors and prepare parents to help their children with school."[45]

Principle: Adult Learners are here to improve their situation.

Adult learners are often motivated and making an extraordinary effort to engage in learning because they want to get a better job or advance themselves in some way.[46] The research shows that "the more closely training is related to a real job or occupation, the better the results for training participants."[47] This is why apprenticeship programs have a strong record of success. It also explains, in part, the urgency that is driving policymakers and adult learning program administrators to develop well-articulated college and career pathways that map their services to the needs of the labor market.[48]

What are some examples of ed-tech solutions that might inform discussions about this principle? Two stand out.

- **Micro-credentials and Digital Badges** can help adult ed-tech developers breathe life into the policy objectives of "stackable

credentials" and "portable credentials," which are emphasized as a part of the new WIOA.[49] Stackable, micro-credentials can be part of a sequence of credentials that can be accumulated over time to build up an individual's qualifications. The credentials are portable when they are recognized and accepted as verifying the qualifications of an individual in other settings such as educational institutions, other industries or other employing companies.[50] Digital Promise, for example, is applying this to the benefit of K-12 educators by building a coalition of educators and partners to develop a micro-credential system that provides teachers with the opportunity to gain recognition for skills they master throughout their careers.

- **Accelerated Learning** applies the micro-credential idea to an intense learning boot camp that gives the student just enough training to get started in a new career. This model can help adult ed-tech developers focus on economic relevance with its smart approach to partner employers. A cadre of fast growing "coding bootcamps", for example, offers private, postsecondary, non-degree-granting courses and full-time immersive training programs in technology, business, and design, and connects students with a constellation of partner companies for employment.[51] Because they work outside of the traditional workforce and higher education models, accelerated learning programs are creating new markets and new learning opportunities that could soon extend to low-skilled adults. "We've been thinking a lot about access and creating opportunities for those that are traditionally underserved," said General

We need to engage in imaginative conversations about new partnerships within and outside of the adult learning sector.

Assembly Vice President Liz Simon.[52] To tap into the huge need and pool of adult learners, accelerated learning providers like General Assembly and Flatiron are creating bridge programs and developing partnerships to put adult learners on track to succeed in accelerated programs to obtain critical skills for high growth fields. It will only be a matter of time before such efforts connect with more frequency to adult learning programs, and the developers of new adult educational technologies should be ready to accelerate this union.[53]

These guiding principles, again, are intended to help direct the discussions about the next generation of adult ed-tech so that entrepreneurs can better serve adult learners and quickly expand how much is spent on digital instructional materials. The other way to increase the market is to expand services to the number of adults who need it. How can we do that? We need to engage in imaginative conversations about new partnerships within and outside of the adult learning sector.

Innovative Partnerships

Education technology providers will not reach adult learners on their own. Addressing unmet demand will require public and private partnerships that leverage and create new efficiencies across existing structures and systems. Smart partnerships will require creative thinking and imaginative discussions from adult education entrepreneurs. The questions below are designed to spark such discussions.

The first section, "Opportunities from Regulatory Change," connects back to the forthcoming regulatory changes discussed above and presents questions about new potential partnerships that could take advantage of those changes. The next section, "Cross-Sector Collaboration," takes some of the animating examples in "The Principles" section (above) and presents questions about potential partnership opportunities that could expand the adult learning market. Finally, there are guiding questions for direct-to-consumer and corporation opportunities. All of these questions beg the attention of smart entrepreneurs.

Opportunities from Regulatory Change

- **Mapping career pathways.** Changes to WIOA will cause states and regions to review how they are connecting their services to the needs of local employers and how they keep this information up to date. "We are identifying what our regional entities are offering, where they are offering it, and how they are offering it," said John Fleischman, the Assistant Superintendent, Technology Services at the Sacramento County Office of Education and founder of USALearns.org. "This is necessary if we are to connect everything we are doing to career pathways and even literacy pathways, which link to the career pathways."[54] Such resource mapping work, which includes workforce, literacy and more, is well suited for technology. How can education technology entrepreneurs partner with state agencies to make this more efficient? How could access to such statewide data be help to create more standardized ed-tech market entry points?

- **Enabling better interagency cooperation.** The new state Unified Plan requirement under WIOA requires new cross-sector workforce development strategies. This means that the goals and activities of a state's workforce, education, commerce, and other relevant agencies need to be synchronized and that there are ways to measure progress. Next-generation adult education technology could have strong back-end administrative and analytical tools to better inform state and regional policymakers and administrators. How can developers design programs that can serve the overlapping interests of these agencies? How can ed-tech entrepreneurs build capacity to track the return on new economic, community investments that address the needs of adult learners? How can this connect to poverty-cycle breaking initiatives such as the "two-generation" initiatives now spreading across the nation?

Cross-Sector Collaboration

- **Connecting to learning accelerators.** The fast-growing learning accelerator sector provides an opportunity to partner with non-governmental providers of job training and adult learning. To what extent should new adult basic education ed-tech solutions latch onto such efforts? How can adult learning providers compliment the skill-specific training provided by coding bootcamps or other accelerated learning providers to expand their reach and provide adult learners with new opportunities?

- **Connecting to K-12 parents in need**. As the K-12 market becomes more sophisticated in its deployment of personalized digital education, how can the adult ed-tech market create additional or expanded solutions that could serve the parents of the students in communities of need? Could adult learning providers partner with adult high school degree programs like Ohio's ADP program?

- **Extending the reach of higher education**. In higher education, the new federally-approved competency-based education programs and prior learning assessments are opening up the adult online learning market. Institutions of higher education would like to expose as many qualified adults as possible to this new model. Can a new class of adult education entrepreneurs help institutions of higher education to identify and qualify a new population of adults with the potential to succeed in self-paced and competency based learning programs?

Consumers and Corporations

- **Deeper segmentation of the consumers.** There is a wide spectrum of adult learners. Many of them can purchase technology apps and programs; some cannot. Should those who can pay subsidize those who cannot, creating something like a "Peer Scholarship" program? Should entrepreneurs develop pricing structures that incentivize this kind of cost relief for those in need?

- **Attracting the telecom providers.** At least 55 percent of adult learners use a smartphone, and that figure will rapidly increase.[55] How can the data across mobile apps be combined to further support the adult learner? Are there any other incentives for the telecom providers to help develop learning opportunities or subsidize the adult learning market? How can the growing numbers of adult learners on mobile become a sought-after market for the telecom providers?

- **Corporate social responsibility and recruiting.** According to The Committee Encouraging Corporate Philanthropy (CECP), corporate social responsibility (CSR) is stable, strong and on the rise. At the same time, corporations are under intense pressure to diversify their ranks and compete for talent. Skills-gaps in high growth and hybrid jobs persist. How could ed-tech entrepreneurs partner with high-visibility corporations or organizations to establish cutting-edge adult learning initiatives? What role can employers play in connecting the skills and competencies they demand to the design of adult ed-tech solutions that create new opportunities for adult learners?

- **Enabling the upskilling movement.** About 63 percent of "low skilled" adults are employed and, interestingly, 63 percent of employers report that a lack of employee skills has resulted in problems for their organization in terms of cost, quality, and time.[56] This is driving the UpSkill America

initiative, an effort to train employees so they can turn entry-level jobs into stepping stones to the middle class. How can adult ed-tech entrepreneurs tap into this initiative? Can they extend its reach from corporate efforts to one that connects to community based programming?

The paper began by stating that the field of adult learning has been the backwater of education technology innovation and entrepreneurship. It has been stagnant while the currents of K-12 and higher education ed-tech are swirling. This is about to change. There is much work ahead, but the imperative to do something is as big as the potential return both to the economy of the country and to the millions of adults who need extra opportunity to improve their lives for themselves, their families, and their communities.
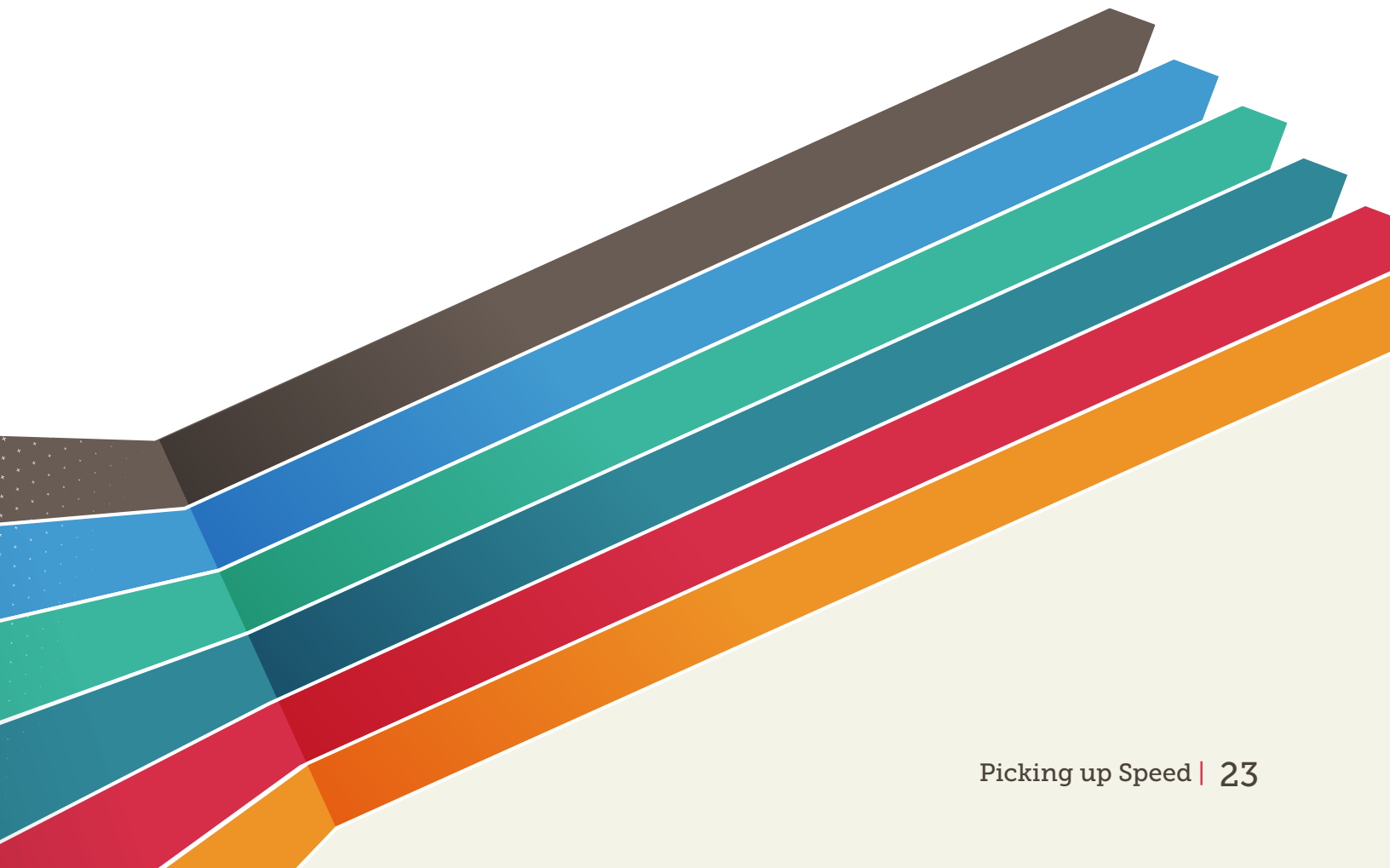
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