

TO LEARN AND EARN

ARIZONANS' EXPERIENCES COMPETING
IN THE RACE FOR GOOD JOBS



AMEPAC
ARIZONA MINORITY EDUCATION
POLICY ANALYSIS CENTER



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PREPARED FOR
Arizona Minority Education Policy Analysis Center

BY

ASU Morrison Institute
for Public Policy
ARIZONA STATE UNIVERSITY

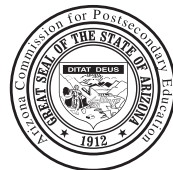
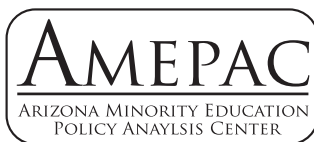
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IN SUPPORT OF TO LEARN AND EARN

“The research study To Learn and Earn: Arizonans’ Experiences Competing in the Race for Good Jobs clearly articulates the critical need for industry to work in conjunction with educators in order to develop an emphasis on STEM (Science, Technology, Engineering and Math) in our schools systems. This partnership is essential for creating a competitive global workforce in Arizona. Aggressive action must be taken now, to fuel the growth of our economy with a properly educated workforce that will improve our standard of living. Changing our culture to celebrate innovation requires a comprehensive plan and collaboration between business, academia and our government. We have an obligation to our children and our country to support this initiative with our time, funds and energy.”

Steve Sanghi, President and CEO, Microchip Technology Inc.



“The hundreds of interviews undertaken in the To Learn and Earn: Arizonans’ Experiences Competing in the Race to Good Jobs indicates that Arizona’s students and young adult workers fall into two categories: ‘aimed’ and ‘aimless.’ It also finds that a large proportion of the ‘aimless’ students and low-wage workers interviewed indicated their parents were unable to help them navigate the complexities of entering college and understanding career options. Moreover, Arizona parents interviewed expressed their frustration with their lack of knowledge and steps to improve their child’s education and career opportunities. The Education and Career Action Plan (ECAP) process recently implemented for students 9th through 12th grades is a significant tool that will help Arizona’s students transition into postsecondary education and into the workplace successfully. This research study reinforces our efforts to help all students and their families take the steps in their education that will achieve students’ and parents’ informed aspirations and goals.”

John Huppenthal, Superintendent of Public Instruction, Arizona Department of Education



“Student loan debt adds a significant burden to Arizonans, especially first-generation and low-income families. To Learn and Earn: Arizonans’ Experiences Competing in the Race for Good Jobs clearly illustrates this problem and makes important policy recommendations to alleviate loan debt and increase state-based scholarships. Arizona student leaders understand the need for investments that strengthen access to public universities and develop a diverse workforce that will stimulate Arizona’s economy. Additionally, ASA appreciates the Arizona Commission for Postsecondary Education’s use of student perspectives as part of the research for this paper.”

Robyn Nebrich, Executive Director, Arizona Students’ Association

“Education is the key that opens the door for a brighter future, not only for individual Arizona citizens, but for the state as a whole. If we want our per capita income to improve and our state’s economy to grow, then we need to do a much better job educating our youth. Other states have made significant progress in this direction and Arizona needs to stop talking about this problem and start implementing some of the known recommendations listed in this report. Without immediate action, our economy will continue to struggle.”

Craig Barrett, Former CEO and Chairman, Intel Corp.



“Preparing our workforce for future growth industries is critical to our economic competitiveness. More than 50 years ago, Arizona’s business leaders stepped up to work with the state’s educational community to support programs in engineering and sciences, which created a strong pipeline of talent and skilled workers, enabling industry to thrive in the state. This tradition of strong collaboration and leadership is reflected in recent efforts like the Arizona STEM Network and the work of Science Foundation Arizona, as well as a number of vocational training institutions. This report continues the same theme of leadership and encourages a similar commitment by today’s leaders to positively shape Arizona’s future.”

Barry Broome, President and CEO, Greater Phoenix Economic Council



“Arizona — like America — is at perhaps the most critical of economic crossroads in its modern history. To Learn and Earn: Arizonans’ Experiences Competing in the Race for Good Jobs is the most compelling evidence that has been presented in recent years as to the absolute imperative for our state to invest in education and improve how we link classroom knowledge and experiences to the jobs of today and tomorrow. From a competitiveness perspective, these next several years will determine how well our state fares in the hypercompetitive, hyperfast environment of the globalized economy. The cornerstone of our success in this post-crisis era is a renewed emphasis to tie education at all levels to the earnings and entrepreneurship opportunities that will emerge in the years ahead. In its report, the Arizona Commission for Postsecondary Education clearly articulates what we must do to ensure prosperity for present and future generations of Arizonans. As stewards of our state, public and private leaders must not only strengthen the quality of our public education system, pre-school through post-graduate, but also improve the alignment between the classroom and workplace.”

Dr. Ioanna Morfessis, President, IO.INC
Founding President and CEO, Greater Phoenix Economic Council

EXECUTIVE SUMMARY

To learn and earn — four simple words echo the ambitions of all Arizonans, and underline the critical connection between education and employment.

It's a connection that's more critical today than ever, as Arizona struggles to emerge from the Great Recession and the fiscal wreckage left in its wake. The state's litany of woes is as alarming as it is familiar. The budget cuts for fiscal years 2011 and 2012 will likely total some \$1.25 billion, representing severe reductions taken from an already diminished public infrastructure. K-12 education, which already ranks at or near the bottom of all states in per-pupil expenditures, will likely face cuts of more than \$183 million. Universities and community colleges — arguably the heart of Arizona's efforts to build a diverse, globally competitive economy — will also suffer with reductions of \$198 million for the former and \$72 million for the latter.

Nearly two years ago, the Arizona Minority Education Policy Analysis Center (AMEPAC) launched an effort to re-examine Arizona's educational achievement and economic prospects for the 21st century. Phase I of this research, titled *To Learn and Earn: Arizona's Unfinished Business in Human Capital*, was published in March 2009. The report noted the ample evidence that economic growth is now based on ideas and innovation, that science and technology are driving global economic changes and that the national and international competition is fierce.

Arizona's Unfinished Business in Human Capital also acknowledged the need to learn more about the experiences of the students, workers and employers engaged in Arizona's rapidly changing labor market. Phase II of this research project, *To Learn and Earn: Arizonans' Experiences in the Race for Good Jobs*, presents an "on the ground" look at education and employment through the eyes of those involved — or seeking to become involved — in the emerging "educonomy." This includes high school and college students, parents, young adult workers, educators, workforce professionals, guidance counselors and employers. Scores of Arizonans from the Phoenix, Tucson, Flagstaff and Yuma regions participated in focus groups, interviews and surveys in an effort to put a human face on the numbers.

Here is what we heard on-the-ground.

I. EMPLOYERS DESCRIBE HIRING TODAY

Americans of all political persuasions consider jobs the most important issue facing the country. Some Arizonans start the race with every advantage, while others have to struggle simply to get to the starting line. For their part, Arizona employers realize that their role is central to improving the workforce — i.e., Arizona's human capital. They recognize diversity as an economic asset, and value the role of educational institutions and workforce intermediaries in reaching that and other goals. They are also well aware of the challenges facing Arizona, including disparities between minority and majority groups, the lingering recession, enhanced global competition and demographic shifts brought by aging and immigration.

"EDUCONOMY"

A concept that emphasizes today's close and mutually reinforcing relationship among education, jobs and economic growth, in a world increasingly dominated by high-skill, knowledge-intensive work and global competition.

A suburban employer, in a typical comment, said, "Currently, our profession is not as diversified as we would like... The two primary issues we have with increasing the diversity of our industry are the difficulty of finding quality students to fill the roles, and [that] those that are qualified are not interested."

Looking more broadly across the comments and experiences of employers and workers in Arizona, some conclusions suggest themselves:

- Students and workers range from "aimed" to "aimless." A lack of guidance from knowledgeable adults has left many Arizonans to find their own way.
- Employers range from "compact" to "here and now." "Compact" employers commit to training and retaining their workers; "here and now" businesses are intent on who is available now, knowing their relationship may be short-term.
- Education and employment professionals range from "collaborative" to "siloeed." Obstacles remain in the effort to bring a variety of education and employment services together in a coherent whole.

Despite the recession, Arizona must drive the gradual transformation of the state's economy to that of a high-skill global competitor. This must be done, employers say, by focusing on two different approaches to workforce readiness. The first is an increasing emphasis on helping young people obtain the learning and skills that will only become more necessary in the future marketplace. As the years pass, more and more jobs — including non-technical ones — require workers to function comfortably in an environment that prizes technology and innovation. Central to this approach is the concern with STEM (science, technology, engineering, mathematics). Science Foundation Arizona, the Arizona Technology Council and other entities are among those engaged in increasing the number of Arizona's math and science teachers, providing STEM learning experiences for students and supporting policy changes that provide incentives. Still, one expert noted that the state has not yet overcome a fragmented selection of programs or articulated forcefully enough why STEM is more important than other areas of learning.

A second approach to workforce excellence has less to do with specific skills and training than with the development of the workers as individuals. This, employers say, is the crucial domain of "employability skills." One employer put it this way: "We're looking for: Are they dressed appropriately? Are they there on time? Do they have good language skills?" Even trained and gifted individuals may miss out on job opportunities if they cannot adjust to normal workplace rules and work well with others.

Yet the input from employers across Arizona contained much that was positive. Numerous interviewees felt that their efforts to work with educational institutions had paid off. "Before, we had to train people because we had so few [qualified individuals], but now we have a lot more," one said. "We have higher-caliber candidates." Employers across the state reported working more closely with community colleges and the state's universities, and participating in developing workforce programs.

II. STUDENTS, PARENTS AND COUNSELORS TALK ABOUT THE REALITY OF GETTING STARTED

In 2008, Arizona's State Board of Education approved a rule requiring an Education and Career Action Plan (ECAP)

for every student in grades 9-12. The high school class of 2013 will be the first to have this resource, which is aimed at forging stronger links between secondary and postsecondary education and between school and work. According to a survey of parents throughout the state and interviews with students and young adults, such changes cannot come fast enough.

The consensus was that career planning has too often been hit or miss. Information, alternatives, and support services are available, educators and parents say, but locating them can be difficult. Many students and young adults are missing out, or have aspirations that don't match plans and possibilities. Among survey respondents' conclusions were two: First, that success in quality K-12 programs forms a crucial foundation for later success; second, that career-oriented activities must begin earlier, preferably in middle school.

One largely untapped resource is parents, whose survey responses indicated their desire to partner with educators and employers in getting young people on the desired track. Most say that they:

- Placed high importance on science and technology.
- Disagreed that a good general education is sufficient.
- Thought career education should start in middle school.
- Did not think that Arizona's schools are doing a good job preparing students for quality jobs.

A field that has experience as to how school, skills and work can be complementary is Career & Technical Education (CTE), long a source of training for middle skill jobs, and today a site for integration of hands-on and academic learning. CTE practices also respond to employers' concerns about employability. Yet these programs are currently under scrutiny and must prove that they provide viable and rigorous pathways to both postsecondary education and career success. Although well supported by Arizona's business community, CTE programs have received reduced federal and state funding and are facing further reductions. This presents an opportunity for building the strengths of CTE into other forms of education and strengthening current CTE offerings to counter criticisms and prove the worthiness of further investment.

For first-generation college students, no easy assumptions can be made. This key segment of Arizona's population faces a series of challenges, often beginning at home. Two-thirds of Arizona adults either did not finish high school, have a high school diploma only, or some college but no degree. Thus, many Arizona children live in families without a college-going tradition.

III. WORKERS DESCRIBE THEIR EXPERIENCE IN GETTING AHEAD AND MOVING UP

Perhaps no sector of the emerging "educonomy" offers as much frustration and hope as adult education. This topic has long lingered at the margins of workforce development. The sources of frustration are not difficult to find. Arizona's workers continue to endure high unemployment and brisk job competition in a stagnant economy. They often must puzzle through information about quality job opportunities while juggling work, family and education. Some face language and literacy barriers and many remain wary of education after earlier negative experiences.

The good news is that two-thirds of respondents to an Arizona Indicators Panel survey said they had a "good job" (The panel provides a representative sample of Arizona's population, but since the survey was taken in May and July of 2008 — at the height of the recession — some respondents likely lost their "good job").¹ There is, however, a thread of frustration that runs within Arizona's employment rosters regardless to the economic cycle, evident by such comments as: "I'm tired of low-wage jobs. Where are the decent jobs?" Those who stayed at early "starter" jobs gradually realized the dead-end reality of what initially on the surface appeared to be "a good job." As one worker put it: "When you're in high school, it sounds like a lot of money. But when you're 28, and still making what you made 10 years ago, it isn't that much."

Labor market economist Andrew Sum calculated labor underutilization rates of 30%, 19% and 13% for Arizonans without a high school diploma, those with a diploma or GED, and those with 13-15 years of schooling respectively.² These low-wage adults cannot be ignored when forecasts show every worker will be needed and the majority of new jobs will require some postsecondary study.

The Arizona Business and Education Coalition (ABEC) reports that recent data anticipating needs from 2010 to 2018 show that the biggest growth in future occupations in Arizona will be in the service industries, making it even more imperative that this segment of the workforce must be well prepared.

Complicating the picture are four trends: first, unemployment has risen faster for minorities than for non-Hispanic whites, deepening disparities; second, poor prospects are pushing young adults out of the labor force; third, the recession has put more highly skilled workers into the marketplace, crowding out trainees on the way up; fourth, funding for career exploration and Career and Technical Education, the very programs that enable young people to discover their interests and apply their learning in real ways, has been reduced at both the state and federal levels.

Other states have shown the gains to be made in pursuing strategies of public awareness, tracking, combining resources and bonuses. Programs worth examining include Kentucky's Education Pays, Michigan's 2007 No Worker Left Behind, Tennessee's Completion Bonus Program, Louisiana's Opening Doors and Washington's I-BEST.

State officials and others are also working to improve Arizona's education system. Initiatives and organizations working to enhance how Arizonans learn and earn include:

- **Grand Canyon Diploma:** Passed by the Arizona Legislature in 2010, this diploma allows students to graduate from high school early and move on to postsecondary education, once they demonstrate their proficiency in key areas.
- **P-20 Alignment:** the governor's Office of Education Innovation is working to align all levels of academic and career technical education. This is also a national effort to better align high school graduation requirements with postsecondary and workforce expectations.
- **CLIP Grants:** A program, funded by the Bill and Melinda Gates Foundation, to increase community college graduation rates among low-income young adults. Mesa was among seven sites that received the first round of funding.
- **Arizona Board of Regents 2020 Vision:** The state's higher education strategic plan, which includes efforts to double the number of bachelor's degrees awarded, increase the retention rate, and increase transfers

1 Arizona Indicators panel survey on having a "good job" page 18.

2 Edwards, Kathryn Anne and Alexander Hertel-Fernandez, *The Kids Aren't Alright — A Labor Market Analysis of Young Workers*, EPI Briefing Paper #258, Economic Policy Institute, April 2010.

from the community college system. Recently, the Arizona Community College Presidents Council approved a companion document outlining the community college statewide plan and vision.

- **American Graduation Initiative:** A plan to increase federal resources available to community colleges, which will help meet President Barack Obama's goal of the U.S. having the highest proportion of college graduates in the world by 2020.
- **Science Foundation Arizona:** The public/private partnership and funding source supports Arizona competitiveness in research and development.

IV. RECOMMENDATIONS FOR MAKING CLEAR THE STEPS FOR SUCCESS IN THE RACE TO GOOD JOBS

To Learn and Earn: Arizonans' Experiences Competing in the Race for Good Jobs illustrates on-the-ground realities in Arizona. Employers are looking for better education results and greater diversity. The labor force is marked by the bright lights of the fortunate few and the sharp contrasts between the "aimed" and "aimless." Parents, students and workers have trouble finding information to help them navigate the economy. Transitions between work and education are tough for many Arizonans, and too many make decisions on little information or insight. The talents of low-skilled workers remain undeveloped because adult education programs are underfunded. Unfortunately, the many programs to recruit, direct or retrieve reach just a fraction of those who need help.

Improving K-12 education, instituting large-scale career planning, and focusing on college and career readiness will help in the long run. But without adequate data systems, leaders may simply not know how to accomplish this task. In the short run, there is still much that must be done.

Since the initiation of this research project, the recession has sent shock waves throughout the national and state economy. Millions of Americans have lost their jobs, their homes and their dreams of a comfortable future. Arizona alone has lost hundreds of thousands of jobs, and has imposed deep cuts across nearly all sectors of its budget. These unfortunate events, however, do not change this report's primary message: That the challenges and opportunities facing Arizona's students and workers revolve around the emerging "educonomy." If anything, in fact, the

recession and its lingering aftermath only underline Arizona's urgent need to strengthen and diversify its economy based upon an enhanced system of public education.

In the near-term, however, we must recognize that some of the opportunities noted here are urgent initial steps that must be taken now to establish collaborations and initiate planning, while full implementation may be delayed until the state's economy regains its health.

An outcome of the analysis of hundreds of interviews and survey responses regarding Arizonans' real-life experiences with education and work along with careful consideration of today's economic challenges have resulted in the following 14 recommendations organized under three goals.

Goal One: Promote a thriving Arizona "educonomy" through strategies directed by integrated and aligned workforce and education pipeline data.

- Disseminate integrated information regarding (1) current and projected workforce data with a focus on numbers of jobs projected and earnings potential and (2) secondary and postsecondary education pipeline data.
- Integrate statewide planning of economic development programs and educational alignment efforts through collaborative action by the Governor's P-20 Coordinating Council and the Arizona Commerce Authority.
- Set concrete goals to close disparities among the state's ethnic minority and majority populations in both workforce and education success.
- Create an Office of Education and Workforce Communication to provide channels for compelling information about the economy, economic development, and career navigation for middle school students to mature workers.
- Extend planned statewide longitudinal data systems beyond high school and college in order to track and assess skills and performance in the workforce and to identify continuing education needs for the state.
- Refocus federal and state funding sources as well as existing program funding to provide timely career information to youth and adults.
- Support the Arizona Commerce Authority in establishing an innovation fund to coordinate state and regional workforce initiatives in new industries.

Goal Two: Create and promote a new culture of achievement for all Arizonans by redefining the state's college-ready and career-ready achievement standards across all age groups to include a strong foundation in academic, workplace, and applied skills.

- Develop age-appropriate workplace, career knowledge/exploration, and postsecondary education access competencies and incorporate these into the Arizona Board of Education approved standards.
- Identify nationally validated instruments that assess workplace skills. Complete and promote a credentialing system so that all Arizonans can show employers the workplace skills they have mastered.

Goal Three: Engage all Arizonans in the culture of achievement through expansion of programs proven to enhance in-school and on-the-job success.

- Restore state postsecondary scholarships and institute programs to accelerate graduation as incentives for participation in postsecondary education and to reduce loan debt on first-generation and low-income families.
- Restore funds to backfill human services related to education and employment that were reduced because of the revenue shortfall, as soon as budget restrictions ease.
- Develop sufficient adult education capacity to eliminate waiting lists for services.
- Invest in the state's One-Stop Career Centers to ensure they have the services and capacity to assist all workers with their next career moves.

- Extend existing tools up and down the age spectrum to enhance student and workforce success including
 - A. Accelerate and extend the reach of Arizona's recently implemented Education Career Action Plan (ECAP) to include middle school, postsecondary education, and early workforce years.
 - B. Continue to expand current initiatives such as STEM, Move on When Ready, and pathways programs among Arizona's community colleges and universities.
 - C. Integrate wrap-around social services into the educational process to increase success from P through 20.

Arizona cannot afford to be a spectator in the race to good jobs. How well our students transition to the workforce, compete for career pay/career path jobs and stay on track through economic swings hinges on the state's success in providing quality education, career guidance, job training and a 21st century workforce safety net. The goals and policy recommendations set forth in this report constitute a powerful call to action. Will Arizona respond?

METHODOLOGY

The primary research for this study involved literature and document reviews, along with statewide interviews and surveys of more more than 400 Arizonans, most of them in 2010, about their experiences "on the ground" in education and work. Data collection included individual interviews with employment experts, employers, and employees; small focus groups of students and employers; and surveys of parents and guidance counselors.

AN INTRODUCTION TO ARIZONA'S UNFINISHED BUSINESS IN HUMAN CAPITAL

To learn and earn — four simple words echo the ambitions of all Arizonans and underline the critical connection between education and employment.

It's a connection that's more critical today than ever, as Arizona struggles to emerge from the Great Recession and the fiscal wreckage left in its wake. The state's litany of woes is as alarming as it is familiar. The budget cuts for fiscal years 2011 and 2012 will likely total some \$1.25 billion, representing severe reductions taken from an already diminished public infrastructure. The cuts to K-12 education, which already ranks at or near the bottom of all states in per-pupil expenditures, will likely run over \$183 million. Universities and community colleges — arguably the heart of Arizona's efforts to build a diverse, globally competitive economy — will also suffer; with likely reductions of \$198 million for the former and \$72 million for the latter.

Nearly two years ago, the Arizona Minority Education Policy Analysis Center (AMEPAC) launched an effort to re-examine Arizona's educational achievement and economic prospects for the 21st century. Phase I of this research project, titled *To Learn and Earn: Arizona's Unfinished Business in Human Capital*, was published in 2009. The report noted the ample evidence that economic growth is now based on ideas and innovation, that science and technology are driving global economic changes and that the national and international competition is fierce. It also acknowledged the need to learn more about the experiences of Arizona's students and workers, particularly the minority and low-skilled, and why employers are increasingly concerned about the preparation of the labor force.

The first installment defined human capital as the knowledge and skills necessary for stimulating innovation, creating wealth and promoting economic growth.¹ A summary of the key research reviewed in that report, along with the key policy takeaways, follows in table form.

The report noted the critical importance of ideas and innovation in driving economic growth in an increasingly competitive global marketplace. But it also acknowledges that a lack of

data about what is occurring "on the ground" with key stakeholder groups — such as Arizona's employers, students, parents, counselors and educators — regarding college and career readiness and the transition into the workforce or into postsecondary education. Policymakers need to understand the real-life experiences of business owners and human resource professionals; how students and parents view their entry into postsecondary education or career; what those who help students and returning adults make these transitions can tell us in order to improve success. Therefore, *Arizona's Unfinished Business in Human Capital* was used to formulate questions to be answered in Phase II of the project in order to help policymakers understand what is needed for a thriving Arizona economy.

Among the key questions addressed in Phase II of *To Learn and Earn: Arizonans' Experience in the Race for Good Jobs* are:

- 1) What should career planning be and do in Arizona's PK-12 system?
- 2) What would young adults say about their secondary and postsecondary time and its relationship to their work experiences?
- 3) What lessons should educators and policy makers take from employers' experiences?
- 4) Given new information and insights, what policies will help complete Arizona's unfinished business?
- 5) What tools will help Arizona continue to align education with workforce needs and integrate education, economic development and employment?

This second report presents an on-the-ground look at education and employment through the eyes of those involved — or seeking to become involved — in one or both. This includes high school and college students, parents, young adult workers, educators, workforce professionals, guidance counselors and employers. Scores of Arizonans from the Phoenix, Tucson, Flagstaff and Yuma regions participated in focus groups, interviews and surveys in an effort to put a human face on the numbers about degrees, wages,

SUMMARY OF TAKEAWAYS FROM NATIONAL REPORTS, TO LEARN AND EARN: ARIZONA'S UNFINISHED BUSINESS IN HUMAN CAPITAL

Reach Higher, America: Overcoming Crisis in the U.S. Workforce	Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Future	America's Perfect Storm: Three Forces Changing Our Nation's Future	A Future of Good Jobs? America's Challenge in the Global Economy	Beyond Social Justice: The Threat of Inequality to Workforce Development in the Western United States	Knocking at the College Door 2008: Projections of High School Graduates by State and Race/Ethnicity, 1992-2022
<p>Workforce demands require low-skill workers to become part of the high-skill pool.</p> <p>Limited literacy and skills among current adult workers are a crisis that the U.S. can no longer afford.</p> <p>To reduce poverty and inequality and serve economic needs, the skills of many Americans will have to be expanded.</p>	<p>Science and technology produce innovation, which begets economic growth and quality jobs.</p> <p>U.S. science and technology leadership is threatened by many situations, including shortcomings in developing and maintaining human capital. Leadership can be regained only with big, bold actions, such as the 1960s effort to put Americans on the moon.</p> <p>STEM (science, technology, engineering, and math) education is at the heart of progress.</p> <p>All things considered, today's underutilized minority groups are key to meeting the scale and scope of workforce demands.</p>	<p>Substantial disparities in skill levels will hamper growth. Large segments of students and adults in the U.S. have inadequate reading and math skills.</p> <p>Significant, undeniable economic changes: Widening wage gaps are a result of the continuing evolution of the nation's economy and job structure, requiring higher levels of skills from an increasing proportion of workers — many of whom are unprepared.</p> <p>Sweeping demographic shifts: An ongoing shift in the U.S. demographic profile, which is powered by aging and immigration, is shining an intense spotlight on the reality of less education and skills among more people.</p>	<p>Health insurance and health costs affect employment.</p> <p>Education is vital, but training deserves renewed commitment too because skills are developed in a variety of ways.</p> <p>Learning and working should go hand in hand for youth and adults, instead of education being separate from work.</p> <p>Low skill workers warrant special policies because of workforce needs and social costs.</p>	<p>Majority/minority disparities are now an economic drain, not just an ethical issue.</p> <p>State treasuries would benefit from erasing disparities because of revenue growth from higher earnings.</p> <p>Arizona's majority/minority disparities rank in the middle of Western states.</p>	<p>The number of high school graduates nationally will stabilize after a period of increases.</p> <p>Minority-group students will soon comprise the majority of graduates.</p> <p>A few states, including Arizona, will experience "explosive" growth in high school graduates if projections are accurate.</p>

employment, skill levels — and about Arizona's various ongoing efforts to improve them. This final installment is meant to answer the queries in greater detail.

The timing of this final report of the *To Learn and Earn* research project is fortuitous in two ways. First, recent reports from the decennial U.S. census confirm the massive growth of the nation's Hispanic population since 2000, an increase that accounted for more than half of the nation's overall growth during that period and has driven the total Latino population over the 50 million mark. In Arizona, the Census revealed that Latino children are now more numerous than those of non-Hispanic White families. This and other evidence underscore the urgent need to deter-

mine how best to educate and employ those who will increasingly be Arizona's students, parents, workers and leaders of tomorrow. Secondly, the recession and its effects on the target groups of employers, students, families, and workers are reviewed throughout this report. The on-the-ground experiences of these key groups add greater timeliness to this research.

"EDUCONOMY"

A concept that emphasizes today's close and mutually reinforcing relationship among education, jobs and economic growth, in a world increasingly dominated by high-skill, knowledge-intensive work and global competition.

PHASE II OF ARIZONA'S UNFINISHED BUSINESS IN HUMAN CAPITAL

TODAY'S SETTING

To begin, we consider three major political and economic backdrops that frame Arizona's chances and challenges in its efforts to enhance both education and employment.

A. THE IMPACT OF THE GREAT RECESSION

The initial *To Learn and Earn* report debuted in the early stages of the Great Recession. The litany of its negative effects — high unemployment, increased public service demands and the collapse of state and local revenues — is all too familiar. K-12 education alone has lost hundreds of millions of dollars in recent years, while universities and community colleges also have endured millions in reductions. Even some of the more than 200 state-licensed private postsecondary institutions in Arizona have been affected. Cuts have hit numerous key human services, such as AHCCCS (Arizona Health Care Cost Containment System), mental health services and childcare subsidies. Economic forecasters report that it may take another four to six years to return to the job levels reported at the beginning of 2008.² Since public revenue growth lags economic recovery, lean years will be the norm for Arizona for the foreseeable future. The passage of a temporary 1-cent state sales tax represented a robust public endorsement of quality education and kept many programs from disappearing altogether. But it is just a stopgap measure. The decline in housing values is beginning to show up in reduced property tax revenue for K-12 districts and community colleges. At the same time, many Arizonans are returning to community colleges and private institutions in search of more skills.

Arizona's years of leading the nation in growth may have come to a halt. The Great Recession and the controversy over undocumented immigrants in the state have persuaded many of Arizona's 6.4 million residents to seek greener pastures elsewhere. A 2010 poll from Behavior Research Center showed that 13% of Arizonans — notably including younger people and Hispanics — were considering leaving the state within the next year. The major reason, cited by 52%, was to find a better job.³

While the headlines focus on total population issues, the reality is that Latinos remain the fastest-growing component of the state's population. Today, non-Hispanic Whites outnumber Latinos by just over 2 to 1. However, projections show Arizona to be a "minority majority" state by approximately 2025. Higher birth rates among Latinos and some other minority communities point toward a steady supply of young people, which — given the nation's aging population — is good news for Arizona. Yet, the historic underrepresentation of Latinos and other minorities in high school graduation, postsecondary completions and high-skill occupations creates a potential mismatch between the desirable jobs and the workers to fill them. The issue is already apparent. Of the nearly 1 million Latino residents 25 years-old or more, only 10% have a bachelor's degree or higher and 40% lack a high school diploma.⁴ For non-Hispanic Whites, the figures are roughly reversed.

The recession has been hardest on two groups in Arizona: young workers and low-income adults. Labor market expert Andrew Sum has called today's situation "a truly Great Depression among the nation's low-income workers amidst full employment among the most affluent."⁵ Sum and his colleagues have shown that men, workers under 30, the less well-educated and blue collar workers have been disproportionately affected — especially if these workers are also minority-group members. College graduates, professional workers, managers, and government employees fared better, at least for a time. Similar conclusions applied to the underemployed.

It's thus not surprising that many young people are spending more time dependent on parents and families, and seem to be at greater risk for missing out on career path/career pay jobs. In recent decades, many youths' process of becoming an adult — leaving home, completing school, entering the workforce, getting married, and having children — has become more extended. Today it is not unusual to hear about "boomerang" kids or to see parents supporting offspring through their 20s. A recent *New York Times Magazine* article explored the "post-adolescent, pre-adult,

not-quite-decided stage.”⁶ Some students are staying in school longer to escape a dismal labor market. Others are simply spending time unemployed or underemployed — a particular concern, as the first 10 years of work can be crucial in determining an individual’s long-term success in the labor market.

B. EDUCATION, WORKFORCE AND LEGACIES

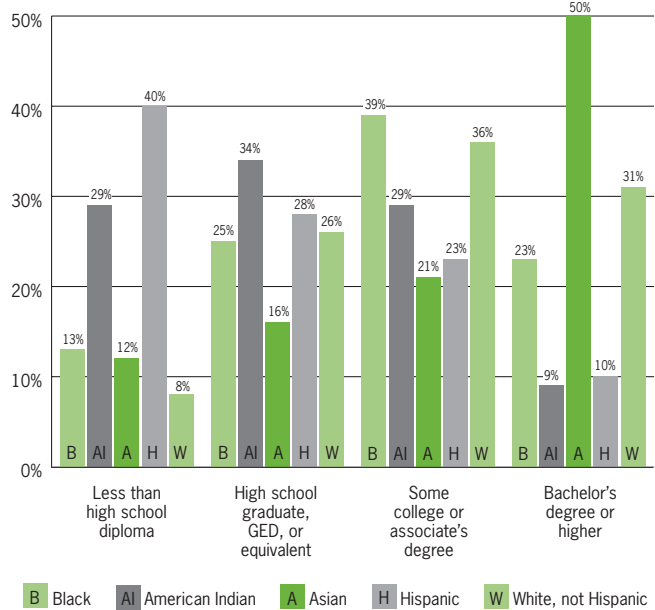
Arizona’s P-20 education systems are large and diverse, and even a steep economic downturn has not dampened Arizonans’ desire to improve them. This second backdrop notes education changes in the last legislative session, including grading school performance on an A-F system and approving the Grand Canyon Diploma, which puts the individualized “move on when ready” concept into practice. This backdrop also highlights such initiatives as participation in the national *Pathways to Postsecondary* effort, efforts to better align community college and university study, the Arizona Board of Regents Vision 2020 plan and the 2008 approval of the Arizona Education and Career Action Plan (ECAP).

These and other initiatives will help improve a network of statewide education programs that serve Arizonans from childhood to retirement:

- Arizona’s K-12 districts serve more than 1 million students, of whom more than half represent minority groups.⁷
- Arizona has long been a national leader in charter schools, which now serve some 132,000 students, many of whom are minorities.
- Career and Technical Education teaches more than 100,000 students each at the secondary and post-secondary levels in 16 career clusters and many skill-specific programs.⁸
- Joint Technological Education Districts, multi-district secondary career and technical education institutions, reach more than 20,000 students.

- Public and private postsecondary enrollment includes more than 388,000 Arizonans. Over the last decade, the proportion of minority students has increased steadily.⁹
- Adult education teaches approximately 25,000 adults and administers the GED to approximately 21,000 Arizonans.¹⁰ The programs consistently have a waiting list that tops 7,000.¹¹
- Arizona Workforce Connection, the umbrella for the One Stop Career Centers and the center of the public workforce investment system, serves nearly 16,000 adults, dislocated workers, and youth. The One Stop system includes 13 partner federal and state programs.
- College access programs help thousands of students and adults stay in and return to school, increase literacy, enter the workforce, obtain better jobs, and provide a wide range of support services.

EDUCATION VARIES ACROSS RACIAL AND ETHNIC GROUPS



Source: American Community Survey, U.S. Census Bureau.

LEARNING LEADS TO EARNING

Arizona has nearly 2.5 million residents of prime working age 25-64 years old. Just over a quarter of all Arizonans age 25+ have a bachelor’s degree or higher. In Arizona, the difference in median earnings between a person with a high school diploma and one with a bachelor’s degree is \$21,353.

Source: National Center for Higher Education Management Systems.

Perhaps most important, officials and educators are determined to ensure that students are college and career ready as they graduate from high school. Simply increasing the state's high school graduation rates has given way to focusing on students' readiness for postsecondary study and work and to developing multiple pathways to needed skills and credentials. In turn, the goal has become degree and program completion rather than enrollment. Although Arizona was not successful in securing federal Race to the Top funding, the Governor's Education Reform Plan will serve as a roadmap for enhancing learning in science, technology, engineering, mathematics, student data systems and more.

These efforts will produce results over time. However, Arizona faces difficult short-term problems due to its legacies of minority/majority disparities, dependence on newcomers for skills, inadequate integration of workforce development, education and economic development, and lackluster educational performance. Some examples:

- Arizona adults lag the nation in nearly every measure of human capital. Just over 25% of Arizonans 25+ have a bachelor's degree or higher, which is below the U.S. level of 27.5%. Some 825,000 Arizonans 16+ lack a high school diploma or GED and are not enrolled in school. Almost 90% of adults enrolled in adult education classes read below the 9th grade level.¹²
- More than 246,000 Arizona adults cannot communicate effectively in English.
- Relatively low levels of education, particularly among minority residents and those educated in-state, also pushes incomes down. Per capita personal income stood at \$34,339 in 2008, compared to more than \$40,000 nationally.
- Among minority residents, median household income is nearly \$20,000 below that of non-Hispanic White residents.

A rare bright spot: Arizonans with some college return to school at close to the nation's highest rate.

The young and the old will play key roles in Arizona's labor market. A state whose growth has long been driven by newcomers, Arizona will now see its growth come primarily from a natural increase among its existing population — especially among its Latino residents. The overall pattern will be one of baby boomers leaving the labor force in increasing

SCHOOL-AGE AND YOUNG PRIME-AGE WORKERS ACCOUNT FOR MORE THAN HALF OF ARIZONA'S POPULATION

<18	18-24	25-44	45-64	65+
26%*	9%	28%	23%	13%

*Percentages may not total 100 due to rounding.

Source: American Community Survey, 2006-2008.

numbers and young Latinos seeking to enter it. However, important caveats remain. For one, widespread concerns surfaced a few years ago about labor shortages as boomers' retirement years approached; however, the economic downturn has slowed the boomers' exodus from employment. This eases job-shortage concerns but also means boomers are not making way for young, often Latino, workers to move in and up. Secondly, boomers tend to have more skills than younger workers, an especially important difference in today's and tomorrow's economy. In any case, Arizona's labor force soon will have to lean on the youth who have been under-represented in education and high-skill employment. If the road to adulthood is to lead to career pay/career path jobs, the "educonomy" will likely be the pathway.

C. GLOBAL COMPETITION MEANS DISAPPEARING JOBS AND EMERGING JOBS

There is a critical distinction between the battered general job market on one side and emerging, relatively healthy high-skill fields on the other. Concerning the general labor market, long-time observers say the job drought may be altering long-term hiring patterns, and express concerns that employers may be bypassing Arizona because of an unappealing combination of budget deficits and political turmoil. Concerning the emerging job market, there is increasing realization of the shift to an "educonomy" — in which education and economic growth are mutually reinforcing. Yet many businesses say they still have trouble finding the specialized skills they need. The latest "return-on-investment" study for Science Foundation Arizona showed growth in investment and jobs during the downturn, despite Arizona's lag behind benchmark competitor states.

To boost Arizona's economic development practices, Governor Jan Brewer created the Arizona Commerce Authority, a public-private entity that will replace the Arizona Department of Commerce. Modeled after a similar agency in Florida, the new institution is intended to integrate universities, community colleges, and workforce development resources with efforts to attract and retain businesses in aerospace, science,

ECONOMIC DEVELOPMENT AND WORKFORCE DEVELOPMENT HAVE EVOLVED SINCE THE 1990S

Role of Statewide Economic Development	1990s	21st Century
Workforce development	Granting of job training funding	Programs aligned with targeted growth industries to develop and maintain a prepared workforce
Business recruitment and expansion	Focus on regional competition	Focus on global competition
Business retention	Focus on attracting new companies	Focus on “economic gardening” or growing and maintaining existing companies related to the long-term vision
Business prospects	Leading business recruitment	Leading business recruitment but deferring to regional economic development groups
Strategic partnerships	Partnership with regional and local economic development groups	Partnership with regional and local economic development groups, higher education, scientific groups, research groups, and foundations
Public policy	Focus on business costs, quality of life, and regulatory friendliness	Alignment of taxes and regulatory functions and promotion of policies and programs that support innovation and entrepreneurship to advance the state’s long-term vision
Small business support	Advocacy and start up support	Focus on entrepreneurial environment to maximize growth opportunities
Rural economic development	Community development and local planning grants	Integration into state programs and regional collaboration

Source: Sara Dial and Associates.

technology and solar energy. The Authority is also expected to work closely with existing regional efforts, such as the Greater Phoenix Economic Council and the Economic Development Collaborative of Northern Arizona. Thus, even while Arizonans suffer through the recession, they can still glimpse the future possibilities in high-tech sectors, renewable energy, health care and R&D at Arizona’s universities. Economic development incentives were discussed at length in the last legislative session after a study by Elliott D. Pollack and Company showed Arizona lacked the tools most other states have to attract and retain quality employers. As Arizona works to revive its economy, young adults will be key, both to keeping the best of the present and growing future industries. At present, however, it’s difficult for many of them to get started down the path of career success.

Economists have shown that the education and skills needed to win the race for quality jobs cannot be achieved without enhancing learning among adults as well as young people. In Arizona, many leaders have realized that the fragmentation of federal, state, and local programs must become a thing of the past. The most notable recent trends have been increasing efforts to align academic and occupational skills with support for regional economic develop-

ment and evidence-based programming. In short, today’s adult systems to learn and earn are replacing a focus on age with one on achievement, and creating an enduring culture of learning.

D. CONTINUUMS OF JOBS AND PEOPLE

According to a recent Gallup poll, Americans of all political persuasions say jobs are the most important issue facing the country. Worries about work outpace other topics in Arizona, too. As we will see, some Arizonans start the race with every advantage, while others have to struggle simply to get to the starting line. There is not one experience of education or employment; or not just one way to learn and earn.

Students and Workers range from “Aimed” to “Aimless”

Lackluster high school years and few positive counterbalancing experiences have left many students and adults of all ages “aimless.” Others, however, are “aimed” for success in college and work. The aimless portion of Arizona’s workforce is on a treadmill. The aimed portion is on an escalator, moving to the next level unless they choose to get off. A lack of guidance from knowledgeable adults has left many Arizonans to find their own way. Customized support is available, but most fail to find it or it fails to find them.

Employers range from “Compact” to “Here and Now”

One group of Arizona businesses includes “compact” employers, who commit to training and retaining their workers and improving their communities’ competitiveness. Another comprises “here and now” businesses, intent on who is available now, knowing their relationship may be short-term. As Arizona tries to restart its economy, the “compact” employers are the prize.

Education and Employment Professionals range from “Collaborative” to “Siloed”

Efforts to bring a variety of education and employment services together in a coherent whole that can address Arizonans’ individual needs have been fruitful, but there is much more to do. Bureaucratic sclerosis and battles over “turf” persist. Still, the collaborative service-providers who share ideas and remain open to new approaches are making progress. Meanwhile, it is hoped those who labor alone in bureaucratic “silos” will realize that they are following the ways of the past.

Arizona’s challenge, though daunting, is clear: Design systems and services to help more Arizonans survive the Great Recession, overcome the negative effects of past legacies and help power the gradual transformation of the state’s economy to that of a high-skill, global competitor.

In the following pages, involved Arizonans offer points for how this might be achieved.

An economy still reeling from the Great Recession; a dynamic educational sector determined to make Arizona’s young people college and career ready; an emerging “educconomy” driven by increasingly intense global competition. These are the backdrops to our examination of the goals set and challenges faced by the state’s public officials, employers, educators, parents and young people. Based upon document reviews, public hearings, expert commentaries, surveys and interviews across the state, the findings reflect an increasing convergence of needs and aspirations among these key constituencies, which — in Arizona as in other states — must together forge a sort of “educonomic compact” to meet the abundant opportunities of the 21st Century.

LIMITED LEARNING HAS COSTS

Labor economist Andrew Sum quantified the benefits of a better-educated populace for the Arizona Department of Education. Each Arizona adult without a high school diploma costs Arizona more than \$16,500 over his/her lifetime. Just a year or two of postsecondary education bumps the average annual contribution to the state coffers by \$9,023 per year and \$411,450 over a lifetime.

Source: The Labor Market Experiences and Earnings Fortunes of Arizona Working Age Adults 18-64 Years Old by Educational Attainment, November 2009.

I. EMPLOYERS DESCRIBE HIRING TODAY

A group of Yuma employers who met recently echoed concerns that are all too common among Arizona's educational and business communities. These businesspeople knew each other well from years of working to improve education and develop the economy. They had accomplished a lot, but saw their work was nowhere close to finished, particularly given the changes in the economy and the rising demand for technically skilled team players. They did not all share the same labor needs, but were unanimous in recognizing the value of preparing workers — both youth and adults — to achieve high standards. They would agree with the Ford Motor Co. executive who said workers must:

- Possess the academic skills, core competencies and enthusiasm necessary to become engineers, scientists, entrepreneurs and other STEM-related professionals.
- Be capable of working together across the globe to solve complex problems.
- Manage projects and provide leadership to multi-functional teams.
- Anticipate opportunities and/or problems, research issues and pull subject matter experts together to take advantage of new ideas.
- Recognize that business acumen and environmental sustainability are elements of every job they will compete for in the future.¹³

EMPLOYERS SAY WE NEED DIVERSITY

David Longanecker, CEO of the Western Interstate Higher Education Commission, has written that “it has become clear that closing educational attainment gaps is a matter of economic necessity if we are concerned about the future prosperity and security of our nation.”¹⁴ The combination of disparities between minority and majority groups, significant economic changes, and demographic shifts brought by aging, diversity, and immigration is shining an intense spotlight on the reality of less human capital among more people. These trends have been in play for long enough now that they are forcing employers to view their interests in a new light. As one metro Phoenix technology expert said, “The majority of our workforce is white males. That is not how the world is.” Another agreed: “There is a

lack of racial diversity in our industry. We're trying to change this by recruiting at the high school level.” A suburban employer said, “Currently, our profession is not as diversified as we would like. We want to change this. The two primary issues we have with increasing the diversity of our industry are the difficulty of finding quality students to fill the roles, and [that] those that are qualified are not interested.”

Neither this problem nor efforts to address it is new. Human resources recruitment has had three main thrusts for decades: Increasing the size of the overall talent pool, attracting workers passed over in the past and welcoming nontraditional students. The effort has resulted in steady progress in enrollment and degree completion. For example, Arizona State University minority enrollment increased to 29% in 2010, up from 21% just 10 years ago. During the same 10-year period, minority degree completion at ASU increased to 25%, up from 20%. Results at Northern Arizona University and the University of Arizona during the same time period have been similar. NAU minority enrollment increased to 25%, up from 20%, and minority degree completion increased to 23%, up from 17%. At UA, minority enrollment increased to 28%, up from 25%, and minority degree completion increased to 26%, up from 24%.

New state policies such as the Move On When Ready and the Education and Career Action Plan (ECAP) also help more Arizonans achieve at higher levels. Proven strategies include experience with the demands of obtaining and retaining financial support, guidance counselor assistance, emphasis on academic readiness, as well as family and institutional support. Several Arizona programs provide examples:

- **MESA (Mathematics, Engineering, and Science Achievement)** at the University of Arizona is an intensive college preparation program for minority, low-income and first-generation college students. It began in 1984 and has been honored by the Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring. Through hands-on activities, the program builds academic and personal skills. More than 1,000 students from middle and high schools across southern Arizona currently participate in **MESA**.¹⁵

- The optics industry is deeply rooted in Tucson and the University of Arizona. The **Hands-On Optics Program**, sponsored by Science Foundation Arizona, introduces students in Bisbee, Sells, Prescott and Safford to this field after school and during summer experiences at local community organizations. Started in 2007 with curriculum from the National Optics Association, the program is seeking to expand to other rural Arizona locations including Benson, Sierra Vista, Tuba City and Yuma. The curriculum exposes students to scientific careers by engaging them in high-quality instruction that is fun and imaginative.
- Part of the Institute for Tribal Environmental Professionals (ITEP) at Northern Arizona University, the **Environmental Education Outreach Program (EEOP)** seeks to interest Native American students in environmental careers and to assist schools in improving environmental science literacy. EEOP does this by mentoring and advising students on career choices and post-secondary educational opportunities; providing on-campus experiences such as Summer Scholars for students and educators; coordinating student internships with the Environmental Protection Agency (EPA) or with tribal environmental offices; providing teachers with the support they need, and other activities. The development of such partnerships will build bridges between the traditional values of Native American people and Environmental Education.¹⁶
- The **Motivated Engineering Transfer Students (METS)** program at Arizona State University provides engineering and computer science community college transfer students, especially minority and women, a solid platform of workshops, mentoring, a study center with computer and printing access, and a variety of student resources and events to enhance students' transition to ASU. The program is currently funded by

a \$2.5 million five-year grant from the National Science Foundation to support the METS Center and to support the partnerships of the ASU Fulton Schools of Engineering with Arizona Western, Central Arizona, Eastern Arizona, Cochise and Mohave Community Colleges. In addition, transfer and non-transfer students are supported with scholarships and an Academic Success one-credit class each semester through two S-STEM grants from the National Science Foundation.¹⁷

Postsecondary Education and Employment Options

The role of postsecondary study in the nation's past economic growth has been well documented. Calls for renewal of this emphasis have been broad based. President Obama has challenged the U.S. to lead the world in college graduates again by 2020. The Arizona Board of Regents' 2020 Vision lays out how Arizona can rise above the national average in educational attainment by 2020.¹⁸ Anthony Carnevale, a leading labor market policy analyst, is the latest expert to show how education, jobs and economic development fit together. He confirms the critical role education plays in obtaining middle-class career pay/career path jobs. His state-by-state analysis shows the importance in Arizona of the convergence of the "educonomy:"

- 61% of all jobs in Arizona will require some training beyond high school in 2018.¹⁹
- Arizona ranks 37th in the proportion of jobs that by 2018 will require a bachelor's degree, and 5th in jobs for high school dropouts.
- Arizona will create 907,000 job vacancies by adding new positions and from openings due to retirement. About 554,000 of these vacancies will require postsecondary credentials, 231,000 will require high school completion and 123,000 will be available for high school dropouts.

OCCUPATIONS SHOW WHERE MINORITY WORKERS ARE TODAY, 2008

	Total Employ	Executive Senior Officials Managers	First/Mid Level Officials Managers	Prof	Tech	Sales	Office/ Clerical	Craft	Operatives	Laborers	Service Workers
Majority	579,145	11,434	62,602	124,813	37,449	86,313	92,142	31,471	36,467	22,057	74,397
Minority	367,902	1,619	16,798	38,109	17,734	43,232	57,911	30,950	43,225	47,886	70,438

* This report reflects occupational status at private firms with more than 100 employees.

Source: Equal Employment Opportunity Commission, EEO-1 *, 2010.

Carnevale’s work also demonstrates the importance of focusing attention on occupations before industries. “The emphasis on post-secondary preparation for new hires means that workers will tend to be attached more to the occupations they will be filling than to the specialized industries in which they work. People do not go to work in industries anymore. They get educated or trained, go to work in occupations and progress in an occupational hierarchy.” The point is not to give all Arizonans the same postsecondary experience or to channel everyone into the same jobs. Rather, it is to encourage learning institutions to adjust quickly to changing needs in the marketplace so as to help Arizonans to plan wisely.

Improving Education is Not the Only Change Needed

From Flagstaff to Yuma, employers in technology, consumer and health fields had plenty to say — good and bad — about Arizona’s students and educational institutions. Some bluntly said the system had failed to provide Arizonans with the hard and soft skills employers want. “Education from pre-K on up to the college level needs to be changed,” one said. “The quality of schooling in Arizona is lower than other states and can be seen with how college students approach us as a company.” A Maricopa County employer reported looking out of state for the most specialized areas, whereas a Northern Arizona business hired in-state or out depending on the type of job. “I look outside of Arizona for some IT skills, but we are an attractive employer here for local college graduates,” he said. “We also train some entry-level workers from the community.”

The Arizona Business & Education Coalition (ABEC) reports that several multinational companies among their members say they do not even hire entry-level workers, but seek employees with advanced degrees — and recruit from outside the state. Key economic development experts said at a recent ABEC panel that, when “selling Arizona,” they promote the concept of “choice” that exists in this state rather than mentioning Arizona school systems. Rural Arizona has a tougher time with economic development. Moreover, a panelist stated “the belief that young people don’t need more than a middle school education is too often prevalent in rural parts of the state. There’s an expectation that these kids will work in the mines or on farms and don’t even need high school. Our residents leave our community and work in either Tucson or Phoenix. We simply cannot attract companies to come here.”

A Mesa employer was one of many to push for greater connections between schools and companies. “We need to start talking about job-related training earlier, involve industry, be innovative and introduce a well-rounded curriculum,” he said. “I believe there are a lot of good students who just don’t get exposed to what opportunities there are out there. We need to get a young person into an organization just to see what’s possible for them.” Nearly all the business representatives consulted wanted closer, more candid relationships between employers and educators. “Invite corporations in to talk to students beginning in grade school,” one said. “If you get to students early enough, they’ll be in a better position to know what they want to do in life and can make better decisions about their studies and future career.”

However, an air of pessimism permeated some conversations because of the economic downturn’s implications for Arizona’s business environment and quality of life. “With all the budget deficits and budget mandates, can we have a successful education system 10 years from now and be able to afford it?” one employer asked. “I think we’ve got to

DEFINING SKILLS: ACADEMIC EMPLOYABILITY, AND APPLIED

ACADEMIC

- Reading comprehension**
- Verbal and quantitative reasoning**
- Mathematics or computational skills**
- Writing and written communication**
- English proficiency**

EMPLOYABILITY

- Showing up dependably and on time**
- Good attitudes and workplace habits**
- Following directions, completing tasks**
- Ability to work in teams or collaboratively**
- Self-knowledge and career management ability**
- Active listening and active learning**
- Adaptability and flexibility**
- Professionalism and work ethic**

APPLIED

- Creativity and innovation**
- Leadership**
- Critical thinking and problem solving abilities**
- Interpersonal skills and ability to work with diverse individuals**
- Speaking**
- Computer skills and knowledge**
- Job-specific or industry-specific skills**

Source: Association for Career and Technical Education.

stop and think about the whole system....” These business people urged Arizonans to embrace striving for a place in the top tier of human resources and competitiveness. That might also help to counteract the negative national publicity about Arizona that some fear is turning potential talent and employers away. “We feel that we will have difficulty attracting students from prestigious schools,” one said. “We feel that the image of Arizona as a ‘backwards’ state will deter those without family ties from coming here.”

Interviewees also identified bright spots, including some improvements in skill quality. One also mentioned his firm’s positive experiences with a retooled university marketing program from which the employer now hires. Numerous interviewees felt that their efforts to work with educational institutions had paid off. “Before, we had to train people because we had so few [qualified individuals], but now we have a lot more,” one said. “We have higher-caliber candidates.” Employers across the state reported working more closely with community colleges and the state’s universities, and participating in developing workforce programs. As a result, one said, “Community colleges are doing a better job of preparing students for the workforce.” In fact, a Northern Arizona employer wished that community changes were as easy as working with the community colleges. “Community colleges provide the skills we need. But the limited quality of life in some of our locations outside of Phoenix and Tucson is something we have to deal with. Either people are willing to work in small towns or they aren’t.”

SHOW US THE STEM

Science, technology, engineering and math (STEM) professions are receiving increasing attention as critical to successful workforce development across a variety of fields. “We need employees with those science and mathematics skills,” a metro Phoenix employer said. But getting the right mix, according to another, can be a challenge. “In order for a student to get to calculus in high school it is really dependent on a good math scores in 6th grade,” he said. “But for most elementary grade teachers, math is not their forte.... Having staff to teach STEM in these grades is not happening.” This employer said he found the same to be true of high school counselors. “When I showed 45 of them a list of the fastest-growing industries, most of them were STEM-related industries. When I asked how many of them had a knowledge of, or a first degree in these areas, only one had...”

One large Phoenix employer representative said his firm was worried enough to take the matter into its own hands. “We realize that, down the road, the labor pool we’re looking for won’t exist if we don’t do something about it. Our national company is putting in millions of dollars to 6th and 7th grade programs to get them involved in STEM.”

Employers also questioned whether students were gaining the appropriate skills for their firms’ specialized situations. “Currently, the biomedical industry has found itself short of the scientists needed to fill the current and future void,” one said. “We are finding that students are not focusing on degrees in the hard sciences. We are required to provide more and more on-site training than we ever have before because of this. The undergraduate student does not work with industry through his/her education and consequently does not know what is expected of them. Undergraduate students need to be up to standard, and they need to take real-world science classes.”

Concern with STEM achievement has cycled up and down in the past. Science Foundation Arizona, the Arizona Technology Council and other entities are among those engaged in increasing the number of Arizona’s math and science teachers, providing STEM learning experiences for students and supporting policy changes — such as loan forgiveness for new STEM teachers — that provide incentives. Still, one expert noted that the state has not yet overcome a fragmented selection of programs or articulated forcefully enough why STEM is more important than other areas of learning.

But some progress is being made. In 2009, for example, Science Foundation Arizona announced the **Cochise College Running Start Academy**, a career institution for mechanical and electronics engineering. Through the academy, Cochise College helps local schools set up middle and high school STEM pathways to higher education. A pilot program set for possible statewide expansion, the academy has instructors prepare students for undergraduate studies in applied engineering and science, leading to an internationally recognized Siemens Mechatronic Systems Certification. Running Start is expected to help supply high school graduates who can help attract and grow tech-based jobs in Arizona. **Pathways to Science** at the University of Arizona combines information about STEM from K-12 through post-docs, faculty and administrators. At Arizona State University, STEM promotion is about cultivating a new

generation of students. One program, called **Learning through Engineering Design and Practice: STEM for an Equitable Future**, engages underrepresented youth at two Mesa junior high schools in a year-round, hands-on curriculum that includes robotics. The point is to “redefine how we use technology, to think about how it can make our lives better, enrich our surroundings.”²⁰

EMPLOYABILITY SKILLS

In simple terms, employability skills are about being capable of getting and keeping fulfilling work. This is often a crucial topic for employers, and those interviewed for AMEPAC were no exception. Employers in Central and Southern Arizona said many Arizona graduates might bring “book” learning to their firms, but too often lacked a worker’s mind-set and the requisite interpersonal skills. “Students lack communication and etiquette skills,” one said. “The student needs to be more well-rounded; the industry requires the student to be able to write and [explain] the project and present the project to others.”

EMPLOYABILITY SKILLS

A person’s capability of gaining initial employment, maintaining employment, and obtaining new employment if required (Hillage and Pollard, 1998).

While many applicants reportedly do bring employability skills, others were said to be missing a strong work ethic and an ability to fit into a corporate setting. Young workers were said to act as if they do not have to work hard to achieve or to compete against unemployed workers seeking jobs. A representative of a substantial Yuma organization noted, “There’s a false sense of security we put in young people. We tell them they’re smart, good looking and they’re going to college — and they come out thinking they are special. We’ve had huge success with people who come to us after having a couple of really bad jobs, because then they realize we pay well and give good benefits,” he said. “But those coming straight out of school we struggle with. They think they’re entitled.”

Another Southern Arizona employer commented: “I see this pattern of employees: First, there are the basic worker bees who just do the work; then, there are those with real ambition — they are few and far between; and then there are the middle group who believe that longevity in the job should entitle them to promotion.”

Such complaints about new workers may seem like merely echoes of the usual tension between generations. But those who hire and fire say the differences are real and troubling. “For a lot of new grads, social media is like breathing,” one said. “But they need to understand that they are in someone else’s house and they need to learn what to expect.” Another said: “Whether the transition is from high school or college, students in some respects have the same issues — the critical thinking skills aren’t there. They have a ‘drop-down’ mentality: If the answer isn’t on the drop-down menu, they’re at a loss. They may be well trained as a nurse, but the critical thinking skills are missing.”

“We’re looking for: Are they dressed appropriately? Are they there on time? Do they have good language skills?” another employer said. “We struggle with that. But maybe we’re targeting this discussion at the wrong people. Maybe we should be telling parents, ‘It’s about time you did something about some of these things.’”

THE TIES HAVE LOOSENEED

Some employers also acknowledged that some tough workforce issues might just be traced back to them. Taxes provide an example. Arizona schools are funded by property taxes. Business pays more tax than residents on the assessed valuation of their operations at a rate that is higher than other states in the region, making Arizona firms less competitive than their neighbors, according to ABEC. When business property taxes are reduced, while there are benefits to Arizona business, the effects are also felt in the funding levels for Arizona schools. One of the quandaries is how to balance the calls from business for increased student performance with the reductions in funding for schools due to reduced property taxes. However, as an economic developer said, “I’ve never lost a company to the area because of the tax environment — but I have lost them because of the workforce.”

Much has been made of the fraying of connections between employees and employers. Cost-cutting through layoffs and downsizing has taken a toll, creating many reluctant retirees and frustrated jobseekers. A variety of respondents noted, “The graduate sometimes has a higher expectation of the employer than they can deliver.” Some suggested developing a 21st century safety net to help revive a shared sense of loyalty. “We want loyal employees, but we’ve created a

world now without security,” one said. “There are a lot of companies that don’t have a retirement program anymore.”

Even with such changes, many Arizona employers remain models of “compact” businesses — proud of their support of, and commitment to, helping employees succeed. “I want to train them as to how our system works,” one said. “We should be providing what we want them to be in our organization.” Another said: “Our employees have the training readily available for the people, leadership, and technical skills necessary to move up. We, as a company, feel that employees should continually grow and should be continually moving up in our company.”

Interviewees pledged to work with other partners in workforce quality and economic growth. They suggested more collaboration with businesses, so that young workers see firsthand what is expected of them. Employers want reciprocal relationships, where they go to schools and students or workers come into their world. These comments revealed a central issue for everyone concerned about learning and earning: Employers have been relatively insular, making employment seem to outsiders like a black box. As a result,

there is a continuing need for ways to enable students and workers to see into that box, and for employers to step out of their spaces.

THE TAKEAWAYS: WHAT LESSONS SHOULD EDUCATORS AND POLICY MAKERS TAKE FROM EMPLOYERS' EXPERIENCES?

- **A diverse workforce is an economic asset. Filling disparities makes business sense.**
- **Arizona should embrace moving to the top tier in human resources, including a new culture of achievement.**
- **Employability is a key skill that many Arizona students and workers lack.**
- **Career planning should start earlier and include employers as partners.**
- **A 21st century “safety net” for workers may be needed given the frayed connections between employees and employers.**

WHAT STANDS OUT ON THE GROUND?

Employers want to be central to improving the workforce. Educational institutions and workforce intermediaries are important as bridges between employers and residents.

II. STUDENTS, PARENTS AND COUNSELORS TALK ABOUT THE REALITY OF GETTING STARTED

In February 2008, Arizona's State Board of Education approved a rule requiring an Education and Career Action Plan (ECAP) for every student in grades 9-12.²¹ The measure said the plan "reflects a student's current plan of coursework, career aspirations, and extended learning opportunities in order to develop the student's individual academic and career goals."²² The high school class of 2013 will be the first to have this resource. It and the companion Arizona Career Information System are aimed at forging stronger links between secondary and postsecondary education and between school and work. According to a survey of parents throughout the state and interviews with a cross-section of high school and college students and young adults, such changes cannot come fast enough.

PARENTS VALUE EARLY CAREER INFORMATION

Young adults often said they turned to their parents for help in deciding about careers, postsecondary education, or training. But as counselors and workforce professionals reported, parents may not have all the facts they need to give good advice. "Parents want their children to go to college," one said, "but often lack the background, time, or understanding to truly be involved." In a statewide survey, parents did indeed support college and wanted, as employers did, early exposure to career information. More than 80% of parents thought career planning should begin in middle school. Some young adults echoed this sentiment, suggesting that information about specific careers should be integrated into curriculum early on — particularly in light of their own experiences being "aimless."

The majority of parents:

- Placed high importance on science and technology.
- Disagreed that a good general education was sufficient.
- Thought career education should start in middle school.
- Did not think that Arizona's schools are doing a good job preparing students for quality jobs.

Parents are a largely untapped resource for partnerships with educators and employers in getting young people on the desired track. However, their survey responses also could represent aspirations and assumptions rather than the actions parents are actually encouraging their children to take. They may perceive these items as important, but lack the information to help their children make wise decisions. Many counselors focused on parents' isolation from students' plans. An unemployed young adult said: "My parents didn't push me in high school or talk about college. They didn't go to college. I wish they would have encouraged me more." Such sentiments emphasize the importance of raising awareness among all family members about jobs, college and planning. Parents clearly have a bigger part to play if their positive attitudes can be tapped for their children.

THE DREAM/REALITY GAP

Students in high schools and alternative programs say they won't just go to college; they will go on to do great things as marine biologists, doctors or other professionals. And many of them will. But ask a few more questions — or talk to high school guidance counselors and workforce professionals — and it becomes clear that many young Arizonans have precious little knowledge of the planning and resources needed to achieve the dreams they readily describe. They have little grounding in economic realities and the middle- and high-skill jobs that could support them and their future families. A guidance counselor noted, "The jobs that the kids gravitate toward or show interest in are jobs that they see on television or hear on the radio. They need more exposure to the variety and types of jobs." Or maybe the problem is in the delivery. "I wish they could just give it [career information] to me in manageable bites, and only when I really needed it," one student said. "It's just all too much."

For some Flagstaff students, their dreams bore little relation to their activities in the immediate future. In fact, their stated visions may have been used to mask their realizations that, without significant change, they were unlikely to

go anywhere. Some Phoenix students gave similar responses in interviews — high aspirations but little planning. These gaps did not surprise counselors and workforce professionals. They agreed that high school students often do not grasp how their education relates to career choices or the steps that substantial achievement will require. Yet some professionals seemed surprisingly reluctant to push too hard. “We just want them to become excited about something and realize that what they do in high school will pave the way for what they want to achieve later,” one said. Another cited barriers to working with students despite having sophisticated planning tools: “My district gives lip service to supporting career and college planning. The current 450 student-counselor ratio, plus non-counseling duties, makes it impossible. We need more time.”

Years of high dropout rates and lackluster high school experiences are evident in the young adults who, working or not, defined “aimless.” For these, career pay/career path work was a mysterious notion. Whether from lack of awareness, frustration with complex career information or some other reason, making sense of the choices seemed nearly impossible. The young adults struggling with low-skill jobs testified to the hit or miss nature of career planning for them. ECAP could be the remedy, although some professionals asserted that, especially without long-term resources, “ECAP will become just another piece of paper” in the high school experience.

Talks with some Arizona students revealed that this concern may be on point. Public Agenda’s 2009 publication *Can I Get a Little Advice Here?* described a system in which counselors are often overworked and underprepared to help students make the best decisions. While Arizona has adopted national counseling standards, tools and training, the findings of this national survey of 22-30-year-olds represent important information:

- Most students, even those who successfully complete college, give their high school guidance counselors fair or poor ratings.
- Students who get perfunctory counseling are more likely to delay college and make more questionable higher education choices.
- High school counselors are viewed as less helpful than teachers.
- Advisers at higher education institutions get better ratings, but there’s room for improvement.²³

In contrast, research from the Lumina Foundation on Arizona’s “productivity push” for more college enrollments and completions shows the positive effects many counselors have closing the dream/reality gap. “Our kids have grandiose ideas about college,” one said. “But unless you start asking them specific questions for which they don’t have answers — and unless you then point them toward the answers, the chances are they won’t go.”²⁴

Career and Technical Education had not been a factor in the young interviewees’ experience. Supported by state and federal funds at the secondary and postsecondary levels, CTE has become more closely tied to academics in recent years and has helped promote career pathways. Arizona’s Commission on Skill Standards is currently updating what students should know and be able to do throughout the state’s 16 career clusters.

CTE has long been a source of training for middle-skill jobs, and the trend today is the integration of hands-on and academic learning. The field is often looked to as a model of how school, skills and work can be complementary, although it struggles with the old, negative “voc-ed” stereotype. Some observers felt that CTE is not just an alternative for students, but that a quality CTE program and related guidance support are essential for all students.

Moreover, Arizona’s 13 **Joint Technological Education Districts** (JTEDs) are viewed by many as another CTE resource that could have been an answer for the young adults who were interviewed. These institutions overlay existing public school districts and provide career and technical education and training. By serving several school districts, JTEDs can provide cutting-edge skills and opportunities more efficiently than a single school district. For example, the **East Valley Institute of Technology** serves 10 districts and offers students the opportunity to learn in 35 occupation-specific programs. EVIT has started the School of Adult Education to attract older students back for training in health care and many other areas. Tuition charges and financial aid make the services to adults possible.

Unfortunately, funding for both CTE and JTEDs has been recently reduced at both the state and federal levels. Critics have argued that these programs do not prepare students to be both career- and college-ready, as has become the mantra of today’s P-20 movement and of many education reform plans. Without doubt, these programs bring many elements of applied education that can serve as models for

education overall. However, it will require a singular focus on the part of CTE educators and supporters to answer these complaints and to ensure that CTE programs produce both college- and career-ready students so that the programs may be deemed worthy of former funding levels.

DEGREE SEEKERS AND CAREER SEEKERS

A number of young people interviewed for this report said college is simply “a given” after high school, but admitted to little consideration of what they would study and why. Regrets about lack of direction were obvious among some students, while others were sanguine about making plans as they went along. A Phoenix student, for example, regretted her lack of planning for college. “In high school they always say, ‘You don’t have to know (now), college is a long time away. You don’t have to pick a major.’ I think that is so counterproductive. High school should encourage people to go out and find something they’re interested in. I think high school should be more of a trade school.”

As one postsecondary student put it, “College is just the logical next step, even if I didn’t want to go.” Students who were enrolled but not engaged were “degree seekers,” in contrast to “career seekers” who were taking advantage of every opportunity to prepare for their chosen fields. Degree seekers perceived a college diploma as a necessary credential, not a skill-building opportunity or preparation for work: “Having a degree is going to help me no matter what it’s in,” one student said. “Lots of people don’t work in the field that their degree is in. A degree just tells whoever is hiring you that you’re able to sit down and do work and pay attention.”

Some looked to an employer for job-specific training, even if they could not say what that job might be. One college

student admitted he was waiting until the last possible moment. “I haven’t talked to my advisor or used career services,” he said. “I’m sure these services are available and will help me get a good job. I’ll go to a career fair at the end of my senior year.”

College Is a Big Step for First-Generation

For first-generation college students, however, no easy assumptions can be made. In fact, this key segment of Arizona’s population faces a series of challenges, often beginning at home. Two-thirds of Arizona adults either did not finish high school, have a high school degree only or some college but no degree. Thus, many Arizona children live in families without a college-going tradition. Many of these children are also in households with low incomes, according to data on ArizonaIndicators.org.

Few would argue with the research that shows parents’, particularly mothers’, educational experiences affect their children. Even fewer would argue with the benefits to Arizona of recruiting and retaining first-generation college students. But national research has revealed the challenge of doing so. For example:

- Less than 50% of students whose parents did not go to college enrolled in a postsecondary institution after high school, compared to 85% of students whose parents had college degrees.²⁵
- First-generation students are more likely to go to two-year institutions.
- First-to-college students are twice as likely to leave without a degree.
- First-generation students are more likely to be women, older, Hispanic or African American, to be parents and to come from lower-income backgrounds.

FIRST-GENERATION STUDENTS FACE BARRIERS OTHERS DO NOT

Barrier	Remedy
Less prepared academically	Rigorous high school curriculum, college preparation, and advanced work. Role models.
Limited parental support	Outreach to parents and students
Low expectations among students early on	Support to build parental awareness and encouragement
Lack of exposure to postsecondary education	Targeted introductions and relationships over time. Bridge and summer programs.
Lack of understanding of application process	Guidance on the college admissions process
Limitation of choices to institutions close to home, affordable and work friendly	Financial aid and building social networks to live in two worlds

Source: Straight from the Source: What Works for First-Generation College Students, 2006.

- First-generation students are also more likely to rely on financial aid and work full time while in college.
- First-generation students are twice as likely to drop out of college before their sophomore year.²⁶

“Most of our kids don’t know about schools or programs outside of Arizona, or programs like study abroad,” said one college-access counselor. “Our program is about choice and expanding their horizons and their opportunities, and what fits best for that student.” Confidence is what many Arizona students need from college access programs. “With many of our kids, we are dealing with a sense of failure. We want them to become confident and resilient enough to go on to college.”

Yuma is just one location for **AVID** (Advancement Via Individual Determination), a San Diego skill-building program developed with business support for students whose parents had not been to college. Tutors, field trips, writing and critical thinking skills are some of the services offered. “It has motivated students amazingly,” a Yuma professional said. “We have this program in all our high schools, except one. It’s making a huge difference in their abilities and their confidence.”

In recent years, college access programs and nonprofit organizations designed to promote post-secondary education have blossomed. These organizations provide such support as financial counseling, last-dollar scholarships, college visits, career guidance, tutoring and test-preparation courses. College-access programs are bringing down college barriers, from support through the National College Access Network to targeted programs. For example, the City of Phoenix’s **College Depot**, housed at the Burton Barr Public Library is billed as “your destination for full-service college planning.” The program includes everything from workshops on scholarships and college readiness to hands-on help with applications and meeting places for university and community college counselors.

Helping Hands for Single Moms assists low-income single mothers in obtaining a college education through tuition assistance, living stipends and other supports. “Our mom comes to the place where she realizes that she’ll never be able to take care of her kids if she doesn’t have an education,” a program official said. “There’s not a livable wage out there without an education...[But] college is an overwhelming experience for single moms. They need

some support.” **Aguila Youth Leadership Institute** seeks to increase young Arizona Latinos’ graduation rates from postsecondary institutions. Cultural heritage, academic success, civic engagement, leadership, positive self-esteem and strong relationships are featured.

GEAR UP

Since 2000, Northern Arizona University (NAU) has been a grantee of the U.S. Department of Education’s *Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP)*. For 2006-2012, NAU has received \$17 million in federal funds to administer Arizona GEAR UP. This national college access program begins preparing students for college success in grade seven. NAU’s GEAR UP program currently serves 1,700 students in 18 schools in Coolidge, Flagstaff, Miami, Globe, Phoenix and Yuma. NAU’s GEAR UP has succeeded in increasing participants’ graduation rates and test scores; the graduation rate for the 2006 GEAR UP cohort was 82%, compared to 67% for the state, and its college-going rate is a projected 75%, compared to 31% for the state.

The Maricopa Community Colleges’ **Achieving a College Education Program (ACE)** can benefit students who may not consider four-year college to be an achievable goal. ACE helps students make a smooth transition from high school through the community colleges on to a university. The program, which serves more than 80 high schools, recruits high school students in their sophomore year, and helps them enroll in concurrent college courses as juniors and seniors. Students attend college classes during the summer and on Saturdays during the fall and spring semesters. Upon graduation from high school, an ACE student may earn up to 24 transferable college credits.

College readiness is an equally important issue. Research sponsored by the Arizona Community Foundation gauged college readiness (“entering postsecondary education ready for college-level coursework”) among Maricopa County high school graduates who enroll in the state’s public universities and community colleges.²⁷ The results showed that, in 2008, 70% of high school graduates took college-level English, as opposed to developmental (remedial) classes, as freshmen. Just 42% took the equivalent math classes. This gap is one of the factors motivating changes at Arizona’s community colleges and universities to ensure that students come to institutions ready for college-level work or able quickly to get the help they need. “We used to be about access,” a Phoenix educator said. “Now

we are about success, too.” This remark reflects a recent shift to more intensive efforts to ensure readiness for academics. Changes in transfer processes, special scholarships, social and academic support, and an emphasis on career pathways are increasing the chances that Arizona’s students will be ready to enter college and succeed.

A discussion of college readiness brings up three more issues: 1) Arizona’s lack of a comprehensive data system to track where students go and how they do at all levels of education. 2) College and career readiness may be too narrowly focused on academic preparation. 3) The readiness mantra reemphasizes the importance of quality elementary and middle schools. A recent statewide study found that the reenrollment rate for “underperforming/failing” schools (84%) was surprisingly close to that for “excelling” schools (91%), with the lowest reenrollment rate for “performing” schools (82%).²⁸ Parents’ choices to reenroll their students in poorly rated schools may be affected by many issues, such as safety, familiarity or lack of transportation. But the current study suggests at a minimum that for the sake of college access and readiness, local K-12 quality remains at the heart of human capital policies.

Perspectives from the Fortunate Few

While many young adults seemed “aimless” even in college, others personified “aimed.” Having chosen early on what they wanted to do, these fortunate few were clear about their paths — which didn’t have to include college although most did. One young person said: “It doesn’t mean you’re going to be destined to a life of poverty because you didn’t go to college. What society thinks is you need to be white collar and go to college, and if you don’t you’re not successful. That’s the wrong way to look at it.” Another said: “I always wanted to go to college. I was determined and competitive in school growing up. I took all AP (Advanced Placement) classes my senior year while others slacked off. I pushed through and now I’m doing great in college.”

A health professional who was still new to the workforce had long ago taken charge of his choices. “I grew up in a town of 250 people. No one went to college,” he said. “I knew early on that I didn’t want the life my parents had.” This young man said that, because his high school, parents and peers didn’t provide him support, he sought inspiration from reading biographies of famous people “who grew up with nothing but went on to do great things.”

Other successful young people said they were touched by a mentor or personal experience. But even these highly

motivated Arizonans said nothing comes easy. A 20-something science professional said: “There’s a lot of opportunity, you just have to do the research and find it. It’s not going to get handed to you.”

Several among the fortunate few said they found direction and a support system only after experiencing dead-end jobs. They realized that they had to return to education to build a future, although doing so was not easy. Besides the personal commitment, they said, finding support to navigate the maze of options, and financial aid to manage the costs, mattered as much. Others reported finding their way through workforce development programs or career and technical education programs. Regardless of the source, the lessons from the fortunate few are important. They cited:

- Strong support from parents, teachers and mentors
- Good career information and/or personal experiences to try out options
- Compelling on-the-job experiences
- Easy return to learning
- Direct links to jobs
- Flexibility in format and structure
- Financial assistance
- Combination of academic, employability and applied skills

THE TAKEAWAYS: WHAT LESSONS SHOULD EDUCATORS AND POLICY MAKERS TAKE FROM STUDENTS’ EXPERIENCES?

- **Career planning has been hit or miss.**
- **Students’ aspirations often don’t match plans and actions.**
- **Parents and students agree with employers: Start career activities earlier, preferably in middle school.**
- **The process of finding information and a career can be mysterious.**
- **Finding one’s way takes effort, even for the most persistent and successful.**

WHAT STANDS OUT ON THE GROUND?

Information, alternatives and support services are available but many students and young adults are missing out. The fortunate few exemplify how things could, and should, go for far more Arizonans. Success in K-12 experiences would prevent many of the challenges young adults face. Now instead, they must reconnect as nontraditional students or find a different pathway to career pay/career path jobs.

III. WORKERS DESCRIBE THEIR EXPERIENCES IN GETTING AHEAD AND MOVING UP

It would be hard to overestimate the impact of the Great Recession on Arizonans, and especially on young people, minorities and the low-skilled among the state's workforce. Tales of woe abound, and pessimism is rampant. But these sad facts should not obscure the wide variation that does exist in the fortunes of Arizona's job seekers, nor the tremendous potential for adult education and retraining that could still catapult the state into the high-skill, high-tech global economy. The fact is that Arizona's young adults are facing quite distinct futures. A Phoenix 27-year-old with a Ph.D., for example, has been a textbook case of how to do things right. Her parents, teachers and mentors helped guide her through college and graduate school to a promising career in a growing scientific field. But another young woman had the opposite story to tell: She's still looking for an occupation right for her that will pay enough to support her and her daughter. A high school graduate who has worked continually, she cannot see how to manage to work and study at the same time or to pay for it. Both want to work. Both are ready to do so. But their choices and chances diverge dramatically. Interviews with both younger and older adults showed that those in the "aimed" group think of moving up as proceeding along a clear, navigable path. Those who have spent time among the "aimless" view it as a confusing journey full of twists and dead ends.

I'M TIRED OF LOW-PAY JOBS... WHERE ARE THE DECENT JOBS?

The good news is that two-thirds of respondents to an Arizona Indicators Panel survey said they had a "good job" (the panel provides a representative sample of Arizona's population).²⁹ For the rest, however, the frustration was unmistakable. "I'm tired of low-wage jobs. Where are the decent jobs?" A number of yesterday's graduates said family responsibilities often set boundaries; limited exposure to job possibilities presented restrictions. "I live with my grandma and after I graduated high school, she made me start paying rent immediately. So I didn't really get the chance to think about going to college." For those who stayed at early "starter" jobs, the dead-end reality sunk in

over the years. "When you're in high school it sounds like a lot of money. But when you're 28, and still making what you made 10 years ago, it isn't that much." A retail worker said even a store manager position would not put her into a middle-income bracket.

An unemployed 22-year-old said: "I took several odd jobs after high school but when I started a family, I needed something more stable. So I worked with my dad and took up electrical work. I don't really like it but I'm not sure what else to do."

These interviewees felt stuck in neutral or worse, and most also admitted they didn't know what to do about it.

But they knew they wanted a good job. Some focused on salary and benefits; others talked about satisfaction. One group cited amicable relationships with colleagues and supervisors. Some balanced the characteristics differently than others. "A good job is defined by the pay. That's why you get a job in the first place." Another emphasized accomplishment. "A good job to me is one where I can make a difference in the world and help people while having enough money to pay my bills and not be broke."

In any case, these Arizonans are likely to be especially open to suggestions about what to pursue if it comes with a "guarantee," comprising an untapped pool for both emerging sectors and established economic development targets. Labor market economist Andrew Sum calculated labor underutilization rates of 30%, 19% and 13% for Arizonans without a high school degree, those with a diploma or GED and those with 13-15 years of schooling respectively.³⁰ These low-wage adults cannot be ignored when forecasts show every worker will be needed and the majority of new jobs will require some postsecondary study.

Complicating the picture are two trends: first, unemployment has risen faster for minorities than for non-Hispanic whites, deepening disparities; second, poor prospects are pushing

young adults out of the labor force. Of course, youth experience greater unemployment even in good times as they “churn” from job to job seeking higher wages and trying out new fields, employers and places. The average worker is likely to have seven jobs in his or her first 10 years in the labor market.³¹ But high unemployment, potential long-term joblessness and the inability to find a stable path present serious obstacles for individuals, their families, and the state. This is in part because a downturn for young adults comes at a significant period of their work lives as fewer find their way to the usual path in which one job leads to another. “The loss of human capital when taking jobs in lower-level occupations is one of the principle contributors to the long-run negative effect recessions have on the wages of young workers.”³² Loss of capital drains labor market potential and brings lower earnings, less output, reduced productivity, and the displacement of less-educated workers. Low wages also jeopardize the return to higher education. Whether out of the labor market or in undesirable work, the recession will leave a significant scar on young workers’ capacity to climb the promotion ladder and therefore on their potential earnings.³³

But why leave school in the first place? Some interviewees said they did so because of the strain of trying to work, go to school and maintain families. As research from the Bill and Melinda Gates Foundation has shown, “most students leave college because they are working to support themselves and going to school at the same time. At some point, the stress of work and study just becomes too difficult.”³⁴ As a result, young workers often start and stop educate or training, extending the time needed to finish a study or degree – or giving up altogether. One workforce professional suggested that this situation should motivate even more changes in many programs. For example:

- Offer more alternative ways of delivering education, including shorter-term sessions that may allow more Arizonans to finish certificates, credentials and degrees, particularly at community colleges.
- Use online learning to spur completion.
- Aid the transition to postsecondary programs by combining adult basic education, English, and the technical skills and knowledge needed.

- Encourage dual enrollment for credentials on a step-by-step career path.

As much as participants in *To Learn and Earn* wanted to move up, convincing them of the feasibility of their ambitions remained challenging. Many have been away from educational institutions for years; their literacy may be limited, and their memories of school negative. Those who worked for years with only a high school diploma may be skeptical of the need to study further or of the reality of the job promise at the end. Some skepticism is understandable, given the mediocre to mixed record of job training efforts over the past 40 years, and the current economic depression.

On the institutional side, the services low-skill workers use most often — including adult education, English Language Acquisition for Adults (ELAA), college remediation and occupational training — have been pushed to the margins and often starved for resources. A study from the Center for Law and Social Policy notes that adult education and ESOL in Arizona are generally underfunded. Two strategies that have not been fully explored are 1) adjusting funding formulas to take account of low-skilled services, and 2) combining federal and state sources “invested in economic development, incumbent worker and customized training, student aid, Temporary Assistance for Needy Families, Unemployment Insurance, Trade Adjustment Assistance, job training for low-income adults, and child care.”³⁵ Data-tracking systems also play an important part so that individuals’ progress and institutions’ costs can be followed across programs over time. Perhaps most important is to ensure that the content of adult education, ESOL and developmental study are closely linked to occupational pathways in community colleges or other institutions.

Arizona’s state-level adult education, administered by the Arizona Department of Education, noted in its June 2010 report to the Arizona Legislature that the “Arizona Adult Education System consistently ranks in the top quartile of all states, producing over 2 grade levels of educational gains per student for less than \$1300 annually.” Unfortunately, more than 7,800 people were wait-listed, and the gains mentioned in the report are just the first step for many Arizonans to better labor market outcomes. The next ones may be more complicated, as students move from developmental work to for-credit coursework in viable workforce fields.

Other states have shown the gains to be made in pursuing strategies of public awareness, tracking workers, combining resources for greatest effect and rewarding success.

- **Kentucky's Education Pays** campaign started in 2001 to target workers 18-49 with low literacy, along with middle and high school students at risk for dropping out.
- **Michigan's 2007 No Worker Left Behind** program set out to train 100,000 residents in job relevant certificates and degrees and change the state's culture to put a premium on skills and achievement at all levels. Any resident who was unemployed, about to be unemployed, working with a family income of \$40,000 or less was eligible for benefits at any Michigan community college, university or other approved training program so long as the person agreed to study towards a degree or certificate that leads to an emerging or in-demand job.
- **Tennessee's Completion Bonus Program** provided welfare recipients with cash awards to complete their GEDs, with awards made at grade-level milestones. Evaluation showed that cash incentives did not encourage adult learners to progress at a faster rate, but did help them to advance further in their education than peers who did not receive a bonus/incentive.
- **Louisiana's Opening Doors** tested whether incentives would boost achievement at community colleges, using \$1,000 per semester paid in three installments to students. Program participants increased enrollment and retention rates and were more likely to maintain full-time status.
- **Washington's I-BEST** pioneered putting ABE, ELAA, and occupational instructors together to teach work and basic skills simultaneously. This was a departure from the usual discouraging schedule of students having to move through remediation programs before starting occupational work. Because it takes approximately 100-110 hours of class time to move one adult education level, the time required can be daunting. It is no wonder over the years that completion has been the problem. In comparison to control groups, I-BEST participants earned more college credits, completed workforce programs, and had lower dropout rates than others. Maricopa Community Colleges and Maricopa Workforce Connection are set to begin an I-BEST model at Rio Salado Community College.

These strategies have produced encouraging results. Another, the so-called "sector strategy," remains one well worth exploring for Arizona. In the world of innovation and R&D, adult basic education and ELAA may seem not to have a part. The emphasis is on four-year-plus degrees. But as Battelle's studies of Arizona have shown, and the recent Working Poor Families Project has confirmed, STEM fields can be destinations for workers at a variety of levels. Each field has an array of support occupations that do not call for 4-year degrees. For every 10 architects and engineers, for example, nearly eight middle-skill jobs are created for administrative personnel, technicians, installers and maintenance or production workers. In R&D, every researcher and scientist requires 1.6 people in related support occupations.³⁶

The STEM occupations reflect just one type of sector strategy beneficial for low-skill workers. The sector strategies may also be the best hope for moving workforce development back to the center of attention. Sector work and the new types of intermediaries they have spawned serve employers' needs directly; integrate funding streams from workforce, human services, tuition assistance and work-support programs; work with community colleges and others as partners; and provide the follow up services that will keep residents involved. These efforts take the dual customer approach, serving residents and employers simultaneously. Evaluations have shown these efforts to be of value to both. The Aspen Institute's landmark support for development and evaluation showed that nearly 90% of participants completed training and increased their earnings an average of 41% after a year. Public/Private Ventures' studies of other programs revealed higher wages, more hours worked, and better quality jobs.³⁷

Tucson's **JobPath** represents one type of sector model in Arizona. JobPath modeled its program after the well-known Project Quest, which identifies jobs in career path jobs and then works with firms to identify openings and the skills needed. Community college training, counseling and support and financial assistance are also part of the mix. Project Quest and JobPath take advantage of faith-based roots to provide support and services to ensure success. Valley Interfaith Project, a Phoenix consortium of faith-based organizations, is implementing the model in Phoenix with training partnerships with the Maricopa Community College District. An unforeseen challenge is that the recession has put more high-skill workers into the marketplace crowding

out trainees on the way up. A community college professional said, “The world has changed, and we are trying to figure out where the jobs are and where they will be.”

In its sector-based workforce development, the Aspen Institute sought to address the three gaps: workers, skills and wages. As Andrew Sum’s Arizona work has shown, wage evidence supports second-chance programs to boost the number of Arizona adults obtaining credentials. Completion of some postsecondary schooling and associate’s degrees in Arizona produce significant earnings gains; national research shows these gains come especially from training in high demand occupational fields. “Human capital investments closely tied to labor market operations can help improve the well being of Arizona workers and the future economic competitiveness of the state economy.”³⁸ Arizona’s unexpected unemployed couldn’t agree more.

IS ARIZONA WHERE I WANT TO BE?

Adults with advanced degrees and firm footholds in the so-called “creative class” face a different set of questions. Some saw a future for themselves in Arizona’s life sciences and other technology sectors, while others thought the state simply lacked economic opportunity. Those who contemplate leaving cited too few entities to allow moving from job to job and the lack of local career tracks.

“People see us as a stepping stone rather than a landing place,” one observer said. “Most young people now, who are educated and entrepreneurial, want to see a place that is more tolerant. We look intolerant right now.” But not everybody agrees. A Southern Arizona business person still argues that the region’s quality of life will encourage former residents to come back home. “We have a high percentage who come back, where it’s not [an issue of] how much money am I making, it’s quality of life.”

Some potential young entrepreneurs provide a mix of stories. Having come to Arizona for a job, for example, a specialized physical therapist explained that he was exploring other cities that might be better for a new business. A highly trained foreign-born IT worker gave Arizona higher marks and expected to stay with his current Fortune 500 employer until he had developed his business plan. From an entrepreneurial family, he earned advanced degrees in computer science, putting him on a path to jobs for large corporations in Texas and now in Arizona. Sponsorship through his employers has kept him in the U.S. and provided the opportunity to consider his next steps.

MUCH OF TOMORROW’S WORKFORCE IS HERE TODAY

Although labor force participation falls with age, much of today’s workforce will be still at it in 2030.

- **Age 25 another 40 years before traditional retirement age**
 - **Age 35 another 30 years**
 - **Age 45 another 20 years**
 - **Age 55 another 10 years**
-

Young workers are not the only ones thinking about their next job. Many baby boomers, whether pushed by the recession or drawn by the potential of a new career before retirement, are looking for the same kind of guidance young workers want. With the oldest baby boomers reaching age 65 in 2011, older workers have been in the spotlight for their skills and experience. Nearly three-quarters of Arizona boomers reported changing their retirement plans because of the downturn, making future work more important for many. A recent Arizona Indicators panel survey showed that approximately 30% of baby boomers want to continue working or try out a new career in retirement. But their experiences often reflect the same “where do I go” questions young adults have. In the development of such initiatives as the **Experience Matters Consortium**, sponsored by the Virginia G. Piper Charitable Trust, many boomers have reported not knowing how to find the right match with community organizations or navigate transferring their skills to a new field. “Encore” workers should be of great value to Arizona. Yet national studies and local experience show that pension rules and workplace policies often discourage them. The state’s **Mature Worker Program** has helped identify model employers and laid the groundwork for policies that ease workers’ return to the workforce in new capacities.

Arizona officials also have limited resources to track the state’s students and workers. Unlike Texas or Florida, Arizona lacks the data to keep up with the current composition and capacity of the labor force. “The state should do a skills assessment. What do we have to offer? What can we do?” one Arizona business person asked. “Once we know that we will know what we have to offer, we can decide what is marketable, and develop a process to go market that. ...If you talk to any senior manager at my company, they can tell you the number of employees we have in each skill set. The state does not have that capability.”

But the state officials and others are working to build it. Among the issues and organizations enhancing how Arizonans learn and earn are:

- **Race to the Top:** A U.S. Department of Education initiative to help spur reform in the K-12 educational system. Although Arizona's bids for funding have been unsuccessful, the application has served as a basis for the Arizona Education Reform Plan, which will direct the changes necessary to improve Arizona student education.
- **Grand Canyon Diploma:** Passed by the Arizona Legislature in 2010, this diploma allows students to graduate from high school early, once they demonstrate their proficiency in key areas.
- **P-20 Alignment:** The Governor's Office of Education Innovation is working to align all levels of academic and career technical education. This is also a national effort to better align high school graduation requirements with postsecondary and workforce expectations.
- **Expect More Arizona:** A partnership dedicated to "strengthening the entire education continuum — from birth to career."
- **CLIP Grants:** A program funded by the Bill and Melinda Gates Foundation to increase community college graduation rates among low-income young adults. Mesa Community College was among seven sites that received the first round of funding.
- **Arizona Board of Regents 2020 Vision:** The state's higher education strategic plan, which includes efforts to double the number of bachelor's degrees awarded, increase the retention rate, and increase transfers from the community college system. Recently, the Arizona Community College Presidents Council approved a companion document outlining the community college statewide plan and vision.
- **American Graduation Initiative:** A plan to increase federal resources available to community colleges, which will help meet President Barak Obama's goal of

the U.S. having the highest proportion of college graduates in the world by 2020.

- **Arizona Commerce Authority:** Governor Jan Brewer has created a new public/private agency to replace the Arizona Department of Commerce.
- **Science Foundation Arizona:** The public/private partnership and funding source supports Arizona competitiveness in research and development.
- **Tribal Growth Initiatives:** Recent innovative economic development plans include the Salt River-Pima Maricopa Indian Community commercial development along the 101 Corridor, and the Gila River Indian Community focus on agri-business.

THE TAKE-AWAYS: WHAT ARE THE ISSUES FOR LOW-SKILL ADULTS?

- Financial pressures
- Insufficient information about career pay and career path opportunities
- Pressures of combining learning, work, and family
- Outdated learning modes
- Negative experiences in early workforce years
- Lack of completion and success
- Language, literacy, and basic skills
- Learning and skills must go hand in hand for earnings gains

WHAT WOULD BRING THEM BACK OR KEEP THEM LEARNING?

- Direct connection to good jobs
- Support, skills, connections and credentials
- Combining learning and work
- Incentives and bonuses for achievement

WHAT STANDS OUT ON THE GROUND?

Frustration stands out among many. Sector strategies, even in innovation fields, integrated services, and incentives hold promise. Adult education has been at the margins of workforce development and now must come back to the center.

IV. RECOMMENDATIONS FOR MAKING CLEAR THE STEPS FOR SUCCESS IN THE RACE TO GOOD JOBS

To Learn and Earn illustrates on-the-ground realities in Arizona. Employers are looking for better education systems and greater diversity. The labor force is marked by the bright lights of the fortunate few and the sharp contrasts between the “aimed” and “aimless.” Parents, students and workers have trouble finding information to help them navigate the economy. Transitions between work and education are tough for many Arizonans, and too many make decisions on little information or insight. The talents of low-skilled workers remain undeveloped because adult education programs are underfunded. Unfortunately, the many programs to recruit, direct or retrieve reach just a fraction of those who need help.

Improving K-12 education, instituting large-scale career planning, and focusing on college and career readiness will help in the long run — but without adequate data systems, leaders may simply not know how to accomplish this task. In the short run, there is still much that must be done. An outcome of the analysis of hundreds of interviews and thousands of survey responses regarding Arizonans’ real life experiences with education and work have resulted in the following 14 recommendations organized under three goals.

Goal One: Promote a thriving Arizona “educonomy” through strategies directed by integrated and aligned workforce and education pipeline data.

1. Disseminate integrated information regarding (1) current and projected workforce data with a focus on numbers of jobs projected and earnings potential and (2) secondary and postsecondary education pipeline data.

There are few stories examined in this research for which better communication of targeted, real time data would not significantly improve the outcomes. This integration occurs biannually with the Arizona Department of Education Career and Technical Education (CTE) programs and this same information could help all prospective students and workers.

2. Integrate statewide planning of economic development programs and educational alignment efforts through collaborative action by the Governor’s P-20 Coordinating Council and the Arizona Commerce Authority.

This requires the centralization of career information, scholarship and financial aid information as well as labor force statistics, research and programs from the Arizona Department of Education, Arizona postsecondary education sector, Arizona Commerce Authority, and Arizona Workforce Connections. The idea is to offer one location and one source of data for students, parents, re-entry workers and returning students.

3. Set concrete goals to close disparities among the state’s ethnic minority and majority populations in both workforce and education success.

Employers are very clear that a workforce that is not representative of the Arizona population is a hindrance to profitability. The pipeline to the workforce needs to be examined at each transition point and goals need to be established and solutions posed to meet employers workforce needs.

4. Create an Office of Education and Workforce Communication to provide channels for compelling information about the economy, economic development, and career navigation for middle school students to mature workers.

Providing timely and age-appropriate career information in the K-12 system will establish relevance of curriculum and increase the desirability of applied education. Accessibility of this information will assist low-wage workers and workers seeking advancement with data to make life decisions.

5. Extend planned statewide longitudinal data systems beyond high school and college in order to track and assess skills and performance in the workforce and to identify continuing education needs for the state.

The development of data systems to track student and worker performance is vital to improving how Arizonans learn and earn. The Governor's Coordinating P-20 Council's efforts in this area should be continued. The opportunity to improve this system and link it to others should not be lost.

6. Refocus federal and state funding sources as well as existing program funding to provide timely career information to youth and adults.

As stated in the Arizona Education Reform Plan regarding school improvement, "this must be funded from multiple perspectives and sources ensuring little or no duplication of effort and expenditures." Strategies should include inventorying existing state funds, seeking multipurpose funding opportunities and redirecting funds when investment returns are low by establishing partnerships and seeking new public and private funding sources.

Parents and business leaders alike complained of the lack of career information early enough to help students understand the connection between education and jobs. Likewise, both groups offered to be part of the solution and should be called upon to partner in making this happen.

7. Support the Arizona Commerce Authority in establishing an innovation fund to coordinate state and regional workforce initiatives in new industries.

Emphasis on emerging industries, such as solar energy, could mean thousands of new jobs. Workforce programs to complement economic development are often supported by federal funds or cobbled together locally. A state fund to bring together and leverage all types of support would push Arizona further and faster in developing new high-wage jobs. Such a fund also could be a catalyst to aligning education levels with academic and applied training. As Arizona jumpstarts statewide economic development and integrates it with workforce development, the issue of incentives, including restoring the State Job Training Fund, is certain to be important.

Goal Two: Create and promote a new culture of achievement for all Arizonans by redefining the state's college-ready and career-ready achievement standards across all age groups to include a strong foundation in academic, workplace and applied skills.

8. Develop age-appropriate workplace, career knowledge/exploration and postsecondary education access competencies and incorporate these into the Arizona Board of Education approved standards.

The takeaway from this research regarding the large proportion of "aimless" students and low-wage workers interviewed was that their parents were not equipped to assist them with the complexities of entering college and that they had inadequate information and support to navigate the process. Furthermore, in this research parents express their frustration with lack of knowledge and steps to take to improve their child's education and career opportunities.

More than 80% of the parents interviewed thought that career planning should begin in middle school. Furthermore, many employers stated they would welcome a closer relationship with K-12 schools in providing support for career knowledge/exploration in the middle school years.

9. Identify nationally validated instruments that assess workplace skills and complete and promote a credentialing system so that all Arizonans can show employers the workplace skills they have mastered.

More than 35 states have adopted the National Career Readiness Certificate, sponsored by the college-testing company ACT. Formerly known as “WorkKeys,” the program tests for and certifies workplace proficiencies. The City of Phoenix and the Tucson Unified School District are using the products and could provide a model for the state.

Goal Three: Engage all Arizonans in a culture of achievement through expansion of programs proven to enhance in-school and on-the-job success.

10. Restore state postsecondary scholarships and institute programs to accelerate graduation as incentives for participation in postsecondary education and to reduce loan debt on first-generation and low-income families.

Paying for college or job training as well as managing student loan debt are major obstacles for first-generation college goers and adults re-careering. Accelerated graduation strategies, such as those underway through Arizona’s Getting AHEAD initiative, must be expanded. For example, the integration of distance and on-line learning, limiting unnecessary electives, and ensuring transfer of credits accelerate graduation dates and alleviate financial burdens.

11. Restore funds to backfill human services related to education and employment that were reduced because of the revenue shortfall, as soon as budget restrictions ease.

The postsecondary education success of adult learners is inseparable from work and family responsibilities. The recent Arizona reductions in childcare subsidies, access to health insurance and reductions in mental health benefits leave low-income families without a safety net. The loss of human services in combination with the deep economic recession, increases the chances of interruption or termination of educational goals for adults and youth, alike.

12. Develop sufficient adult education capacity to eliminate waiting lists for services.

Under the Arkansas Career Pathways Initiative, two-year institutions provide education and training in high-demand fields to low-income, low-skilled residents. The initiative successfully coordinates postsecondary education, social services, and economic and workforce development programs into a cohesive strategy that reaches residents who have the most difficult time accessing education and training.

13. Invest in the state’s One-Stop Career Centers to ensure they have the services and capacity to assist all workers with their next career moves.

Wisconsin developed an assessment map for its workforce programs that can drill down to individual participant data. The system has a function to check client case records during program participation, at exit, and in the post-exit performance quarters enabling real-time assessments and interventions.

14. Extend existing tools up and down the age spectrum to enhance student and workforce success including:

- A. Accelerate and extend the reach of Arizona’s recently implemented Education Career Action Plan (ECAP) to include middle school, postsecondary education and early workforce years.**
- B. Continue to expand current initiatives such as STEM, Move on When Ready and Pathways programs among Arizona’s community colleges and universities.**
- C. Integrate wrap-around social services into the educational process to increase success from P through 20.**

Arizona cannot afford to be a spectator in the race to good jobs. How well our students transition to the workforce, compete for career pay/career path jobs and stay on track through economic swings hinges on the state’s success in providing quality education, career guidance, job training and a 21st century workforce safety net.

Arizonans have tremendous capacity to learn and earn, but for those not among the fortunate few, structure and support are paramount. As the students' and workers' voices in this report clearly communicate, Arizonans possess an intense desire for good jobs. However, too many are expending their energy in treadmill positions where they are likely to burn out. More of their passion must be harnessed and directed so that their efforts can be aimed and fruitful. All Arizonans lose when individuals drop out of the race.

The goals and policy recommendations set forth in this report constitute a powerful call to action. Will Arizona respond? Will we join forces to cultivate a new culture of achievement? Will we insist upon a collaborative approach and shared investment in Arizona's "educonomy?" The Great Recession is accelerating the changes in workforce dynamics and punishing those who lack the skills and resources to adapt. We are truly in a crucible. At the same time, the national spotlight is shining even more intensely on education and innovation. Now is the time to act. Will Arizona seize this opportunity to create a human capital system that best serves students, workers and employers?

If so, we will be able to look at 2011 as a turning point in Arizona's economic prospects, a time when leaders made the difficult but necessary decisions to ensure the state's long-term competitiveness in a global economy. We can then begin to create a future in which we can celebrate the achievement of our students, the skills of our workers, the competitive power of our industries and the prosperity of all Arizonans.

METHODOLOGY

The primary research for this study involved literature and document reviews, along with statewide interviews and surveys of more more than 400 Arizonans, most of them in 2010, about their experiences "on the ground" in education and work. Data collection included individual interviews with employment experts, employers, and employees; small focus groups of students and employers; and surveys of parents and guidance counselors.

Individual Interviews. Experts in education-to-work and workplace-transition issues were interviewed to explore their understanding of the mechanics of transitions made — or not not made — by students and workers. Unemployed adults utilizing Maricopa Workforce Connections' services were interviewed for approximately an hour each about their educational backgrounds and their personal experiences in seeking work. Individual interviews were held with three targeted groups of young adults (ages 19-29):

- 1) unemployed young adults,
- 2) employed young adults with no more than a baccalaureate degree,

- 3) employed young adults with an advanced degree, working within their field of study.

Focus Groups. Groups were conducted with students and employers. Students were recruited by ASU faculty. Workforce professionals in Flagstaff and Yuma identified employers for groups. Flagstaff students involved in alternative learning programs also participated.

Surveys. Two surveys were administered:

- a) high school guidance counselors were questioned about their experiences preparing students for work or higher education;
- b) a statewide representative sample of Arizona parents were questioned on their involvement in their children's planning for school-to-work or work-to-higher-education transitions. The parent questions were part of the statewide representative ConsumerTrack survey done bi-monthly by Behavior Research Center. Households with children were included. The margin of error for this survey is +/-3.5% at a 95% confidence level for the full sample and +/- 6% for the subsample of households with children.

SUMMARY OF PRIMARY DATA SOURCES

Method	Sample Characteristics	Location
Individual Interviews	Content/subject experts	Statewide
	Maricopa Workforce Connections clients (unemployed adults)	Metro Phoenix
	Young adults	Metro Phoenix
	Employers	Statewide
Focus Groups	Employers	Yuma, Flagstaff
	High school seniors	Phoenix
	ASU students	Phoenix
Surveys	High school guidance counselors	Statewide
	Parents	Metro Phoenix

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Prepared by Tonya M. Drake and Nancy L. Osborne

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Prepared by The Latina/o Policy Research Initiative in the College of Humanities,
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VISION: All students succeed in higher education as a result of quality research that shapes policy on critical issues.

MISSION: To stimulate through studies, statewide discussion, and debate, constructive improvement of Arizona minority student's early awareness, access and achievement throughout all sectors of the education pipeline.

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