



West Virginia DEPARTMENT OF  
**EDUCATION**



# Survey of Employer Skill Needs

March 2019



Pathway2Careers  
Education with Destination

# Table of Contents

<b>Executive Summary.....</b>	<b>2</b>
<b>Introduction .....</b>	<b>5</b>
<b>Survey Methodology and Data Collection .....</b>	<b>15</b>
<b>Key Findings .....</b>	<b>18</b>
▪ <b>Focus Area 1:</b> Skill Needs and Availability.....	18
▪ <b>Focus Area 2:</b> Preference for Degrees or Skills .....	26
▪ <b>Focus Area 3:</b> Awareness of WVDE Career Programs .....	31
▪ Employer Requests for Industry-Education Connections.....	32
<b>Recommendations .....</b>	<b>35</b>
▪ <b>Focus Area 1:</b> Skill Needs and Availability.....	35
▪ <b>Focus Area 2:</b> Preference for Degrees or Skills .....	41
▪ <b>Focus Area 3:</b> Awareness of WVDE Career Programs .....	45
▪ Employer Requests for Industry-Education Connections.....	46
<b>References .....</b>	<b>48</b>
<b>Appendix.....</b>	<b>52</b>



# Executive Summary

Our future competitiveness as a country in the increasingly interconnected global marketplace depends on our ability to build a workforce that supports current and projected workforce trends. While the requirements for jobs in constantly changing workplaces vary, all will include a mastery of mathematics and literacy, and most will include a college degree or industry certification. We must, therefore, sustain development of a well-prepared workforce that meets the needs of employers across all career fields.

In recognition of the recent shifts occurring in the economy and the fluctuating demands of the workplace, the West Virginia Department of Education (WVDE) commissioned an exploratory survey to investigate the current workforce climate in West Virginia. In partnership with Pathway2Careers, WVDE made extensive efforts to connect with employers across the state and gather information about their hiring practices and experiences with current employees. Three main focus areas were identified to guide research efforts and direct data collection and analysis. These focus areas, along with key findings and recommendations, are outlined below.

- **Focus Area 1: Skill Needs and Availability**

A primary concern for WVDE is the potential for a growing skills gap in the state of West Virginia. Thus, a key point of focus for the survey was to examine employers' hiring challenges and potential reasons for difficulties they may be encountering. To delve deeper into this issue, WVDE sought to explore employer demand and workforce shortages within five basic skill areas, including mathematics, English and language arts, technology, digital literacy, and soft skills.

- **Focus Area 2: Preference for Degrees or Skills**

Preparing students for future careers requires awareness of the educational experiences and credentials that are valued by employers. Recognizing this as a significant focus area, WVDE requested an exploratory analysis of employer perceptions of degrees, as well as an in-depth inquiry into how degrees and other skill indicators are used in hiring practices. Ultimately, WVDE aimed to answer the question of whether employers prefer degrees or place greater emphasis on job-specific skills.

- **Focus Area 3: Awareness of WVDE Career Programs**

WVDE offers several career programs to students, including Simulated Workplace and Career and Technical Education, that promote successful entry into the workforce. Employer knowledge and awareness of these programs can build employer confidence in students' skills and help bridge students' transition from education to employment. In acknowledgement of employer awareness as an important factor in workforce development, WVDE sought to examine the degree to which employers are familiar with the available career programs and believe these programs are beneficial.

## Summary of Key Findings and Recommendations

### ■ Focus Area 1: Skill Needs and Availability

- There is strong evidence pointing to a skills gap in the state of West Virginia. Employers participating in this survey reported significant challenges filling open positions with qualified individuals. Of most critical need among West Virginia employers are soft skills. In addition, employers are struggling to locate individuals with adequate English language arts (ELA) skills. While less critical skill shortages were found in the areas of mathematics, technology, and digital literacy, there were some notable skills where additional support may be needed.
- It is recommended that WVDE evaluate and implement comprehensive programs that can assist in the development of soft skills, as well as ELA skills. Furthermore, WVDE can support workforce development by providing additional instruction in the areas of mathematics, technology, and digital literacy that addresses specific skill needs. As we progress into the Fourth Industrial Revolution, it will be critical for WVDE to prepare students for increased technology and digital literacy demands that will continue to emerge and grow.

### ■ Focus Area 2: Preference for Degrees or Skills

- With nearly a fourth of employers indicating that many of their jobs require trade certificates, demand for middle-skills credentials appears to be similar in demand to bachelor's degrees.
- As for employer perceptions of degrees vs. skills, a clear preference was demonstrated for industry-specific skills acquired through experience. Degrees and certificates were reported to be most useful in the context of specific jobs with specialized skill sets. Outside of these specific jobs or skills, degrees seemed to have limited application. Therefore, while employers may value skills associated with degrees, these skills may not always be viewed as enough to support successful job performance.
- It is recommended that WVDE encourage students to explore multiple postsecondary education pathways, especially middle-skills pathways, that provide access to good jobs. Furthermore, given the strong employer preference for skills and experience, it is suggested that real-world learning opportunities be imbedded into educational experiences at all levels. Employers may also benefit from informational meetings and resources that expand their knowledge of skills associated with the degrees and the application of these skills to various professions. Finally, connecting with employers and determining specific skill needs within particular industries could lead to the creation of additional degree and certificate programs that could prepare students for entry into these fields.

## Summary of Key Findings and Recommendations (continued)

### ▪ **Focus Area 3: Awareness of WVDE Career Programs**

- While a fair number of employers indicated awareness of the WVDE career programs, there was still a large percentage of employers who reported limited to no awareness of these programs. Furthermore, several employers chose to add spontaneous comments requesting additional information about career programs. This suggests there is room for improvement with regard to how much employers know about the career programs offered by WVDE.
- It is recommended that WVDE increase the amount and/or accessibility of information available to employers about specific career programs. Moreover, helping employers see how these programs can support hiring and training practices could significantly increase the use and application of this information in their business practices. Thus, it is recommended that WVDE not only enhance access to information, but also assist employers in identifying the multiple uses of this information, especially pertaining to hiring employees.

### ▪ **Employer Requests for Industry-Education Connections**

- Employers appear to be eager and ready to assist in workforce development efforts. When provided the opportunity to add comments that might assist WVDE in promoting workforce development, several employers voiced requests for additional interaction with schools and educators. Some wanted to simply learn more about WVDE programs, while others wanted to help students connect with viable careers in their businesses. Many were concerned about specific skills, particularly soft skills, and wanted to contribute to efforts in preparing students for career readiness.
- It is suggested that WVDE engage in efforts to establish stronger industry-education connections. To ensure connections are made with employers who offer viable opportunities for students, school districts should use local labor market information to explore high-value careers in their regions and connect with local employers within these fields. Once identified, regular meetings with high-value employers can be established where information can be freely exchanged. As developments progress, meetings may need to occur with employers on an individual basis to gain more direct information and establish work-based learning opportunities.

# Introduction

The challenge in preparing students for careers is that employers, educators, and students tend to operate in separate spheres, with minimal intersection. Educators struggle to fully understand the needs of employers and vice versa. Caught in the middle are students who lack direction for their educational goals and have limited awareness of available career options and skills needed to obtain these careers. To foster employment success among students and to meet the needs of communities, as well as the economy, there must be a vital point of intersection between industry and education.

## The Need for Industry-Education Connections

---

Schools are exerting tremendous efforts to prepare students for postsecondary success. However, despite these well-intentioned efforts, recent surveys and reports indicate that current approaches to education may be misaligned with today's workforce demands. This is evidenced in two main factors: (1) the skills gap emerging across the nation and (2) the shifting value of degrees and certificates. These two factors suggest that many students are exiting educational institutions with mismatched skills and degree aspirations that may not adequately support employment success.

### *Identifying and Closing the Skills Gap*

A growing number of studies have identified a disconnect between jobs available and a workforce pool that is career ready—between skills required and skilled workers available to businesses (Carnevale, Smith, & Strohl, 2010). A primary condition which contributes to this disconnect is that applicants do not have required skills. A McKinsey Group survey of 2,000 businesses found 40% of employers who were recruiting for their companies had positions open at least six months because they could not find suitable candidates who came with the required skills: Close to half of all college graduates applying for open jobs did not have the necessary applied skills to be hired; and 39% of high-school graduates wanting to go directly to work were unprepared for entry-level jobs (Society for Human Resources Management, 2008). As a result, jobs across every industry—from entry level to upper technical and management echelons requiring one or more higher education degrees—are open (Memmot, 2011). A national broadcast (CNBC, 2011) reported on the inability of major companies and small businesses to match skills to positions, concluding that structural gaps in employment in our country occur because we are not adequately developing and sustaining a workforce with the skills needed and in demand to compete in the 21<sup>st</sup> century.



A 2013 survey of 500 senior executives in a variety of industries found 92% believed there is a serious lack of required workforce skills for posted jobs and, as a result, nearly 50% reported they are having trouble filling needed jobs. Survey participants cited technical (22%), leadership (14%), and computer skills (12%) as lacking from among needed skills. Other lacking skills were those that contribute to successful employees such as the ability to work as part of a team and independent problem solving (Adecco Group, 2013).

A Georgetown University study (Carnevale, Smith, & Strohl, 2013) suggests this problem across all industries is further compounded as Baby Boomers retire and the workforce shrinks so that by 2020, we could see five million positions go unfilled. This lack of available job-ready employees poses problems across the board for employers. For example, lost revenue and productivity was reported as high as \$23,000 per unfilled position and up to an 11% loss in annual earnings (Accenture Manufacturing Institute, 2014).

A 2017 report from the National Academies of Sciences, Engineering, and Medicine (Frueh, 2017) sought to further profile the supply of and demand for workers and found that skilled technical worker (i.e., for jobs that require a high level of knowledge in a technical field for entry, but not a bachelor's degree) are a growing area of demand for employers. This category of workers is needed in most occupational groups, from health care to construction to manufacturing. Examples of such jobs are medical laboratory technicians, installation/repair technicians, and computer support specialists. The report concluded with the suggestion that policymakers, employers, and educational institutions work together to strengthen this strengthen all areas of our workforce (Frueh, 2017).

Our country's competitiveness is being hurt by a skills shortage (Cohn, 2017). The United States is experiencing imbalances in worker supply and demand in certain occupations, industry sectors, and locations. Gaps are particularly evident in health care and manufacturing, although shortages in the worker supply are reported in almost every industry (Frueh, 2017). To those who recognize the gap, it has become a blame game as employers point fingers at education, educators point back at employers, and far too many graduates are left in the middle, jobless and unprepared for jobs in demand.

Across all venues and these inclusive industries, employers talk about the "skills gap" between the jobs they need to fill at all levels and the workers available for these jobs. For corporate leaders, the most crucial issue influencing corporate decisions about where to locate or expand operations is the ability to recruit and retain the best workforce (Cohn, 2017). This has serious implications for regional and local economies.

It defies business theory that as salaries and other benefits go up for certain highly skilled jobs, workers do not flood the education and training programs that would qualify them for these jobs. We clearly need to develop strategies that will enable us to close the skills gap and, thereby, assure a high level of workforce productivity (Templeton, 2018).

The consequences of not closing the skills gap are clear, in the form of social and economic distress that comes about when too many young people believe their future is compromised, and too many businesses are frustrated by the lack of a prepared workforce in their regions.

## *The Changing Value of Degrees*

In addition to the skills gap, we are seeing changes in the value of degrees and certificates. In the past, a bachelor's degree carried a relatively high guarantee of employment success. Other degrees and certificates were helpful, but not as valuable as a bachelor's degree. Today, economic changes and the increasing cost of college is making this picture more complex. A recent survey reported in *Forbes* estimated 34% of college graduates are underemployed (Cooper, 2017). Similarly, Weissmann (2012) reported that nearly 54% of bachelor's degree holders age twenty-five and under was either unemployed or underemployed (i.e., working in jobs that do not require a degree). Such findings bring the return on investment for bachelor's degrees into question.

While bachelor's degrees still lead to a majority of good jobs, it is becoming increasingly apparent that student's choice of college major is critical (Carnevale, Fasules, Huie, & Troutman, 2017). Simply having a bachelor's degree is no longer the automatic fast track to better jobs or higher wages that it may have been in the past. Rather, majors selected in high-demand fields are most likely to promote employment success. Choosing the wrong major can place students in the position of investing large amounts of time and money into a degree that has little value in the job market, ultimately leading to employment failure.

The good news is that other educational pathways are rising in opportunity and providing alternatives for students. Specifically, there is an increasing demand for middle-skills credentials, such as associate's degrees, trade certificates, licenses, and other postsecondary certifications. Nationally, middle-skill jobs account for about 24% of good jobs. Furthermore, good jobs at this education level are rising faster than jobs at the high school level (Carnevale, Strohl, Ridley, & Gulish, 2018). Such trends point to the middle-skills education pathway as being a viable alternative to four-year degrees. Indeed, there are several middle-skills jobs that have the potential to pay more than jobs requiring a bachelor's degree, especially in STEM-related fields (Carnevale & Cheah, 2018; Carnevale, Strohl, Cheah, & Ridley, 2017).

The rising demand for middle-skills credentials is contrasted with the declining opportunities for individuals with a high school diploma (Carnevale et al., 2018). The low-skill jobs that paid individuals in the past are being rapidly replaced with new technology that can automate simple and repetitive tasks. Because these low-skill tasks can be so easily replaced with technology, employers are expecting more from their workers and demanding skills that complement technology. Thus, there is a push for skilled labor that can support the rising task demands of today's workplace.

The emerging picture here is that the common postsecondary targets that schools prepare students to achieve may not align well with current workforce demands. The traditional approach of preparing students for entry into a four-year institution or immediate entry into a career with a high school diploma can be dangerously restrictive. This limited dichotomy has the potential to leave students underprepared for today's jobs and unaware of alternative pathways to employment success. To ensure students are provided the best opportunities to access viable careers in multiple fields, educational institutions will need to connect with local industries to identify appropriate education targets. Once identified, education pathways can be established to help students achieve employment success in their local communities.



## This Shifting Workforce Landscape

---

To understand why the skills gap is happening and why degree values are changing, we need to look at some of the dramatic shifts occurring in our workforce landscape.

One of the major driving factors behind the shifting nature of work is the emergence of the Fourth Industrial Revolution or “Industry 4.0.” This revolution is marked by rapid advances in automation, the emergence of artificial intelligence, and the fusion of technology with almost every aspect of daily living. Unlike previous revolutions that progressed over many years, this revolution will be rapid and pervasive. As a result, there is an unprecedented demand for skilled workers with knowledge of both the use and maintenance of new technology (World Economic Forum, 2018).

Along with rapid shifts in technology, there are also several social, economic, and environmental factors affecting jobs. For one, the number of elderly individuals is increasing in the United States, creating a rising demand for skilled healthcare professionals. Furthermore, the economy is becoming more globalized and companies are sending low-skill jobs overseas to capitalize on lower labor costs. As for environmental factors, renewable power resources are becoming more important, resulting in a growing need for individuals who can develop and work with green energy solutions.

All of these changes are having dramatic effects on the future of work. Technology demands in the workplace are increasing and job opportunities are moving toward more skilled professions. As a result, the skills that supported generations of the past will need to shift to align with the demands of today’s workplace. Digital skills are becoming increasingly valued, as are STEM-related skills (Crowe, 2019; Manyika et al., 2017). In addition, individuals trained in job-specific skills aligned with high-demand professions, such as health care, will be highly sought after (Carnevale et al., 2018; Shearer & Shah, 2018). Of most critical need are human skills, or soft skills, that complement the use of technology. These skills, which include critical thinking, problem solving, teamwork, and other related abilities, are currently within the top reported skill needs among employers (Bloomberg Next, 2018; Udemy, 2018; US Chamber of Commerce Foundation, 2017).

Because these changes are occurring at such a rapid pace, they are contributing to large gaps between employer needs and workforce supply. There simply has not been sufficient time to gain awareness of workforce needs and prepare individuals for these new demands. Consequently, individuals are entering the job market without required skills and credentials, especially middle-skills training, that support successful job performance and provide entry into rising professions.

### *The Role of Education*

Within the field of education, a new force is emerging with a strong emphasis on preparing students for the changing demands of today’s careers. A primary goal of recent policymaking activities, both at national and state levels, has been to improve alignment between education practices and workforce needs. As a result,

significant efforts have been made to implement career-ready standards and scale up career pathways that prepare students for high-value jobs. In addition, there has been considerable rethinking and reform of career and technical education (CTE) programs to ensure these programs are more in tune with the rapidly shifting needs of employers.

Educational institutions will need to continue to evolve to help students meet the demands of the changing economy and careers. Connecting with industry and staying abreast of shifting demands is a critical part of this process. When there is a strong point of connection between education and employers, valuable information can be exchanged about the skills employers need and the services education provides. Information gained from employers can inform education practices and help ensure students are ready for work. When education is disconnected from industry, there is the risk of students entering the workforce with outdated or mismatched skills. Maintaining contact with employers and developing programs that address the development of valued workplace skills is critical to students' future success.

## Aligning Industry and Education in West Virginia

---

West Virginia's economy can be divided into 11 major sectors: mining and logging; construction; manufacturing; trade, transportation, and utilities; information; financial activities; professional and business services; educational and health services; leisure and hospitality; other services; and total government. Between 2012 and 2022, many of these sectors are projected to experience minor to moderate employment declines, such as forestry and logging, mining, manufacturing, and crop production. Other areas are projected to see minor to moderate growth, such as oil and gas extraction, information services, professional and businesses services, and health care. The trade, transportation, and utilities sectors are projected to have both employment growth and decline. And, health care is projected to see major growth (West Virginia Department of Education, 2016). These projections can be impacted by new businesses coming into or leaving the state as well as business expansions. Changes in demand will be reflected through real-time labor market information.

### *State Economic Trends and Skills Gaps*

According to West Virginia education leaders, closing the skills deficit of the state's workforce and offering programs that teach the skills employers are seeking are among the challenges faced in the state. A Georgetown University study revealed more than half of all jobs coming to West Virginia will require training or further education after leaving high school. And yet, just 30% of the population has this level of preparation (Pace, 2017).

Economic trends in West Virginia point to a high demand for middle-skill jobs, which require education beyond high school but not a four-year degree. Key industries in West Virginia are unable to find enough sufficiently

trained workers to fill these jobs. Estimates are that from 2014 to 2024, 51% of job openings will be middle skill, and will represent the greatest skills gap for businesses (National Skills Coalition, 2015).

### Information Technology Industry Demands

According to *The West Virginia Gazette*, for the first time since 1930, Charleston's population dipped below 50,000. The city lost the majority of its coal jobs. Other industries that were needed to support the region followed a similar path and began moving beyond the state (Sauber, 2016). Balancing this exodus, West Virginia is expected to add 25,000 jobs requiring varying levels of STEM skills by 2018 (Carnevale et al., 2010). The problem is particularly critical in all areas of information technology, especially coding.

### Medical and Healthcare Industry Demands

The West Virginia Unified State Plan identified "Healthcare Practitioners & Technical" as among the occupation groups with high workforce demand. If adding "Healthcare Support," total job openings jump significantly, making healthcare occupations the highest demand group in West Virginia. Breaking down the data into greater detail, registered nurses are in greatest demand currently, followed by customer service representatives, and licensed practical and vocational nurses (West Virginia Department of Education, 2016).

Over the next ten years, the healthcare and support services industry is projected to grow, with very high demand across West Virginia. Six of the highest-demand occupations are and will continue to be healthcare related, such as personal care aides, registered nurses, home health aides, licensed practical nurses, nursing assistants, and medical assistants, with more than 1,200 opening jobs every year. The growth rates for the most in-demand occupations in the healthcare sector are anticipated to grow by more than 3% annually (West Virginia Department of Education, 2016).

With the growth of the healthcare industry through 2022, the need for higher-skilled workers is anticipated. These workers (e.g., nurse, therapist, or physician assistant) must have a working knowledge of medicine and English skills that enable them to understand medical terminology. Customer and personal services knowledge are also important for nursing staff and physical therapists to build close relationships between provider and patient. The majority of these occupations will require licensing.

It is difficult to overstate the demand for healthcare in West Virginia. The top six occupational groups ranked by growth are in the healthcare industry, which is expected to have the fastest job growth through 2022. This is largely due to the growth of West Virginia's aging population, a significant driver of demand for health and social services. The age group 65 years and older is expected to increase from 16% to 23% of the state's population by 2030. Another driver in the demand for healthcare is the relatively poor health of the state's citizens, with the state ranking 47<sup>th</sup> in the nation on health and well-being. The state ranks 50<sup>th</sup> among all states on smoking, 50<sup>th</sup> on diabetes, 50<sup>th</sup> on drug-related deaths, 50<sup>th</sup> on heart disease, 50<sup>th</sup> on immunizations, 49<sup>th</sup> on obesity, and 48<sup>th</sup> on cancer deaths.

## Energy-Sector Industry Demands

The energy sector is fundamental to West Virginia's economy. Previously, the industry was dominated by coal mining. In recent years, however, the production of natural gas and natural gas liquids extracted from shale resources have increased energy-sector demand for skilled workers. Employment projections from WorkForce West Virginia suggest a 10% increase in the state from 2010 to 2020. Most of the jobs will require semi-skilled workers with high-school or two-year associate's degrees. The industry will also require middle- and high-skilled workers for higher level positions in engineering, computer sciences, and related fields (Gonzalez, Robson, Phillips, Hunter, & Ortiz, 2015).

## *West Virginia Education Challenges and Strategies*

### Strategies to Meet Employment Needs in the State's Energy Sector

To address projected growth in the energy sector, the National Energy Technology Laboratory commissioned RAND Corporation to work with the Community and Technical College System of West Virginia to develop strategies for employers and education/training programs—from K-12 through college (Gonzalez et al., 2015). One of the major findings was the need to build students' basic skills. The most important knowledge, skills, and abilities needed in the energy sector in West Virginia are basic skills and abilities, such as English language, mathematics, listening, and critical thinking. These areas of learning fall within fundamental and soft skills, and must be taught in the schools. For students continuing in post-secondary training and education, close to half all new students in energy-related programs needed to first take remedial math courses, suggesting the young talent pool for semi-skilled, high-demand jobs in the energy sector are not meeting basic skill requirements.

Although this report focused on the energy sector, the recommendations hold strong for any industry sector since the goal is to establish firm partnerships that link education with the workplace and assures a strong talent pool is available to businesses. Further recommendations that encourage partnerships of education and industry are as follows:

- Employers should engage with education and training programs to forecast demand for workers; and support the acquisition of equipment and supplies used in hands-on learning, and provide formal workplace learning opportunities.
- Industry leaders should have an active, continuous role in the development of curricula that meets industry needs, including revising programs to fit the demands of the workplace.
- Employers should establish formalized workplace learning opportunities that provide practical experience across the many different high-demand jobs.
- Employers should institutionalize and formalize internships and apprenticeships to assure students are learning the skills and competencies businesses require for hiring.

## *Model Partnerships in West Virginia*

West Virginia is dedicated to assuring, in a changing economy, that education is aligned with workplace demand and is a solution to skills gaps facing businesses. West Virginia has many “bright lights,” such as its Learn and Earn program, splitting learning 50% onsite at a business and 50% in the classroom. Other bright lights follow:

### **Simulated Workplace in High School**

Supported by the West Virginia Chambers of Commerce, in 2013, the West Virginia Department of Education (WVDE) introduced an innovative approach to prepare students for the workplace. The program helps school to implement workplace environmental protocols that align with West Virginia workforce requirements, including random drug testing, professionalism, attendance, and safety.

The Simulated Workplace program draws on industry expertise to ensure high-quality, work-based learning within a classroom setting (Advance CTE, 2013). WVDE worked with experts from numerous businesses and industries throughout West Virginia to design the Simulated Workplace model. The model is guided by 12 protocols the West Virginia Board of Education adopted to provide structure and consistency across the state, and a clear measure of student achievement. The protocols cover everything from program design and safety to evaluations and accountability. Business and industry representatives inspect Simulated Workplace classrooms to ensure alignment with industry needs. These representatives evaluate the career technical education program facilities, safety, equipment, space, tools, supplies, technology, professional skills, customer service, and teaching materials using a scorecard. Students in those classrooms that do not meet the assessment threshold set by educators and businesses must develop a business improvement plan.

As of 2017, the WV Simulated Workplace program has engaged more than 1,200 businesses statewide and served more than 24,000 students in 500 Simulated Workplace classrooms. An option pathway in the program provides greater access for student groups often underrepresented in high-skilled workplaces. What distinguishes the Simulated Workplace partnership is that regional businesses have an ongoing role in the program development, serving as developers, inspectors, and lead professional development providers to help teachers learn the business model.

### **West Virginia Community Colleges**

West Virginia community colleges are national leaders in preparing students for the workplace. Roughly 60% of the students enter community colleges unprepared; that changes quickly (Pace, 2017).

Between 60% and 70% of the jobs in West Virginia require simply a two-year degree, especially in computers and manufacturing. In response, community colleges are working with local businesses to offer programs designed directly around a company’s needs and getting students up-to-speed to work. Some of these programs are short-term training, one-year certifications, and two-year associate’s degrees—all industry recognized. To assure course content will address skill gaps, particularly in areas of IT and manufacturing, community colleges engage employers in helping to design curricula that target technical and soft skills.

## Microsoft Imagine Academy

To increase West Virginia's need for a better tech-trained workforce, Microsoft is partnering with state high schools to provide training opportunities through its Imagine Academy, which provides up-to-date curricula and resources to train and certify students and teachers on Microsoft and other industry-related products.

The curriculum focuses on four areas—computer science, IT infrastructure, data analytics, and productivity. Also offered in the curricula are creative coding, Python, Java, cybersecurity, and techno-entrepreneurism. As a result, over the past three years, students have passed rigorous exams and earned more than 10,000 industry-recognized technical certifications (Mason, 2017).

West Virginia is looking to expand the Imagine Academy to middle-school students. Mountwest Community and Technical College in Huntington offers Imagine Academy courses to adults seeking industry-recognized certificates in technology. Taken together, West Virginia's commitment to this program is helping to reduce some of the skills gaps across the state in all industries utilizing computer and technology.

## Enhancing Employer Connections in West Virginia

---

The West Virginia Department of Education is thoroughly committed to ensuring students are prepared for employment success and the future of work. As such, WVDE recognizes the need to explore local career destinations for students and establish awareness of the critical skills that promote access to good jobs. Given that employers are a large component of career achievement for many students, WVDE is working to strengthen the connection between industry and education. As part of these efforts, WVDE commissioned an exploratory survey, in partnership with Pathway2Careers, to investigate the current workforce climate in the state. Three main focus areas were developed that guided research development and analysis.

- **Focus Area 1: Skill Needs and Availability**

A primary concern for WVDE is the potential for a growing skills gap in the state of West Virginia. Thus, a key point of focus for the survey was to examine employers' hiring challenges and potential reasons for difficulties they may be encountering. To delve deeper into this issue, WVDE sought to explore employer demand and workforce shortages within five basic skill areas, including mathematics, English and language arts, technology, digital literacy, and soft skills.

- **Focus Area 2: Preference for Degrees or Skills**

Preparing students for future careers requires awareness of the educational experiences and credentials that are valued by employers. Recognizing this as a significant focus area, WVDE requested an exploratory analysis of employer perceptions of degrees, as well as an in-depth inquiry into how degrees and other skill indicators are used in hiring practices. Ultimately, WVDE aimed to answer the question of whether employers prefer degrees or place greater emphasis on job-specific skills.



- **Focus Area 3: Awareness of WVDE Career Programs**

WVDE offers several career programs to students, including Simulated Workplace and Career and Technical Education, that promote successful entry into the workforce. Employer knowledge and awareness of these programs can build employer confidence in students' skills and help bridge students' transition from education to employment. In acknowledgement of employer awareness as an important factor in workforce development, WVDE sought to examine the degree to which employers are familiar with the available career programs and believe these programs are beneficial.

# Survey Methodology and Data Collection

## Survey Design

---

The employer survey was designed around three main focus areas identified through collaboration with the West Virginia Department of Education. These three main areas and corresponding research questions are outlined below.

### Focus Area 1: Skill Needs and Availability

- Is there a skills gap? Are employers struggling to fill open positions with qualified employees?
- What specific hard and soft skills do employers need?
  - Mathematics
  - English and Language Arts (ELA)
  - Technology
  - Soft Skills
- What are employer perceptions of specific hard and soft skill availability within the current workforce?

### Focus Area 2: Preference for Degrees or Skills

- What degrees/certificates do employers require of their employees?
- What skills do employers associate with degrees/certificates?
- Do employers prefer degrees/certificates or skills?
- What information is used by employers to identify job-related skills in potential employees?

### Focus Area 3: Awareness of WVDE Career Programs

- Are employers aware of the career programs offered by WVDE?
- Do employers believe the career programs offered by WVDE are beneficial?

To examine employer experiences, beliefs, and opinions within each of these areas, multiple survey questions were developed and presented to respondents that targeted specific elements within these three focus points. Questions examining basic demographic and background information about respondents and their business/company were also included and presented at the beginning of the survey. Overall, the survey consisted of a total of 56 multiple-choice, multiple-select, and short-answer questions. Sample questions for each of the three focus areas are presented in the appendix.

## Data Collection

Data collection began mid-December 2018 and continued through January 2019. Employers were invited to participate in the survey via email from a contact list provided by the West Virginia Department of Education. The email invitation to employers described the purpose of the survey as part of WVDE's efforts to support workforce needs in the state.

The survey was delivered using an online survey platform. A link was provided in the email invitation for employers to access the survey. To protect the privacy of respondents and their employers, data collection was anonymous and no personal information was requested. During survey completion, respondents had the ability to submit responses to questions electronically within the platform. At any point, respondents could exit the survey and return to their saved location at a later time. The standard completion time ranged between twenty and thirty minutes.

## Participating Respondents and Employers

Email invitations were sent to 3,204 employers in the state of West Virginia. A total of 159 employers completed and submitted the survey (response rate = 5%). Surveys were excluded if they were finished in less than ten minutes or had repetitive responses that suggested random clicking or rushed selections. Twelve surveys met these criteria and were omitted from the original 159 submitted surveys. A final total of 147 valid employer responses were included in the data analysis.

### Respondents

Male and female respondents were equally represented within the sample (72 male, 75 female). Respondents were primarily educated, middle-aged adults who had worked at their respective companies for over ten years. Most were owners or managers who are actively involved in the hiring and evaluation of employee performance.

### Respondent Demographics and Background Information

<b>Age</b>	<i>46-55 years (41%), 56-55 years (29%)</i>
<b>Education</b>	<i>BA (31%), MA (23%), High School / GED (12%)</i>
<b>Area of Business/Company</b>	<i>Owner (37%), Management (36%), HR (13%)</i>
<b>Length of Time with Business/Company</b>	<i>10+ years (69%)</i>
<b>Involved in Hiring and Employee Evaluation</b>	<i>Involved in Hiring (88%), Involved in Employee Evaluation (88%)</i>

## Employers

Employers were primarily small businesses from multiple counties in West Virginia. Some operated in more than one county. Several industries were represented with jobs that spanned a variety of career clusters. For most companies, a majority of jobs paid between \$25,000 and \$50,000 and required medium to considerable preparation. Employers reported hiring new employees between the ages of 26 and 45.

### Employer Demographics and Background Information

<b>Industries (most frequently selected)</b>	<i>Health Care and Social Assistance (14%), Retail Trade (12%), Construction (11%), Professional, Scientific, and Technical Services (11%), Manufacturing (8%), Finance and Insurance (7%)</i>
<b>Career Clusters (most frequently selected)</b>	<i>Business Management and Administration (18%), Marketing (17%), Architecture and Construction (16%), Human Services (14%), Education and Training (13%), Manufacturing (12%)</i>
<b>Counties (most frequently selected)</b>	<i>Kanawha (40%), Cabell (24%), Monongalia (20%), Putnam (20%), Nicholas (20%), Berkeley (19%), Marion (17%), Raleigh (17%)</i>
<b>Number of Employees</b>	<i>0-25 (57%), 26-100 (23%), 101-500 (18%), 501-2000 (2%)</i>
<b>Annual Income for Most Employees</b>	<i>\$25,000 - \$50,000 (73%), less than \$25,000 (14%)</i>
<b>Preparation Needed for Most Jobs</b>	<i>Medium Preparation (45%), Considerable Preparation (29%)</i>
<b>Age of New Employees</b>	<i>26-35 years (46%), 36-45 years (24%), 18-25 years (19%)</i>

# Key Findings

## Focus Area 1: Skill Needs and Availability

*Is there a skills gap? Are employers struggling to fill open positions with qualified employees?*

A skills gap occurs when the number of open positions for skilled jobs outpaces the number of qualified employees available to fill these jobs. The results from this survey suggest that a skills gap may, indeed, be present in the state of West Virginia. When employers were asked the question, “When applications come in, does your business/company struggle to find qualified employees for most open positions?” an overwhelming majority of employers (75%) responded, “Yes” (Figure 1). Furthermore, when asked to select among a list of reasons for why their business struggles to fill open positions, the most commonly selected reason was difficulty finding individuals with necessary skills (55%). The second most commonly selected reason was that individuals lacked sufficient training (37%), followed by individuals having limited work experience (31%) (Figure 2).

Together, this evidence indicates employers in West Virginia are struggling to fill open positions due to inability to locate skilled employees within the current workforce supply. This problem could be two-fold: (1) employers are unable to attract or connect with skilled employees or (2) there is a limited supply of skilled employees in the workforce. The evidence here suggests the latter. Although a little over half of employers indicated that they struggle to receive applications from interested individuals (55%), Figure 2 clearly illustrates employers are primarily concerned with the availability of skilled employees. Low interest in the type of job was only the fourth most commonly selected reason for difficulties in filling open positions.

Given that 74% of employers reported annual wages for most job at their company being between \$25,000 and \$50,000, it is likely that many of these open positions qualify as good jobs (high-demand, high-wage). Helping jobseekers prepare and connect with these jobs could benefit both employers and employees.

Figure 1

### Employers Reporting Difficulty Finding Qualified Employees

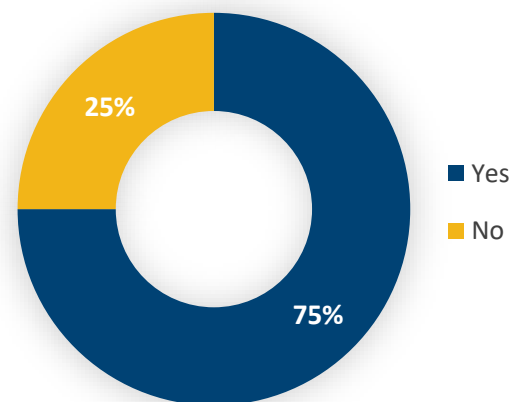
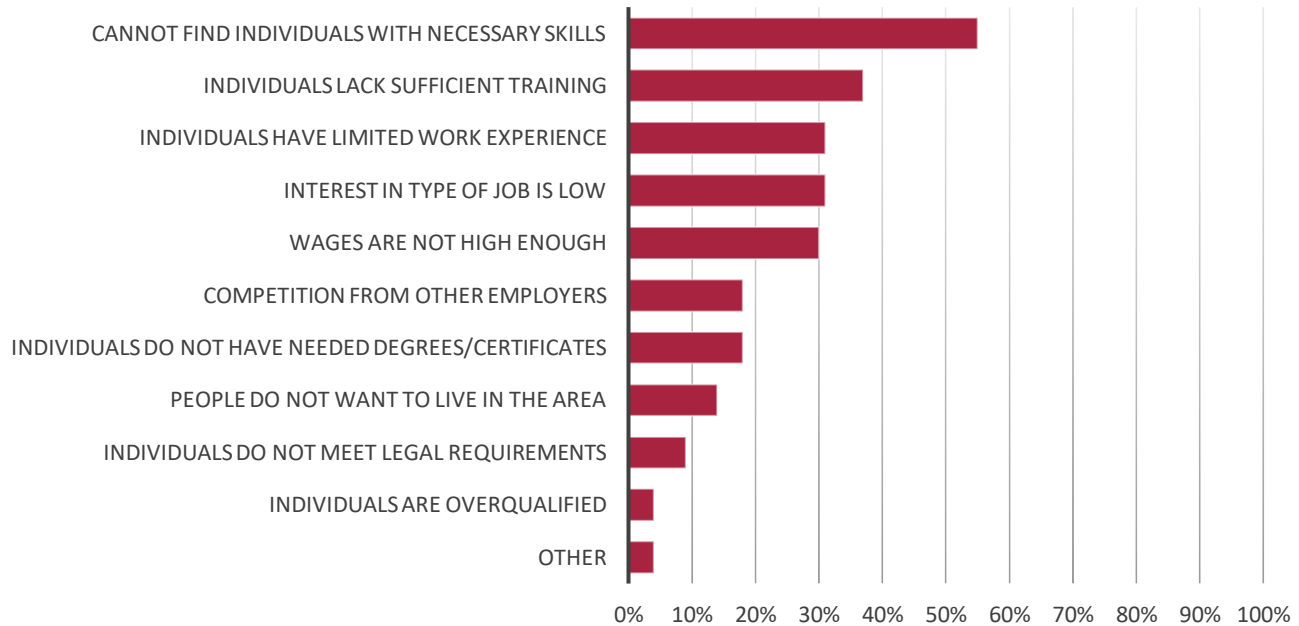


Figure 2

## Why Employers Struggle to Fill Open Positions

% Employers Reporting the Following Reasons



*What specific hard and soft skills do employers need? What are employer perceptions of specific hard and soft skill availability in the workforce?*

To explore questions related to specific skill needs and availability, employers were presented with a series of survey items that focused on skills within specific categories, including mathematics, English and language arts (ELA), technology use, digital literacy, and soft skills. For each skill, employers were asked to consider how many jobs in their business/company require a basic mastery of the skill (indicating skill need). They were also asked to reflect on past hiring experiences and how many applicants they had encountered who would be able to show basic mastery of the skill (indicating perceived skill availability). The results from these inquiries are presented below.

### Mathematics Skills

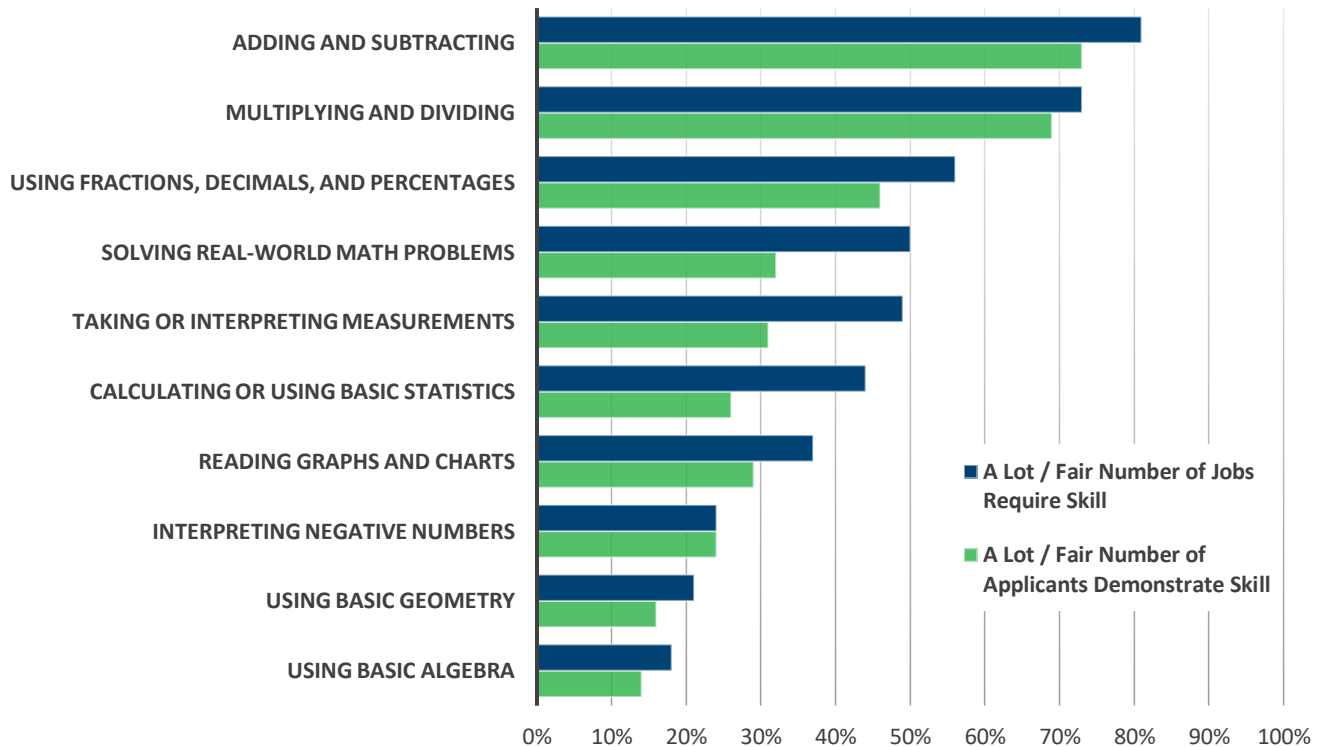
Figure 3 presents the specific math skills explored in this survey and the percentage of employers who reported that a lot or a fair number of jobs in their business require basic mastery of the skill. This figure also displays the percentage of employers who reported that, when hiring new employees, they had encountered a lot or a fair number of applicants who would be able to show basic mastery of the skill.



Figure 3

## Mathematics Skills

% Employers Indicating Skill Need and Skill Availability



Overall, employers indicated a high need for basic math skills, including adding and subtracting (81%) and multiplying and dividing (73%). Other math skills in more moderate demand included using fractions, decimals, and percentages (56%), solving real-world math problems (50%), taking or interpreting measurements (49%), and using basic statistics (44%). Skills lowest in demand were using basic geometry (21%) and using algebra (18%).

Employer ratings of perceived availability of the math skills within the workforce approached employer need for most skills. The largest discrepancies between need and perceived availability were seen for solving real-world math problems (difference = 18%), taking and interpreting measurements (difference = 18%), and calculating basic statistics (difference = 18%).

These results suggest that employers place high value on basic math skills related to the use of the number system, ratios and proportions, as well as expressions and equations. More advanced math skills, involving algebraic or geometric calculations, may have more limited use among employers. Although perceived availability of math skills was rated lower than need for all skills, the discrepancy was relatively small for most skills. Employers appear to have most difficulty meeting demand in areas of **real-world problem solving, measurement, and statistics**, suggesting these as areas for emphasis in schools and training programs.

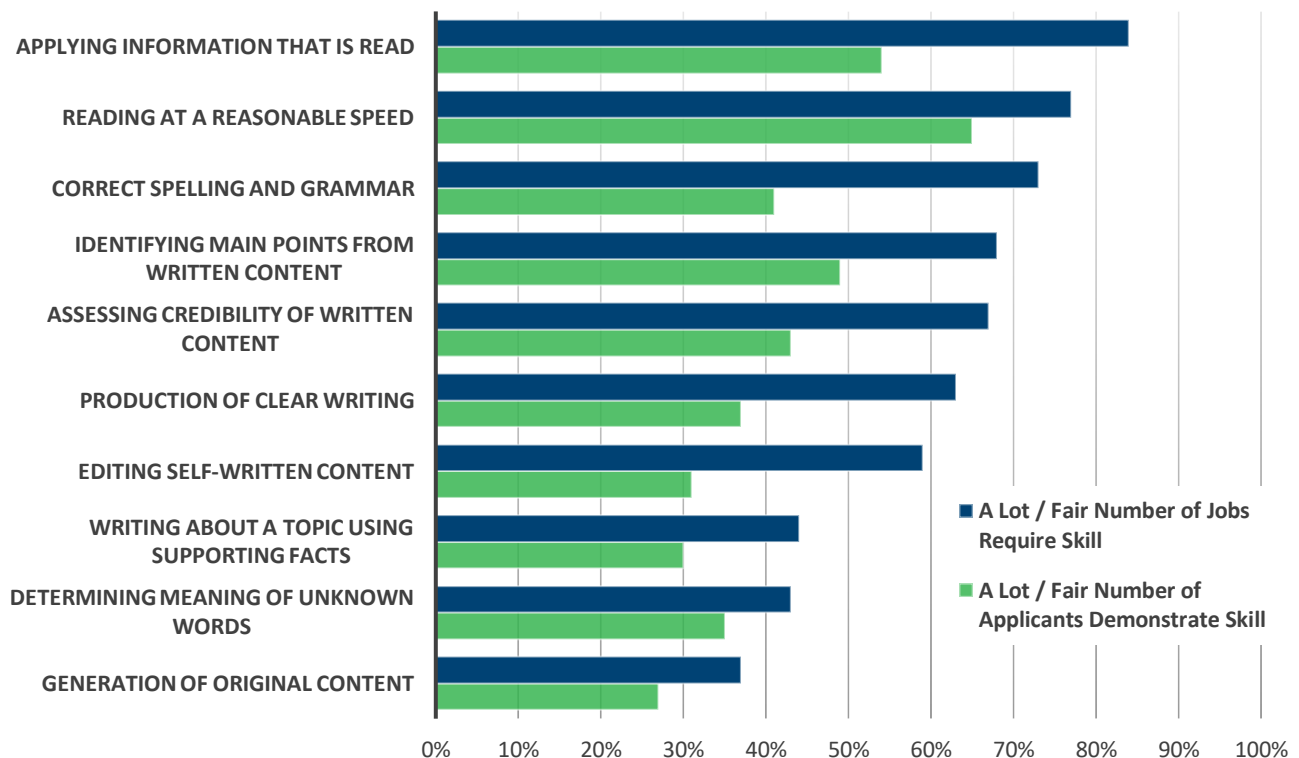
## English and Language Arts (ELA) Skills

Figure 4 presents the specific ELA skills explored in this survey and the percentage of employers who reported that a lot or a fair number of jobs in their business require basic mastery of the skill. This figure also displays the percentage of employers who reported that, when hiring new employees, they had encountered a lot or a fair number of applicants who would be able to show basic mastery of the skill.

Figure 4

### English and Language Arts (ELA) Skills

% Employers Indicating Skill Need and Skill Availability



Employers demonstrated a significant need for a majority of the ELA skills explored in this survey. Over half of the employers surveyed indicated that several of their jobs require most of these skills. Skills that were lower in demand, but still needed by a fair number of employers included writing about topics using supporting facts (44%), determining meaning of unknown words (43%), and generation of original content that is not plagiarized (37%).

With regard to availability, employer ratings were consistently lower than demand. While employers indicated a strong need for these skills, they were less likely to report that these skills are widely available among applicants they have encountered in the hiring process. Differences in need vs. availability ratings ranged from 8% to 32%.

These results suggest that ELA skills are in high demand among employers. However, they are struggling to find applicants who can demonstrate these skills. Notable differences were observed for skills involving **clear and accurate communication**, including using correct spelling and grammar (difference = 32%), editing self-written content (difference = 28%), and production of clear writing (difference = 26%). Large differences were also observed for the **evaluation and application of content**, including applying information that is read (difference = 30%), assessing credibility (difference = 24%), and identifying main points (difference = 19%). Redirecting education efforts toward clarity and accuracy in language production, as well as the ability to evaluate and apply information, could help prepare jobseekers for the demands of the job market.

Among skills that were in moderate demand, the largest differences were observed for skills related to the **generation of content**, including writing about a topic using supporting facts (difference = 14%) and generating original content that is not plagiarized (difference = 10%). Such gaps suggest that students preparing for careers that require these skills may need additional preparation to meet employer demands in these areas.

## Technology and Digital Literacy Skills

Figures 5 and 6 presents the specific technology and digital literacy skills explored in this survey, as well as the percentage of employers who reported that a lot or a fair number of jobs in their business require basic mastery of the skills. These figures also display the percentage of employers who reported that, when hiring new employees, they had encountered a lot or a fair number of applicants who would be able to show basic mastery of the skills.

When asked about specific technology skills, employers demonstrated relatively high demand for skills pertaining to the use of common electronic devices, including computers (73%) and mobile devices (67%). Employers also reported a need for common user skills, involving writing emails (71%), entering data (69%), and word processing (56%). Learning to use technology was reported by half of employers (50%) as a needed skill. More specialized skills centering around specific computer programs (i.e., Excel or PowerPoint) or the general function of devices (i.e., data storage or computer code), were lower in demand with less than 40% of employers indicating that several jobs within their company require these skills.

With regard to digital literacy, employers did not indicate an overall strong demand for these skills. The one exception was using technology to communicate with others. This skill was reported by 69% of employers as a needed skill for many of their jobs. Skills that were in moderate demand included using digital sources to learn new skills (48%), using digital search strategies (46%), and understanding online security risks (45%).

Employer reports of the availability of technology and digital literacy skills seemed to run fairly close to demand, with differences ranging from 1% to 17% for most skills. The largest discrepancy was observed for understanding online security risks (difference = 30%).

Looking at the overall technology and digital literacy picture, it appears that basic skills involving the use of computers and devices for common tasks, such as writing emails, entering data, and word processing, are highest in demand. Employers also reported high demand for the ability to use technology to communicate with others. Moderate demand was observed for the ability to learn new technology and for digital literacy

skills related to learning, searching, and understanding online security risks. More complex skills, such as using specific computer programs (e.g., Excel, PowerPoint), understanding the function of devices (e.g., data storage or generating code), or gathering and examining digital information, were among the lowest in demand.

While reports of skill availability were relatively close to demand for most skills, some notable differences were observed. Employers seem to experience some difficulty meeting demand for **basic computer use** (difference = 14%), with specific challenges in the areas of data entry (difference = 12%) and word processing (difference = 12%). Employers also indicated gaps related to electronic communication, including writing emails (difference = 17%) and using technology to communicate with others (difference = 16%).

For skills that were moderate in demand, **understanding online security risks** is clearly an area of concern for employers needing this skill (difference = 30%). Some employers may also struggle to locate individuals with the **ability to learn new technology** (difference = 13%). For employers needing advanced skills, they may struggle most in locating individuals with knowledge of **spreadsheet programs**, such as Excel (difference = 15%) and digital literacy skills related to **evaluating credibility of digital sources** (difference = 13%) and **examining computer outputs** (difference = 12%).

Figure 5

## Technology Skills

% Employers Indicating Skill Need and Skill Availability

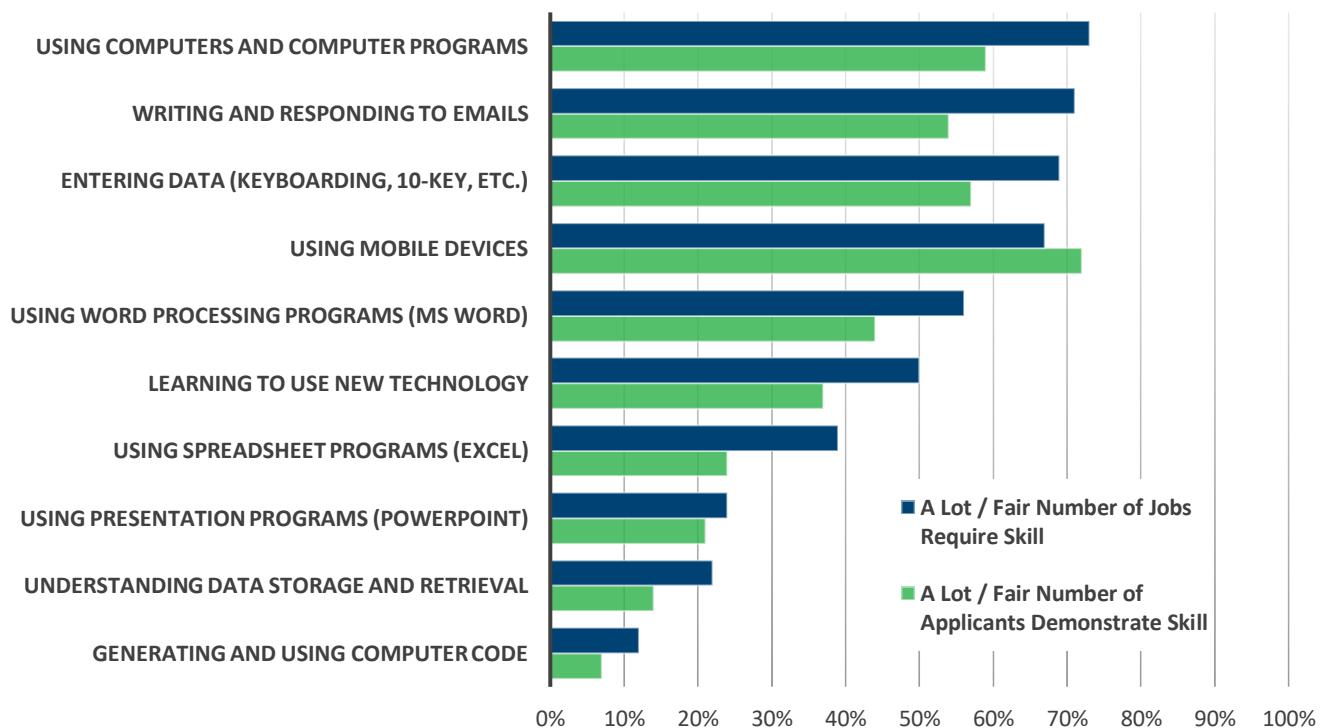
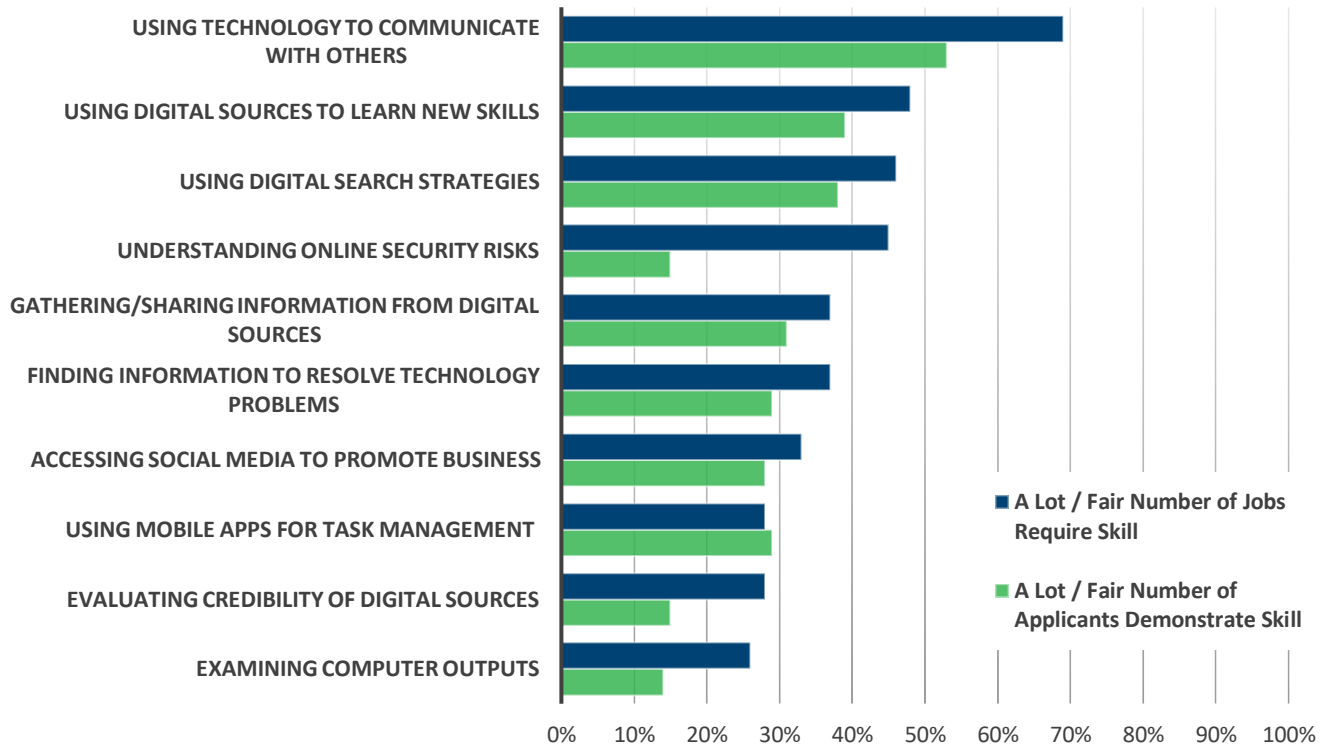


Figure 6

## Digital Literacy Skills

% Employers Indicating Skill Need and Skill Availability



## Soft Skills

Figure 7 presents the specific soft skills explored in this survey, as well as the percentage of employers who reported that a lot or a fair number of jobs in their business require basic mastery of the skills. These figures also display the percentage of employers who reported that, when hiring new employees, they had encountered a lot or a fair number of applicants who would be able to show basic mastery of the skills.

Overall, employers reported strong and consistent demand for soft skills. Over 80% of employers indicated that most of these skills were needed for several jobs in their business. Lower in demand, but still needed by over half of employers, were skills related to cultural competence and networking.

Reports of skill availability were significantly lower than demand for all soft skills explored in the survey. Differences in demand vs. availability ranged from 33% to 59%. These differences were among the largest observed in the analysis of specific skills in this survey.

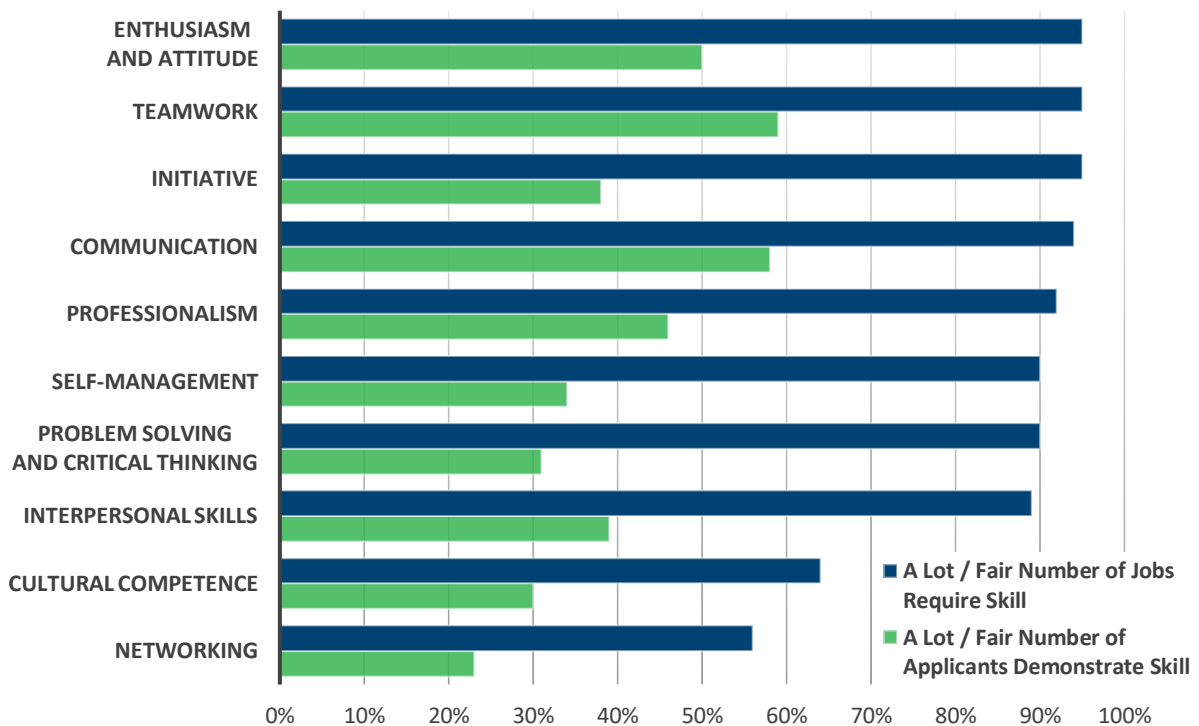
These results suggest that employers place tremendous value on soft skills. However, they are experiencing significant challenges in locating these skills within the current workforce. Skills of greatest need appear to be

in the areas of **problem solving and critical thinking** (difference = 59%), **initiative** (difference = 57%), **self-management** (difference = 56%), and **interpersonal skills** (difference = 50%).

Figure 7

## Soft Skills

*% Employers Indicating Skill Need and Skill Availability*



## Summary

The largest gaps in demand vs. availability were observed in employer reports for ELA and soft skills. Employers are struggling to meet demand for basic ELA skills related to clear and accurate communication along with the ability to evaluate and apply written content. As for soft skills, all are in critical demand, with employers seeing limited supply of many of these skills in the workforce.

For math, ratings of availability lagged behind demand primarily for skills related to real-world problem solving, measurement, and statistics. With regard to technology and digital literacy skills, basic computer skills, specifically in the areas of data entry, word processing, and electronic communication, seem to be lacking. For moderate-demand skills, employers indicated a need for individuals who understand online security risks, as well as individuals who have the ability to learn new technology. For advanced skills with more limited demand, notable gaps were observed in the use of spreadsheet programs and specific digital literacy skills focusing on evaluating the credibility of digital sources and examining computer outputs.



## Focus Area 2: Preference for Degrees or Skills

### *What degrees/certificates do employers require of their employees?*

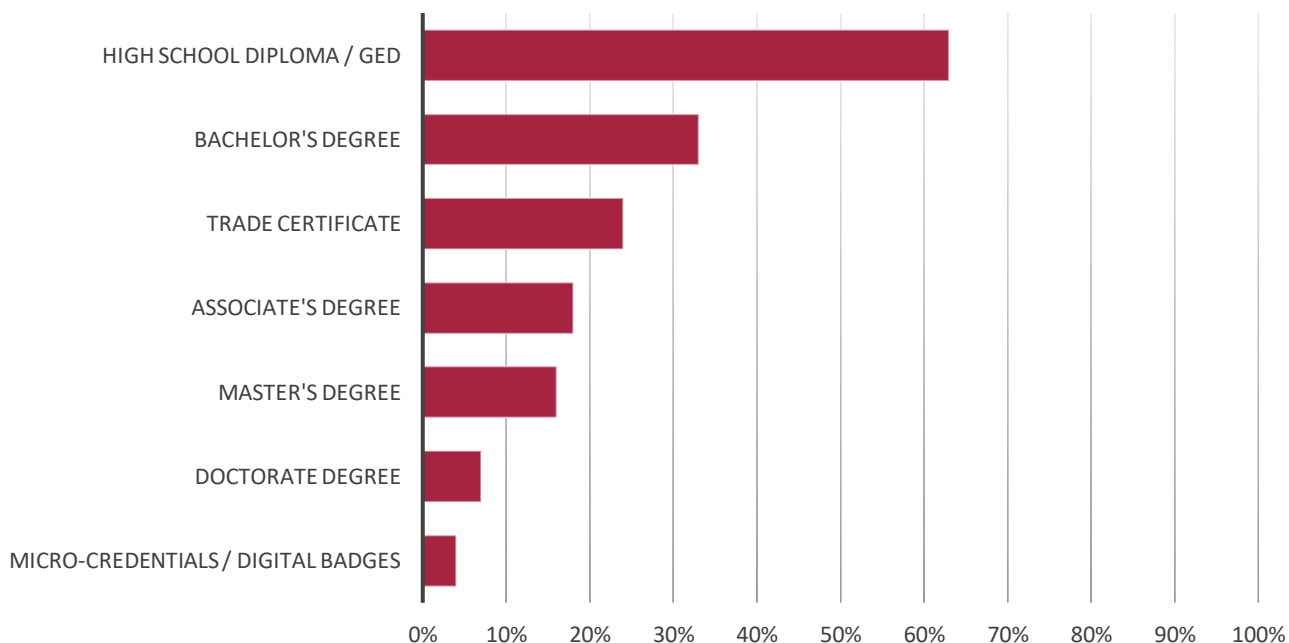
A high school diploma or GED was reported by a majority of employers (63%) as a requirement for most jobs in their company. This was followed by a bachelor's degree, with 33% of employers indicating a high need for this level of education. A fair number of employers reported that several of their jobs require a trade certificate (24%) or associate's degree (18%). Advanced degrees (i.e., master's and doctorate degrees) were among the lowest in demand (16%, 7%) and very few employers reported a need for micro-credentials or digital badges (4%).

It is significant to note that 24% of employers reported that many of their jobs require a trade certificate. This is compared to 33% of employers who reported a high demand for bachelor's degree. With trade certificates running close in demand to bachelor's degrees, this suggests that the number of employment opportunities for individuals with trade certificates may be similar to those with a bachelor's degree.

Figure 8

### Degree and Certificate Needs

*% Employers Indicating A Lot / Fair Number of Jobs Require the Following Degrees and Certificates*



### *What skills do employers associate with degrees/certificates?*

The results from this survey clearly indicate that employers have a general belief that degrees and certificates are associated with basic hard and soft skills. Figure 9 displays employers' overall perception of basic skills associated with degrees/certificates. For all skills listed, a majority of employers reported that individuals with degrees/certificates typically demonstrate these abilities.

However, Figure 10, illustrates that confidence in specific skill areas can vary depending on the type of degree. For each degree type (high school diploma, trade certificate or associate's degree, and bachelor's degree), employers were asked to reflect on their hiring experiences and rate the extent to which they believed individuals with these degrees demonstrate a basic mastery of five different skill areas. Consistent with the results displayed in Figure 9, over half the employers surveyed believed that basic hard skills, including mathematics, ELA, and use of technology, are associated with all degree types. As degree level increased, so did employer confidence in the presence these skills. Over 80% of employers reported that they believed individuals with a bachelor's degree demonstrate a basic mastery of these hard skills. This is compared to approximately 65% of employers who indicated these skills are typically observed in individuals with a high school diploma.

Figure 9

### **Employer Perception of Basic Hard and Soft Skills Associated with Degrees/Certificates**

*% Employers Rating Very True / Pretty True*

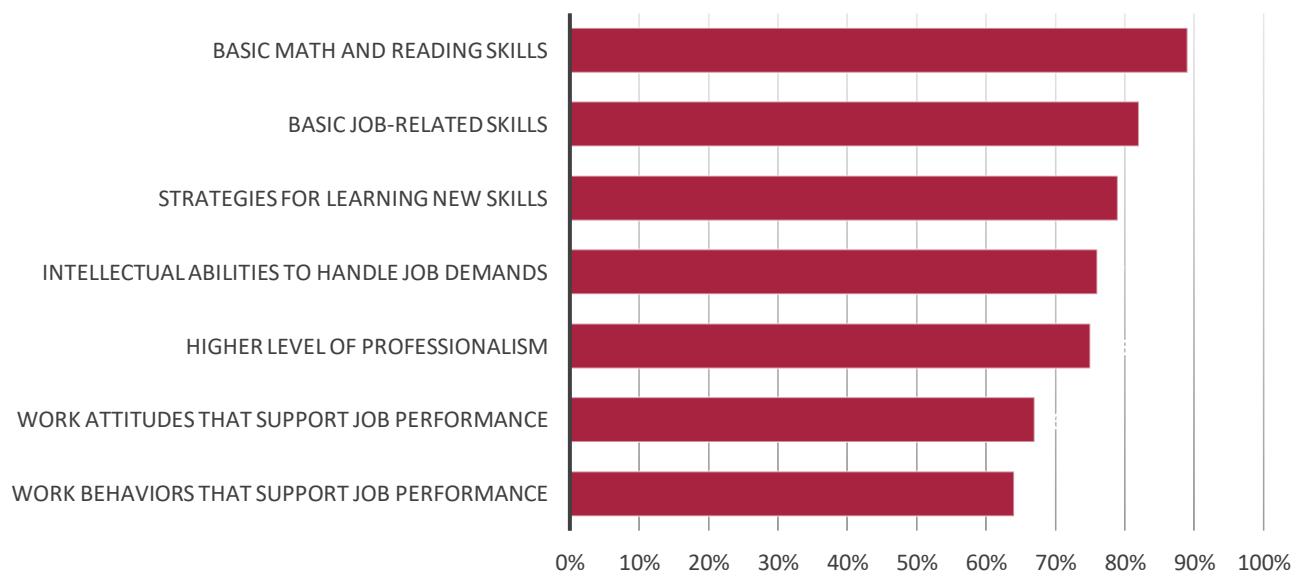
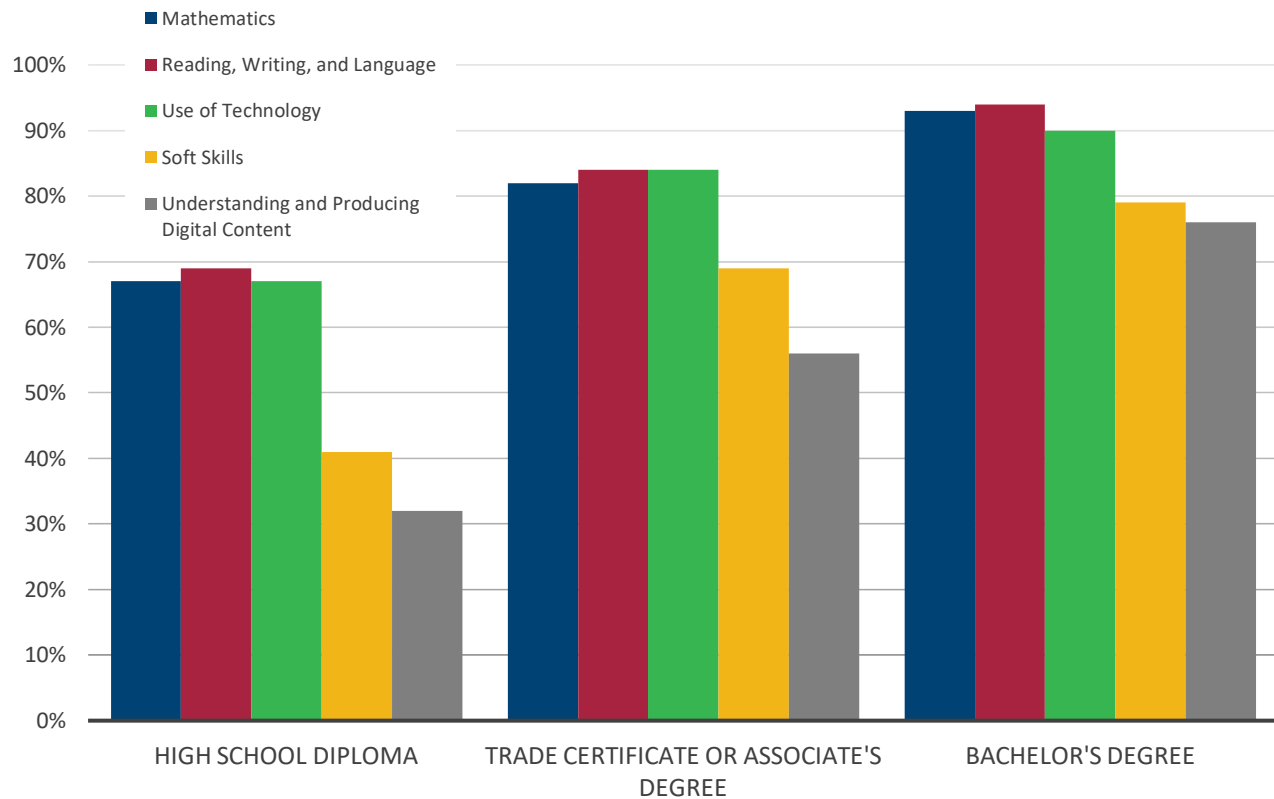


Figure 10

## Employer Perception of Skill Areas Associated with Specific Degrees/Certificates

% Employers Rating Very True / Pretty True



Notable differences were observed for employer ratings of soft skills and digital literacy skills (i.e., understanding and producing digital content). For all degree types, employers were less confident in the presence of these skills, suggesting that employers believe degrees are stronger indicators of fundamental hard skills than soft skills or digital literacy skills. This deficit was most apparent for individuals with a high school diploma. Less than half of employers reported that individuals with a high school diploma demonstrate basic mastery of soft skills (41%) or digital literacy skills (32%). As degree level increased, however, so did employer confidence in the presence of these skills. Over half of employers believed individuals with a postsecondary degree demonstrate soft skills and digital literacy skills.

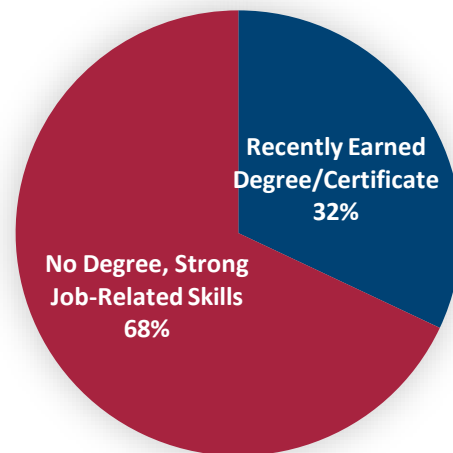
Together, these findings indicate that employers clearly believe basic skills are associated with degrees. As for soft skills or digital literacy skills, employer confidence in the presence of these skills is seen most often at or above the associate's or trade certificate level. It should be noted that, because employers were asked about "basic mastery" of these skills, these findings are not likely to extend beyond the most basic or fundamental skills in the areas explored.

## Do employers prefer degrees/certificates or skills?

To explore employer preference for degrees/certificates vs. skills, employers were asked, “For most jobs in your business/company, which type of applicant would be viewed as most prepared for successful job performance?” The following options were presented: (1) someone who had recently earned a degree or certificate from an academic institution and (2) someone who does not have a degree or certificate, but has strong job-related skills. The results displayed in Figure 11 show that most employers surveyed (68%) have a preference for skills. Additional support for this preference is demonstrated in Figure 12 where a majority of employers (80%) reported mastered industry-specific skills as being the strongest contributing factor to successful job performance.

Figure 11

### Employers Reporting Preference for Skills Over Degrees/Certificates



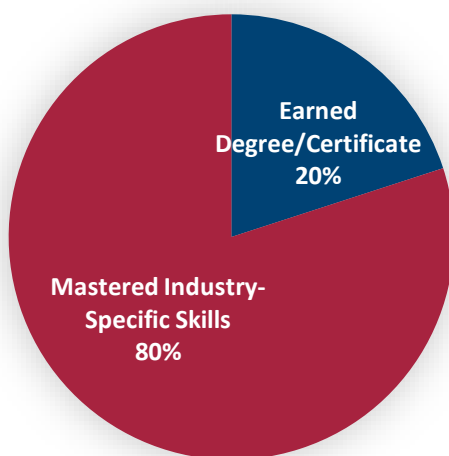
Clearly, employers place value on skills. Such evidence stands in opposition to the idea that employers commonly use degrees as an initial screening tool to identify “quality” applicants. For most employers, applicants with degrees do not appear to be given immediate preference. Rather, applicants with job-related skills are desired.

If employers value skills and believe degrees are indicators of skills, why are degrees not given priority? The answer lies in a deeper understanding of what degrees/certificates mean to employers.

In general, employers tend to associate degrees with specific jobs and/or skills. Of those employers who indicated a preference for a recently earned degree, the most commonly cited reason for this selection was that many of

Figure 12

### Employer Perception of Strongest Contributing Factor to Job Performance



their jobs require degrees or certificates (40%). For employers who said they preferred someone with skills over a recently earned degree, many (50%) emphasized the need for industry-specific hard skills as a reason for their choice. Furthermore, several of these employers reported that they would change their preference to someone with a recently earned degree when they were looking to fill “office jobs” or “technical jobs” (34%). Such evidence implies that employers prefer degrees to the extent to which they are required or associated with specific jobs and/or skills. For other jobs, employers may find value in the basic skills associated with degrees, but place greater importance on industry-specific hard skills that are not commonly thought to accompany degrees/certificates.

### *What information is used by employers to identify job-related skills in potential employees?*

The question of how employers identify job-related skills in potential employees was explored by having employers rank various information sources in order of importance, with the first being the most useful in determining job-related skills and the last being the least useful. The results, displayed in Figure 13, reveal that employers most often ranked job experience in a similar field of work as one of the top three most useful pieces of information. Degrees/certificates were frequently identified as a primary source of information for determining needed skills, but this source was also commonly ranked fifth (or second to last). Employers tended to rank reports of past job performance as third or fourth in usefulness, with trial periods to observe job performance being ranked most often as fourth or fifth. Employer rankings of recommendations from reliable contacts were found to be relatively evenly distributed across all levels. The least useful source of information for determining job-related skills was clearly micro-credentials and digital badges, with a majority of employers ranking this last among the sources they find useful.

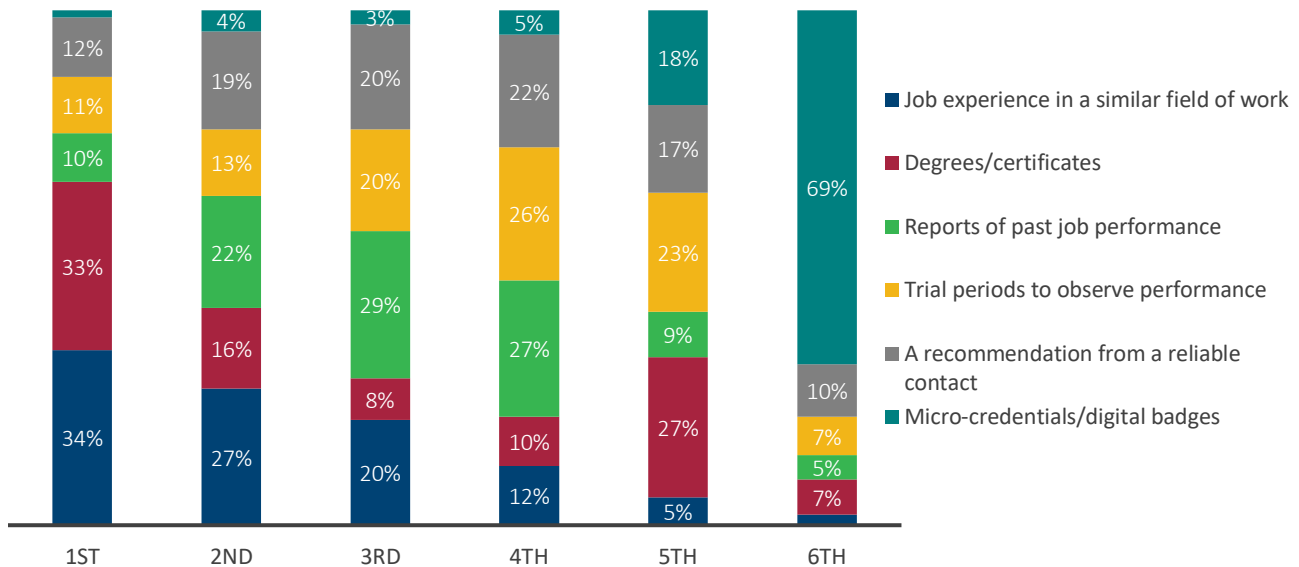
Overall, these findings suggest employers use past job experience in a similar field of work as a primary source of information to identify job-related skills in potential employees. While employers also look at degrees and certificates, this is not always perceived as useful information. Indeed, 27% of employers ranked this source of information second to last in usefulness. These results are consistent with the employer preference for skills over degrees described above. Given that most employers place considerable value on industry-specific skills, it would be expected that employers would look to other indicators of skill acquisition, such as experience in a similar field of work.

With regard to other sources of information, including reports of past job performance, trial periods, and recommendations, these were likely perceived by employers as being less useful in determining job-related skills due to their limited strength as a skill indicator. Reports of past job performance, if not in a similar field of work, may not always speak to industry-specific skills. Also, trial periods and recommendations may be limited in usefulness due to cost or the availability of reliable contacts. Micro-credentials and digital badges are relatively new and employer unfamiliarity with these credentials could explain their lack of usefulness expressed by employers.

Figure 13

## Rankings of Most Useful Information for Determining Job-Related Skills

% Employer Ranking Various Information Sources - Most Useful (1<sup>st</sup>) to Least Useful (6<sup>th</sup>)



## Focus Area 3: Awareness of WVDE Career Programs

*Are employers aware of the career programs offered by WVDE? Do employers believe the career programs offered by WVDE are beneficial?*

About half of employers surveyed indicated they were aware of the career programs offered by the West Virginia Department of Education. They were slightly more aware of Career and Technical Education (61%) and Adult Education (61%) programs and slightly less aware of Co-Curricular Student Organizations (50%) and Simulated Workplace (49%). With regard to perceived benefit, over 70% of employers indicated they believed these programs were beneficial.

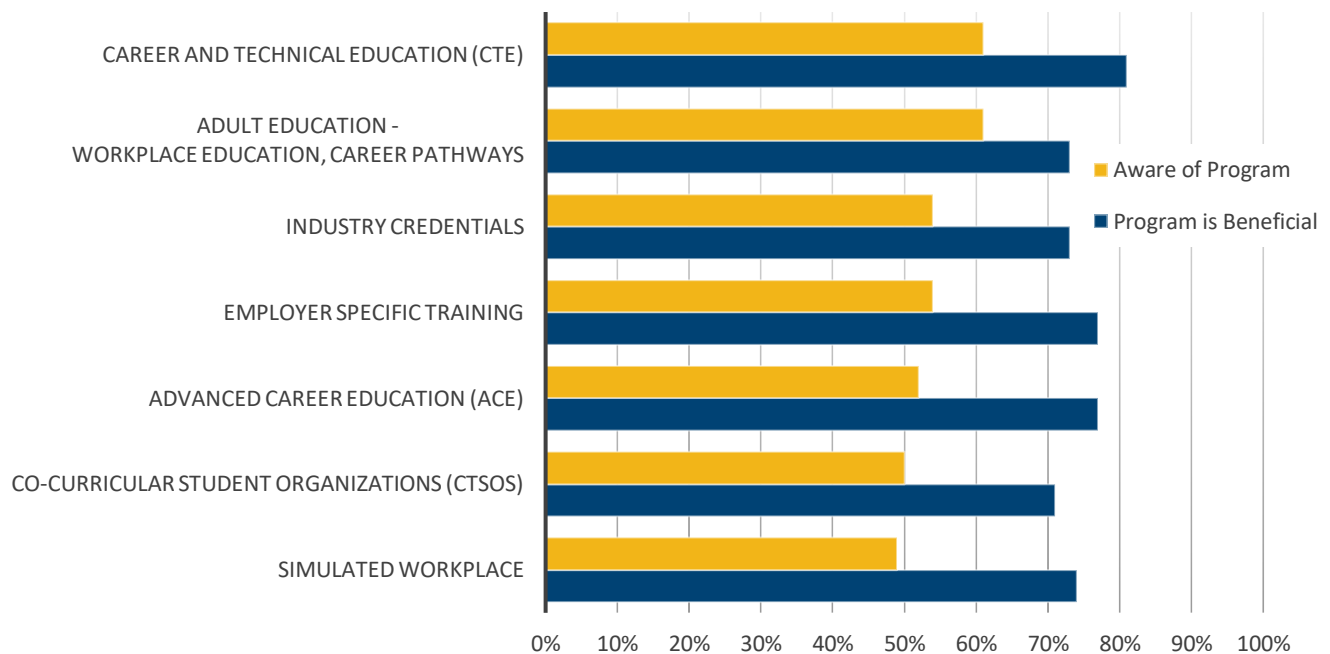
These results point to the fact that, while employers have a general belief that career programs offered by WVDE are beneficial, they tend to feel less confident in their awareness of these programs. Limitations in awareness were also observed in spontaneous comments made by employers in a comment box presented at the end of the survey. One employer said, "More education for employers on the programs available. I was not aware of several of the programs that you listed in the survey." Another said, "It is helpful to know

additional programs that are available.” Similarly, another employer wrote, “Increased education to business to understand the services provided. We have limited employment and in-service training opportunities, but are open to promoting workforce development. We just don’t know what programs are available.” Such comments, paired with employer ratings of awareness of WVDE career programs, indicate that employers may need additional contact from WVDE to increase employer knowledge of these programs.

Figure 14

## Employer Awareness and Perceived Benefit of WVDE Career Programs

% Employers Rating Very True / Pretty True



## Employer Requests for Industry-Education Connections

At the end of the survey, employers were given the opportunity to provide additional comments that might assist the West Virginia Department of Education in promoting workforce development. Of the 42 employers who chose to add comments, requests for industry-education connections were most common (42%). The table below presents some of these comments. A central theme that emerged was a desire for education to understand the needs of industry and for industry to understand the services provided by education.

## Employer Requests for Industry-Education Connections

*Would be nice to share the information with business as to how to get involved and be able to recruit potential employees at the high school level.*

*You need to get out in your Communities and see what your companies need training for.*

*I would start by focusing on what the dominant industries of the future are and work my way backwards to understanding how large the gap in our workforce, conduct a needs assessment and gauge how long it will take to close it.*

*I have called the Technical Center in Keyser WV looking for seniors or first year out of school students in the carpentry classes. This position could be the right students future pending skills, and interest. I spoke with the carpentry teacher ----- and he said that he would give me a list of student names. I called back three weeks later and ----- apologized to me and stated that he was busy and again said that he would get back to me with the names of qualified students. AGAIN two weeks later I called the technical center and ask to speak with the Principle ----- and explained the conversations that I had with ----- She assured me that she would have ----- get in touch with me. Well now another MONTH has passed and I have heard NOTHING from either. The performance of these two educators is not acceptable to me, they are messing with a students future. With the right student he or she could work themselves into a very good future with the right interest. There is no reason that the student in time couldn't be making 50K a year. I was going to publish this in the paper to let the public know how these two are messing with a persons future but chose not to until i see the response i receive from this post. If no response it will be copied and pasted in the local papers. Sound like I'm disgusted, your right. Thank You.*

*Get everyone in the education system on the same page! As a Marion co wv business owner I've tried working with the Board Superintendent for a program for CDL drivers. The idea shut down in the first conversation because of what he said to be hard state laws to work with on new programs.*

*being a medium size company many state organizations are less than enthusiastic. Example, my attempts to start a vocational program at our local HS and at the Byrd Inst go now where when my demand is only 1-3 people per year. There are some individuals who have been very helpful or happy to try. Some of the apprentice programs, veterans affairs. They would be more effective if they could gather companies with common needs to develop programs with critical mass.*

*Training and certificates are excellent for an entry level employee, however, job skills are more important if you want the employee to be productive day one. More programs that place employees into the workforce either via internship, work based learning or paid work would be much better than a pure class room or simulated work place environment. The final part of any program should be real work experience, get them the basic skills and then put them in the workplace for a short period of time become proficient in what they have learned. We spend a lot of resources training folks that are missing some basic work skills.*



Such responses provide insight into employers' desire to enhance the alignment between industry and education. Employers clearly want to engage in meaningful interactions with education. Many want to build a better understanding of current efforts in education to prepare students for careers. Some want to help connect students to viable career opportunities in their businesses. Others want to help focus career programs on meaningful learning experiences for students, such as apprenticeships and work-based learning.

Most importantly, however, employers want to communicate skill needs and help direct efforts to ensure students are prepared with these skills. Of particular concern are soft skills. Indeed, a strong need for soft skills was the second most frequent statement made by employers (26%). One employer said, "Students also need to be taught critical thinking, not just how to regurgitate facts for a test." Another wrote, "Finding a way to emphasize the importance of attitude, initiative, communication skills, & professionalism, starting in school age teens/young adults seems like it would help provide a strong foundation for future educational/training opportunities." Thus, employers clearly want educators to be aware of the importance of soft skills in the workplace.

The fact that employers consistently reported a desire to share information and build opportunities for students indicates a readiness and willingness to form meaningful connections with education. Likewise, they are ready for education to enter into this relationship with the shared purpose of preparing students for successful entry into the workforce.

# Recommendations

## Focus Area 1: Skill Needs and Availability

### *Understand the Skills Gap and Support Efforts to Close the Gap*

There is strong evidence pointing to a skills gap in the state of West Virginia. Employers participating in this survey reported significant challenges filling open positions. The most commonly selected reason for this difficulty was the inability to locate individuals with necessary skills. Such findings are consistent with numerous reports that have identified similar gaps, suggesting that skills gaps are a pervasive problem across the United States (Business Roundtable, 2017; Council of Economic Advisors, 2018; Crowe, 2019; Dunkelberg & Wade, 2010; ManpowerGroup, 2018).

Identification of a skills gap is the first, and most critical, step in developing policies that can help mitigate negative outcomes, both for industry and individuals seeking employment. When good jobs go unfilled, businesses struggle and individuals miss opportunities to achieve employment success. Thus, it will be critical for WVDE to continue to monitor the presence and severity of the skills gap (through additional surveys or other employer contacts) to determine if students are entering the workforce ready and prepared for careers.

Building awareness of the skills gap, however, is only part of the solution. The next step is to identify specific skill needs among employers. A primary goal of this survey was to explore basic skills in the areas of mathematics, English and language arts (ELA), use of technology, digital literacy, and soft skills. The results of this exploratory investigation reveal several basic skill areas where employers are struggling to meet needs.

### **Soft Skills**

Of most critical need among West Virginia employers are soft skills. These skills commonly center around communication, enthusiasm and attitude, networking, problem solving and critical thinking, professionalism, and teamwork. Additional soft skills often include cultural competence, initiative, interpersonal skills, and self-management. Employers participating in this survey indicated very high demand for these skills and significantly low availability in the current workforce. Considerably high shortages were observed for problem solving and critical thinking, initiative, self-management, and interpersonal skills. For all levels of education, employer confidence in soft skills was found to be lower than hard skills. Employers reported soft skills to be particularly lacking among individuals with a high school diploma as their highest level of education.

Such findings are in keeping with trends observed at the national level. Employers across the country are reporting significant challenges in locating individuals with critical soft skills that are needed for successful job

performance in their businesses and companies (Bloomberg Next, 2018; Udemy, 2018; US Chamber of Commerce Foundation, 2017). As was seen in this survey, employers are struggling most with skills related to problem solving and critical thinking, as well as interpersonal skills. Moreover, employers are becoming increasingly concerned with soft skills in recent high school graduates.

This high demand for soft skills is not surprising given the rapid shifts in technology that are affecting the nature of work at all levels. Businesses are relying more on automation and artificial intelligence to handle low-skill, repetitive tasks. Many jobs are being replaced with more efficient technological solutions. Likewise, many jobs are being created to handle the maintenance and use of this technology. As a result, employers are experiencing an increased need for “human” skills, such as problem solving and critical thinking, that complement the use of technology in the workplace (Deegan & Martin, 2018; Muro, Maxim, & Whiton, 2019; Weise, Hanson, Sentz, & Saleh, 2018)

### *Recommendations*

To address the gap in soft skills, a shift of perspective is needed. Soft skills will need to be given priority alongside hard skills. This change of perspective can occur at various levels within the education system in West Virginia. To encourage more widespread implementation of soft skills programs and strategies, a shift of emphasis toward soft skills at the highest levels would be most effective. Policies developed at the state level can direct implementation across districts in West Virginia. A critical component of these efforts will be the exploration and establishment of soft skills curriculum, programs, and/or resources.

There are a number of stand-alone programs currently available that can be offered to enhance the development of soft skills. The most economical among these options is the free curriculum offered by the United States Department of Labor called, “Soft Skills to Pay the Bills – Mastering Soft Skills for Workplace Success.” This curriculum was created to introduce youth ages 14 to 21 to workplace interpersonal and professional skills. Efforts are currently in progress at Pathway2Careers to expand content within this curriculum and develop a delivery framework to support effective implementation of this program in K-12 settings.

Another approach is to embed soft skills instruction within preexisting core curriculum. Using this strategy, skills such as communication, teamwork, attitude, and others, can be incorporated directly into current lessons across a wide range of subject areas. For example, teamwork skills can be introduced in the context of groupwork, which is a common instructional strategy, regardless of topic or theme. Enhancing these experiences with a simple framework that outlines leadership roles, accountability, and group expectations can help students explore the dynamics of effective group interaction and provide a foundation for building teamwork skills.

Both approaches have merit and assessment strategies are being explored to examine the effectiveness of various soft skills programs (Hanover Research, 2014; Northwest Evaluation Association, 2018). Ultimately, the type of approach may not be as critical as the implementation of a basic strategy to support the development of soft skills in students. Given the high demand for soft skills from employers in West Virginia, workforce development efforts by WVDE could be significantly enhanced with the incorporation of a soft skills program.

## English Language Arts (ELA) Skills

Similar to soft skills, a high demand with low reported availability was observed for ELA skills. Over half of employers surveyed reported that many of their jobs require most of the ELA skills explored in this study. For a majority of the skills explored, employer ratings of availability were significantly lower than demand. There seems to be particular need for skills related to clear and accurate communication, as well as the evaluation and application of written content. For moderate-demand skills, employers reported shortages in the area of content generation (i.e., writing about a topic using supporting facts and generating original content). The demand for ELA skills paired with low availability highlights another area in which WVDE can focus efforts to support workforce development.

Such gaps in ELA skills are not unique to West Virginia. Indeed, several executives and hiring managers in a variety of locations have reported difficulty locating individuals with good written and oral communication skills (Association of American Colleges and Universities, 2018). Employers are also expressing difficulties in hiring individuals with the ability to read and apply information, particularly information from manuals or technical publications (Sawchuk, 2018). For many employers, professional writing, including the ability to explain concepts and ideas succinctly and the ability to switch tone and format to fit different audiences, is of particular concern (John, Chen, Navaee, & Gao, 2018).

### *Recommendations*

Efforts aimed at teaching basic reading and writing skills should be reevaluated. Revised instructional strategies are needed to support proficiency in the production of clear and accurate communication (i.e., the ability to use correct spelling and grammar, produce clear writing, and edit self-written content), as well as competence in the evaluation and application of written information (i.e., the ability to apply content that is read, identify main points from materials, and assess the credibility of information). Additional attention may also be needed to strengthen content generation skills, with specific emphasis on the ability to write about a topic using supporting facts and generate original content that is not plagiarized.

The focus of ELA instruction should be expanded to support the development of critical workplace reading and writing skills. At the most basic level, this can involve an evaluation of current reading and writing tasks to identify workplace relevancy. For example, common writing tasks in secondary institutions include note-taking, short-answer response, worksheets, and explanations. However, in the workplace, professional writing often involves clear and considerate emails, succinct explanations, evidence-based persuasive writing, and conveying similar information to different audiences. Refocusing ELA efforts and shifting toward more valued workplace skills could better prepare students for common tasks they will face throughout their careers.

Incorporating career-relevant ELA instruction can be accomplished in a number of different ways. First, students can be given the opportunity to read materials in the context of specific job fields. By exposing students to high-value careers and introducing them to content that is relevant to these careers (e.g., technical manuals, patient charts, business documents, etc.) they gain first-hand experience with materials they are likely to encounter in the workplace. Furthermore, teaching students how to navigate and extract meaning from these materials can ensure they are prepared to handle common reading demands in the world of work.

Second, students can benefit from opportunities to develop practical, work-related writing skills. Writing is not a single skill that easily translates across multiple forms (e.g., the ability to write poetry does not automatically transfer to technical writing). Thus, there is a need to infuse career writing into ELA instruction that focuses more on common writing tasks in the workplace, such as persuading, explaining, and conveying experiences. Students should be exposed to professional writing styles and provided the opportunity to practice communicating in a professional environment. Giving students the chance to develop their skills in writing professional emails, business reports, resumes and cover letters, can significantly enhance their success in both getting a job and maintaining positive job performance.

Regardless of the approach, the primary goal should be to create rich and relevant ELA experiences that expose students to a variety of different reading and writing tasks, especially work-related tasks. The assumption that traditional literacy instruction transfers to all settings and is adequate for today's jobs can be dangerous. To achieve employment success, students need direct and meaningful opportunities that connect them with the demands of today's work and promote reading and writing skills that are essential to job performance in today's workplace.

### **Math, Technology, and Digital Literacy Skills**

Compared to soft skills and ELA skills, less critical skill shortages were found in the areas of mathematics, technology, and digital literacy. Nonetheless, there were some notable skills where additional attention and instruction may help assist employers in meeting their needs. For math, ratings of availability lagged behind demand primarily for skills related to real-world problem solving, measurement, and statistics. Such gaps suggest employers in West Virginia are struggling in meeting needs related to the use and application of practical math skills. These findings echo results from other surveys where the need for practical math skills tends to outweigh the need for higher-level mathematics, like algebra or geometry (Handel, 2016).

With regard to technology and digital literacy skills, difficulty meeting demand was observed for basic computer skills, specifically in the areas of data entry, word processing, and electronic communication (i.e., writing and responding to emails and using technology to communicate with others). For moderate-demand skills, employers indicated a need for individuals who understand online security risks, as well as individuals who have the ability to learn new technology. For advanced skills with more limited demand, notable gaps were observed in the use of spreadsheet programs and specific digital literacy skills focusing on evaluating the credibility of digital sources and examining computer outputs.

#### *Recommendations*

To address gaps observed in mathematics, students need additional instruction and practice in the use of practical math skills. Learning in the context of specific careers may be particularly beneficial in building these skills. This can be accomplished by familiarizing students with high-value careers and introducing them to practical math tasks they are likely to encounter in the world of work. When possible, bringing in working professionals from multiple fields can help students understand the math they will need on the job. Such efforts bring practical workplace math skills into focus and provide opportunities for students to practice real-world application of these skills. Given that the use of practical math skills, such as real-world problem solving,

measurement, and statistics, are needed within most professions, additional efforts in this area would benefit all students.

Although lower need and less dramatic shortages were observed for technology and digital literacy skills, this is an area that should be carefully evaluated. Gaps in technology and digital literacy are expected to grow and emerge as we continue to move into the Fourth Industrial Revolution (Manyika et al., 2017; World Economic Forum, 2018). This revolution will be marked by rapid advances in automation, artificial intelligence, and the fusion of technology with almost every aspect of daily living. Unlike, previous revolutions where change was slow and more gradual in development and implementation, this revolution will be rapid and pervasive. New technology is appearing daily and it takes only seconds for knowledge of these advances to travel across the globe. As result, the demand for skills related to the development, maintenance, and use of various forms of technology is expected to rise quickly. To prepare for this demand, individuals will need, at the very least, a strong familiarity and comfort with the use of technology. Moreover, the ability to learn and adapt to technology will also be highly prized.

It is recommended that efforts be made in West Virginia to address current gaps in technology and digital literacy skills as soon as possible and begin preparing for future needs immediately. The most direct and comprehensive method of teaching these skills is through increased implementation of technology in classroom. Teachers have the unique opportunity to model common uses of technology and, in turn, students can be provided opportunities to observe and replicate these behaviors. Simply using technology, however, is not sufficient. Valued workplace skills need to be thoroughly incorporated into common classroom activities. If, for example, jobs are requiring professional electronic communication, students can be encouraged to engage in this type of communication more frequently with parameters and expectations that would be similar to what they would experience in the workplace. For this approach to be most effective, continuous evaluation and adaptation of skills incorporated into the classroom will need to occur. Thus, it will be essential that WVDE monitor emerging gaps closely and stay abreast of new developments in technology to maintain awareness of the principal skills students will need.

### Focus Area 1 – Summary of Recommendations

- **Encourage Soft Skills:** Implement programs and strategies that can assist in the development of soft skills with particular emphasis on *problem solving and critical thinking, initiative, self-management, and interpersonal skills*.
- **Increase Efforts in ELA Education:** Focus on enhancing skills related to *clear and accurate communication*, as well as the *evaluation and application of content*. For moderate-demand skills, additional instruction is recommended in the area of *content generation* (i.e., writing about a topic using supporting facts and generating original content that is not plagiarized).

### Focus Area 1 – Summary of Recommendations (continued)

- **Address Specific Math Skills:** Provide additional instruction on practical math skills related to *real-world problem solving, measurement, and statistics*.
- **Address Specific Technology and Digital Literacy Skills:** Focus attention on high-demand skills related to *basic computer use*, specifically in the areas of data entry, word processing, and electronic communication. For moderate-demand skills, attention is needed to enhance *understanding online security risks* and promote the *ability to learn new technology*. For advanced skill areas with more limited demand, instruction is needed in *using spreadsheet programs* and specific digital literacy skills focusing on *evaluating credibility of digital sources* and *examining computer outputs*.

### Explore Additional Industry-Specific Needs through High-Value Careers

A primary objective of this study was to identify basic skill needs among employers in West Virginia and determine areas where employers may be struggling to meet these needs. While basic skill needs are a critical component of understanding skills gaps, equally important is the recognition of industry-specific needs. That is, specific skill demands and shortages that may be occurring within particular fields of work such as health care, construction, manufacturing, information technology, and more. Identifying these needs can help direct decision-making around specialized programs that prepare students for careers in their communities.

The most efficient approach to understanding industry-specific needs is to first establish awareness of high-value careers (i.e., high-demand, high-wage careers), particularly within local regions. Knowledge of local high-value careers provides insight into good jobs that will be most plentiful to students in their communities. Once identified, efforts can be made to determine the skills needed to gain entry into these professions. This can be accomplished through searches of career databases that describe common skill requirements for various professions. Most importantly, relationships can be established with local high-value employers to explore specialized skill needs and shortages. The primary goal in this method is to seek out viable career destinations in local regions and develop an understanding of skill needs and shortages so that education programs can better prepare students for successful entry into the workforce.

Pathway2Careers offers a simple solution to understanding local labor markets and identifying high-value careers. As a comprehensive career preparation system, P2C places emphasis on helping schools and students become career-wise, career-engaged, and career-ready. Within the career-wise component, P2C provides tools and resources that help build awareness of local high-value careers, including an easy-to-use labor market exploration system and professional development materials that familiarize educators with labor market exploration strategies. This system can be used to explore local high-value careers and develop effective career plans that meet the needs of both students and employers.



## P2C Career Preparation Model

### Career-Wise

Students will have the necessary information to support informed-career decisions.

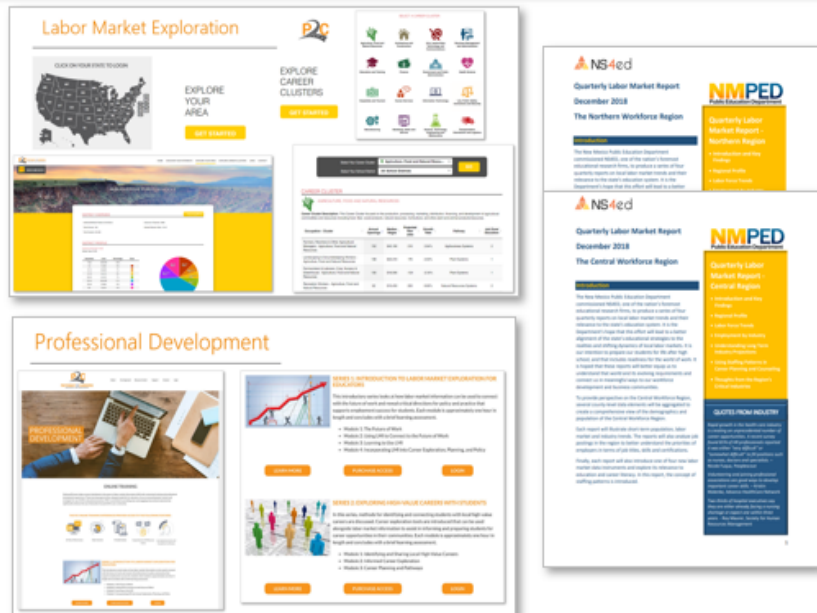
Pathwa2Careers provides tools and services that support critical awareness of labor market demands, career requirements, and education pathways.

#### Currently Available

- Labor Market Exploration System (state and local data)
- Online Professional Development (designed for educators)
- Employer Survey Tool
- State and Regional Labor Market Reports

#### Future Development

- Student Career Exploration System



## Focus Area 2: Preference for Degrees or Skills

### *Emphasize Multiple Postsecondary Education Pathways for Students*

For most employers in the state of West Virginia, a high school diploma appears to be sufficient for a fair number the jobs in their businesses and companies. Beyond a high school diploma, bachelor's degrees were next in demand, with a third of employers indicating that this level of education is often necessary for employment in their company. Close behind bachelor's degrees, however, were trade certificates. Nearly a fourth of employers reported a high need for this type of credential. With trade certificates running close in demand to bachelor's degrees, this suggests that the number of employment opportunities for individuals with trade certificates may be similar to those with a bachelor's degree.

The relatively high need for trade certificates observed in this survey is not surprising in light of recent reports highlighting the rising demand for middle-skills credentials (Carnevale et al., 2018). Nationally, middle-skill jobs account for about 24% of good jobs. Furthermore, good jobs at this education level are rising faster than



jobs at the high school level. Such trends point to an emerging shift in employment opportunities and demand toward individuals with postsecondary degrees and credentials. This is good news, given that several middle-skill jobs pay well. In fact, middle-skills jobs can often pay more than jobs requiring a bachelor's degree, especially in STEM-related fields (Carnevale & Cheah, 2018; Carnevale, Strohl, et al., 2017)

### *Recommendations*

With the increasing demand for middle-skills credentials and the ability for individuals at this level of education to access good jobs, it will be important for WVDE to encourage students to consider multiple education pathways. The traditional focus on preparing students for entry into four-year institutions may be too narrow in scope. Furthermore, allowing students to exit directly into the workforce with only a high school diploma may set students up for employment failure, as the number of good jobs at the high school level continues to decline. As we move into the future, the best approach to ensuring students are ready for work will be to encourage multiple postsecondary education pathways. It will be particularly beneficial for students to have increased awareness and improved access to middle-skills pathways.

### *Increase Connections Between Degrees/Certificates and Industry-Specific Hard Skills*

The results from this survey indicate that employers believe degrees and certificates are associated with basic hard and soft skills. Furthermore, confidence in these skills was found to increase as education level increased. The value employers see in degrees, however, appears to be limited. When asked to choose between (1) an applicant who had just earned a degree or certificate from an academic institution or (2) an applicant who did not have a degree, but had strong job-related skills, most employers reported they would choose the latter. Such evidence points to a strong preference for skills over degrees. A preference for degrees was observed in specific cases where degrees are required (primarily by law) or for particular jobs, such as “office jobs” or “technical jobs.”

Similar evidence suggesting employer preference for skills was seen in the information employers use to identify job-related skills in potential employees. Employers most often ranked job experience in a similar field of work as one the top three most useful pieces of information. Degrees/certificates were frequently identified as a primary source of information for determining needed skills, but this information source was also commonly ranked fifth (or second to last).

So, what does this all mean? While employers see value in degrees and demonstrate a need for the basic skills associated with degrees (as evidenced in findings for Focus Area 1), these skills are not always seen as enough to support successful job performance. Employers place considerable value on industry-specific skills acquired through experience. When it comes to degrees and certificates, employers find these most useful in the context of specific jobs with specialized skill sets. Outside of these specific jobs or skills, degrees have limited application.

### *Recommendations*

If employers trust job experience and place high value on skills acquired on the job, this should be a clear indicator that real-world learning opportunities need to be a central component of educational experiences at all levels. At the moment, employers are relying heavily on past experience as a primary indicator of successful job performance. This is problematic, both for employers who have to depend on subjective and potentially unreliable measures of skill acquisition, and for recent graduates with limited experience who are attempting to gain entry into a field of work. To support the needs of employers and graduates, there needs to be more objective, reliable markers of experience-based skill acquisition.

It is recommended that WVDE continue and expand efforts to provide on-the-job training to students. Programs, such as Simulated Workplace and Career and Technical Education, help bridge the gap between learning and real-world application. Furthermore, students can benefit from additional apprenticeships, internships, and other-work-based learning opportunities. These can occur at the level of large corporations or within smaller businesses seeking to support education efforts or build a pipeline of talent. On a smaller scale, classroom projects that involve collaboration with local businesses or volunteer experiences can help students build the industry-specific skills employers are seeking. Regardless of the programs that are established, strong partnerships between schools and businesses will be essential in building collaborative efforts in preparing students for the world of work.

Most importantly, these work-related learning opportunities need to be integrated into degree attainment at all levels, including high school. Imbedding job experience into education has the potential to increase employer interest in recent graduates and create a more direct route to higher levels of employment for students. Furthermore, drawing out work-based experiences and highlighting specific accomplishments that speak to career readiness could be helpful. This might involve incorporating specific credentials or professional records of demonstrated performance into degrees. Such markers would serve as objective indicators of real-world career readiness for employers. Overall, linking work-based learning opportunities to degrees and certificates in clear and meaningful ways could provide a valuable point of connection between employers and students.

In addition to increasing work-based learning opportunities, employers in West Virginia may also benefit from a broadened perspective on degrees. Given their belief that degrees are associated with a specific set of occupations (e.g., office or technical jobs), their view of degrees may be overly restrictive. In truth, the skills associated with degrees have a wide range of uses. Someone with a bachelor's degree in psychology, for example, may perform particularly well in a management position, given their in-depth knowledge of how people think, learn, and behave. Likewise, someone with a degree in theatre or performing arts may be an excellent choice for a training position, given their unique skills in capturing people's attention. Thus, helping employers identify skills associated with degrees and recognize the various applications of these skills could assist employers in connecting with a wider pool of skilled workers. This can be accomplished in a variety of ways, including information meetings, degree-occupation mapping documents, and other similar resources. The most efficient method may be to direct employers to online resources that list various degrees and applicable professions.

Finally, employers may find limited value in degrees and certificates given that few degrees have useful application within their particular field of work. This may be an opportunity for education to fill a direct need for employers seeking qualified employees with meaningful credentials. For many industries, advancements have occurred so rapidly over the past decade that even entry-level positions are requiring specialized skills (Carnevale et al., 2018; World Economic Forum, 2018). As a result, employers are struggling to locate industry-trained individuals. Connecting with employers and determining specific skill needs within particular industries could lead to the creation of additional degree and certificate programs that could prepare students for entry into these fields. Furthermore, employers would have a more direct method of identifying these skilled individuals through their attainment of these credentials. As entry-level skill levels continue to rise across professions, it will be essential for education to be attuned to these needs and adjust as needed.

## Focus Area 2 – Summary of Recommendations

- **Encourage Students to Explore Multiple Education Pathways:** The traditional approach of preparing students for four-year institutions or entry into the workforce with a high school diploma can limit opportunities for students. Students need to be encouraged to explore the multiple postsecondary education pathways that are available, especially middle-skills pathways that provide access to good jobs.
- **Integrate Work-Based Learning into Degree Attainment at all Levels:** Given the strong employer preference for experience, real-world learning opportunities need to be a central component of educational experiences at all levels. Imbedding job experience into education has the potential to increase employer interest in recent graduates and create a more direct route to higher levels of employment for students.
- **Broaden Employer Perspectives on Degrees and Certificates:** Employers' perception of degrees may be overly restrictive and limited to a narrow set of professions. Employers could benefit from informational meetings and resources that expand their knowledge of skills associated with the degrees and the application of these skills to various professions.
- **Create Additional Degree and Certification Opportunities for Students:** For many industries, rapid advancements have occurred, generating new and immediate skill needs, especially within entry-level positions. Connecting with employers and determining specific skill needs within particular industries could lead to the creation of additional degree and certificate programs that prepare students for entry into these fields.

## Focus Area 3: Awareness of WVDE Career Programs

---

### *Increase Employer Awareness of WVDE Career Programs*

Approximately half of the employers participating in this survey reported awareness of many of the career programs offered by WVDE. Awareness was slightly higher among employers for Career and Technical Education and Adult Education programs and somewhat lower for Co-Curricular Student Organizations and Simulated Workplace. While a fair number of employers indicated they were aware of the WVDE career programs, there was still a large percentage of employers who reported limited to no awareness of these programs. Furthermore, several employers chose to add spontaneous comments at the end of the survey requesting additional information about career programs. Thus, there is room for improvement with regard to how much employers know about the programs offered by WVDE.

#### *Recommendations*

It is suggested that WVDE encourage and enhance employer access to information about WVDE career programs. Employers clearly have a desire to learn more about student preparation for careers, but they may struggle to locate this information. Increasing the amount and/or accessibility of this information could promote employer awareness of WVDE career programs. Employers may also benefit from instruction on how the WVDE career programs can directly impact their business practices. Helping employers see the usefulness of these programs in supporting their hiring and training practices could significantly increase their interest and engagement in learning more about the various career programs. Thus, it is recommended that WVDE not only enhance access to information, but also assist employers in identifying the multiple uses of this information, especially pertaining to hiring employees. A simple, straightforward online resource center for employers that offers information pages, videos, and other useful materials for employers could be particularly helpful in accomplishing this goal.

### Focus Area 3 – Summary of Recommendations

- **Encourage and Enhance Employer Access to Information about WVDE Career Programs:** It is recommended that WVDE increase the amount and/or accessibility of information available to employers about specific career programs. Moreover, helping employers see how these programs can support hiring and training practices could significantly increase the use and application of this information in their business practices. Thus, it is recommended that WVDE not only enhance access to information, but also assist employers in identifying the multiple uses of this information, especially pertaining to hiring employees.

# Employer Requests for Industry-Education Connections

---

## *Establish Contact and Strengthen Connections with High-Value Employers*

When provided the opportunity to add comments that might assist WVDE in promoting workforce development, several employers used this space to voice requests for additional interaction with schools and educators. Some wanted to simply learn more about WVDE programs, while others wanted to help students connect with viable careers in their businesses. Many were concerned about specific skills, particularly soft skills, and wanted to contribute to efforts in preparing students for career readiness.

These comments are noteworthy both in the number received and in the intensity of the message being communicated. Rather than random comments focused on specialized needs, most were genuine requests sharing a common element – the desire to continue the conversation and build a deeper relationship with WVDE. Employers appear to be eager and ready to assist in workforce development efforts. Many are clearly committed, along with WVDE, to ensuring students are ready for the world of work with the necessary skills to access good jobs in their communities.

### *Recommendations*

There is a unique opportunity here for WVDE to capitalize on the wealth of information employers can offer in preparing students for careers. A primary purpose of education is to prepare students for employment success and local employers are a critical resource in accomplishing this goal. Information gained from employers can inform education practices and help ensure students are ready for work. When education is disconnected from employers, there is the potential for students to enter the workforce with outdated or mismatched skills. Establishing and maintaining contact with employers is critical to students' future success.

The first, and most critical, step in developing connections with employers is to identify whom to contact. Not all employers offer good jobs that pay enough to support students and their lifestyle goals. Thus, it will be important to focus on employers with high-value career opportunities. This can be directly accomplished through a review of regional labor market information (LMI) to determine which jobs are in high demand and offer high wages. As mentioned earlier, Pathway2Careers offers a simple and straightforward solution to understanding local labor markets and identifying high-value careers. Once these careers have been identified, efforts can be made to connect with employers within these career fields.

Given that students can benefit most from employer connections within their communities, it is recommended that the process of identifying high-value careers and connecting with employers occur at a local level. Individual school districts can use tools, such as the P2C labor market system (see recommendations for Focus Area 1), to explore high-value careers in their region and connect with local employers in these fields. Methods for making initial contact can include simple phone conversations, emails, and face-to-face meetings. A more efficient approach, however, may be to invite employers to attend regular meetings with school leaders where information can be freely exchanged. As developments progress, meetings may need to occur with employers on an individual basis to gain more direct information and establish work-based learning opportunities. Overall, the primary objective will be for schools to develop long-term relationships with local high-value employers that support the future success of both students and employers.

## Requests for Industry-Education Connections – Summary of Recommendations

- **Identify High-Value Employers:** The first, and most critical, step in developing employer connections is to identify whom to contact. Not all employers offer good jobs that pay enough to support students and their lifestyle goals. Labor market information should be used to determine current and future high-value careers that can offer ample employment opportunities and high wages. Once these careers have been identified, efforts can be made to connect with employers within these career fields.
- **Make Employer Connections at the Local Level:** Students will benefit most from employer connections in their local communities. It is suggested that individual school districts use labor market information to explore high-value careers in their regions and connect with local employers within these fields.
- **Establish Regular Group Meetings with Employers:** Methods for making initial contact can include simple phone conversations, emails, and face-to-face meetings. A more efficient approach, however, may be to invite employers to attend regular meetings with school leaders where information can be freely exchanged.
- **Meet with Individual Employers to Develop Partnerships:** As developments progress, meetings may need to occur with employers on an individual basis to gain more direct information and establish work-based learning opportunities.

# References

- Accenture Manufacturing Institute. (2014). *Out of inventory: Skills shortage threatens growth for US manufacturing*. Retrieved from <http://www.themanufacturinginstitute.org/Research/Skills-and-Training-Study/~media/70965D0C4A944329894C96E0316DF336.ashx>
- Adecco Group. (2013). *State of the economy and employment 2013*. Retrieved from <https://www.adeccousa.com/about-adecco-staffing/newsroom/press-releases/state-of-the-economy-and-employment-2013/>
- Advance CTE. (2013). *West Virginia: Simulated workplace*. Retrieved from <https://careertech.org/resource/west-virginia-simulated-workplace>
- Association of American Colleges and Universities. (2018). *Fulfilling the American dream : Liberal education and the future of work*. Retrieved from <https://www.aacu.org/sites/default/files/files/LEAP/2018EmployerResearchReport.pdf>
- Bloomberg Next. (2018). *Building tomorrow's talent: Collaboration can close emerging skills gap*. Retrieved from [https://www.bna.com/uploadedFiles/BNA\\_V2/Micro\\_Sites/2018/Future\\_of\\_Work/Workday-Bloomberg-Build-Tomorrow-Talent\\_FINAL.pdf](https://www.bna.com/uploadedFiles/BNA_V2/Micro_Sites/2018/Future_of_Work/Workday-Bloomberg-Build-Tomorrow-Talent_FINAL.pdf)
- Business Roundtable. (2017). *How CEOs are helping close America's skills gap*. Retrieved from [https://s3.amazonaws.com/brt.org/BRT-SkillsGap201711012017\(1\).pdf](https://s3.amazonaws.com/brt.org/BRT-SkillsGap201711012017(1).pdf)
- Carnevale, A., & Cheah, B. (2018). *Five rules of the college and career game*. Georgetown Center on Education and the Workforce. Retrieved from <https://1gyhoq479ufd3yna29x7ubjn-wpengine.netdna-ssl.com/wp-content/uploads/Fiverules.pdf>
- Carnevale, A., Fasules, M., Huie, S. B., & Troutman, D. (2017). *Major matters most: The economic value of bachelor's degrees from the University of Texas system*. Georgetown Center on Education and the Workforce. Retrieved from <https://1gyhoq479ufd3yna29x7ubjn-wpengine.netdna-ssl.com/wp-content/uploads/UT-System.pdf>
- Carnevale, A., Smith, N., & Strohl, J. (2010). *Help wanted: Projections of jobs and education requirements through 2018*. Georgetown Center on Education and the Workforce. Retrieved from <https://1gyhoq479ufd3yna29x7ubjn-wpengine.netdna-ssl.com/wp-content/uploads/2014/12/fullreport.pdf>
- Carnevale, A., Smith, N., & Strohl, J. (2013). *Recovery: Job growth and education requirements through 2020*. Georgetown Center on Education and the Workforce. Retrieved from [https://cew.georgetown.edu/wp-content/uploads/2014/11/Recovery2020.FR\\_Web\\_.pdf](https://cew.georgetown.edu/wp-content/uploads/2014/11/Recovery2020.FR_Web_.pdf)
- Carnevale, A., Strohl, J., Cheah, B., & Ridley, N. (2017). *Good jobs that pay without a BA*. Georgetown Center on Education and the Workforce. Retrieved from <https://goodjobsdata.org/wp-content/uploads/Good-Jobs-wo-BA.pdf>



- Carnevale, A., Strohl, J., Ridley, N., & Gulish, A. (2018). *Three educational pathways to good jobs*. Georgetown Center on Education and the Workforce. Retrieved from <https://1gyhoq479ufd3yna29x7ubjn-wpengine.netdna-ssl.com/wp-content/uploads/3ways-FR.pdf>
- Cohn, S. (2017). *Here's what the June unemployment rate is not telling you about job losses*. CNBC. Retrieved from <https://www.cnbc.com/2017/07/07/heres-what-the-unemployment-rate-is-not-telling-you-about-job-losses.html>
- Cooper, P. (2017, July 13). New York fed highlights underemployment among college graduates. *Forbes*. Retrieved from <https://www.forbes.com/sites/prestoncooper2/2017/07/13/new-york-fed-highlights-underemployment-among-college-graduates/#45d30bb740d8>
- Council of Economic Advisors. (2018). *Addressing America's reskilling challenge*. Retrieved from <https://www.whitehouse.gov/wp-content/uploads/2018/07/Addressing-Americas-Reskilling-Challenge.pdf>
- Crowe, M. (2019). *Unprepared and unaware: Upskilling the workforce for a decade of uncertainty*. Southern Regional Education Board. Retrieved from [https://www.sreb.org/sites/main/files/file-attachments/2019\\_adultattain\\_webversion.pdf](https://www.sreb.org/sites/main/files/file-attachments/2019_adultattain_webversion.pdf)
- Deegan, B. J., & Martin, N. (2018). *Demand driven education: Merging work & learning to develop the human skills that matter*. Pearson. Retrieved from [https://www.pearson.com/content/dam/one-dot-com/one-dot-com/global/Files/about-pearson/innovation/open-ideas/DDE\\_Pearson\\_Report\\_3.pdf](https://www.pearson.com/content/dam/one-dot-com/one-dot-com/global/Files/about-pearson/innovation/open-ideas/DDE_Pearson_Report_3.pdf)
- Dunkelberg, W. C., & Wade, H. (2010). *NFIB small business economic trends*. National Federation of Independent Business. Retrieved from <https://www.nfib.com/assets/SBET-Aug-2018.pdf>
- Frueh, S. (2017). *United States' skilled technical workforce is inadequate to compete in coming decades; Actions needed to improve education, training, and lifelong learning of workers*. The National Academies of Sciences, Engineering, and Medicine. Retrieved from <http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=23472>
- Gonzalez, G., Robson, S., Phillips, A., Hunter, G., & Ortiz, D. (2015). *Energy-sector workforce development in West Virginia*. RAND Corporation. Retrieved from [https://www.rand.org/content/dam/rand/pubs/research\\_reports/RR800/RR812/RAND\\_RR812.pdf](https://www.rand.org/content/dam/rand/pubs/research_reports/RR800/RR812/RAND_RR812.pdf)
- Handel, M. J. (2016). What do people do at work? A profile of U.S. jobs from the survey of workplace skills, technology, and management practices (STAMP). *Journal for Labour Market Research*, 49(2), 177–197. <https://doi.org/10.1007/s12651-016-0213-1>
- Hanover Research. (2014). *Best practices in soft skills assessment*. Retrieved from <https://www.gssaweb.org/wp-content/uploads/2015/04/Best-Practices-in-Soft-Skills-Assessment-1.pdf>
- John, D. D., Chen, Y., Navaee, S., & Gao, W. (2018). *Board 57: STEM education from the industry practitioners' perspective. Paper presented at 2018 ASEE Annual Conference & Exposition*. Salt Lake City, Utah. Retrieved from <https://peer.asee.org/30062>
- ManpowerGroup. (2018). *Solving the talent shortage*. Retrieved from <https://go.manpowergroup.com/talent-shortage-2018#thereport>



- Manyika, J., Lund, S., Chui, M., Bughin, J., Woetzel, J., Batra, P., ... Sanghvi, S. (2017). *Jobs lost, jobs gained: Workforce transitions in a time of automation*. McKinsey Global Institute. Retrieved from <https://www.mckinsey.com/mgi/overview/2017-in-review/automation-and-the-future-of-work/jobs-lost-jobs-gained-workforce-transitions-in-a-time-of-automation>
- Mason, H. (2017, November 12). Workforce skills gap evident in West Virginia. *Daily Mail WV*. Retrieved from [https://www.wvgazettemail.com/opinion/daily\\_mail\\_opinion/commentary/hallie-mason-workforce-skills-gap-evident-in-west-virginia-daily/article\\_e7d89e90-93a7-5c0d-954c-012c9b8fc2b6.html](https://www.wvgazettemail.com/opinion/daily_mail_opinion/commentary/hallie-mason-workforce-skills-gap-evident-in-west-virginia-daily/article_e7d89e90-93a7-5c0d-954c-012c9b8fc2b6.html)
- Memmot, M. (2011, June 15). 2 million “open jobs”? Yes, but U.S. has a skills mismatch. Retrieved from <https://www.npr.org/sections/thetwo-way/2011/06/15/137203549/two-million-open-jobs-yes-but-u-s-has-a-skills-mismatch>
- Muro, M., Maxim, R., & Whiton, J. (2019). *Automation and artificial intelligence: How machines are affecting people and places*. Metropolitan Policy Program at Brookings. Retrieved from [https://www.brookings.edu/wp-content/uploads/2019/01/2019.01\\_BrookingsMetro\\_Automation-AI\\_Report\\_Muro-Maxim-Whiton-FINAL-version.pdf](https://www.brookings.edu/wp-content/uploads/2019/01/2019.01_BrookingsMetro_Automation-AI_Report_Muro-Maxim-Whiton-FINAL-version.pdf)
- National Skills Coalition. (2015). *Middle skills jobs by state - West Virginia*. Retrieved from <https://www.nationalskillscoalition.org/resources/publications/2017-middle-skills-fact-sheets/file/WestVirginia-MiddleSkills.pdf>
- Northwest Evaluation Association. (2018). *Assessing soft skills: Are we preparing students for successful futures?* Retrieved from [https://www.nwea.org/content/uploads/2018/08/NWEA\\_Gallup-Report\\_August-2018.pdf](https://www.nwea.org/content/uploads/2018/08/NWEA_Gallup-Report_August-2018.pdf)
- Pace, F. (2017). *Skills gap cited as challenge for W. VA*. The Herald Dispatch. Retrieved from [https://www.herald-dispatch.com/news/skills-gap-cited-as-challenge-for-w-va/article\\_25aee8d5-499d-5f33-983a-dd5945e9cf52.html](https://www.herald-dispatch.com/news/skills-gap-cited-as-challenge-for-w-va/article_25aee8d5-499d-5f33-983a-dd5945e9cf52.html)
- Sauber, E. (2016, May 19). Charleston falls below 50,000 residents for first time since 1920. *Charleston Gazette-Mail*. Retrieved from [https://www.wvgazettemail.com/news/charleston-falls-below-residents-for-first-time-since/article\\_47c0515a-04b4-5851-9161-2fc5593cd9ec.html](https://www.wvgazettemail.com/news/charleston-falls-below-residents-for-first-time-since/article_47c0515a-04b4-5851-9161-2fc5593cd9ec.html)
- Sawchuk, S. (2018, September 25). How to make reading relevant: Bring job-specific texts into class. *Education Week*. Retrieved from <https://www.edweek.org/ew/articles/2018/09/26/how-to-make-reading-relevant-bring-job-specific.html>
- Shearer, C., & Shah, I. (2018). *Opportunity industries: Exploring the industries that concentrate good and promising jobs in metropolitan America*. Brookings Policy Program.
- Society for Human Resources Management. (2008). *Workforce readiness and the new essential skills*. Retrieved from [https://www.shrm.org/hr-today/trends-and-forecasting/labor-market-and-economic-data/Documents/08-0175WV\\_FINAL.pdf](https://www.shrm.org/hr-today/trends-and-forecasting/labor-market-and-economic-data/Documents/08-0175WV_FINAL.pdf)
- Templeton, G. (2018). *Survival in tomorrow's business world means closing the skills gap*. Forbes. Retrieved from <https://www.forbes.com/sites/adp/2018/03/16/survival-in-tomorrows-business-world-means-closing-the-skills-gap/#8be1a047a6b7>
- Udemy. (2018). *2018 skills gap report*. Retrieved from [https://research.udemy.com/wp-content/uploads/2018/11/FINAL-Udemy\\_2018\\_Skills\\_Gap\\_Report\\_Complete-1.pdf](https://research.udemy.com/wp-content/uploads/2018/11/FINAL-Udemy_2018_Skills_Gap_Report_Complete-1.pdf)

- US Chamber of Commerce Foundation. (2017). *Bridging the soft skills gap*. Retrieved from [https://www.uschamberfoundation.org/sites/default/files/Closing the Soft Skills Gap.pdf](https://www.uschamberfoundation.org/sites/default/files/Closing%20the%20Soft%20Skills%20Gap.pdf)
- Weise, M. R., Hanson, A. R., Sentz, R., & Saleh, Y. (2018). *Human+ skills for the future of work*. Strada Institute for the Future of Work. Retrieved from [https://www.economicmodeling.com/wp-content/uploads/2018/11/Robot-Ready\\_ExSumSingles\\_FA1.pdf](https://www.economicmodeling.com/wp-content/uploads/2018/11/Robot-Ready_ExSumSingles_FA1.pdf)
- Weissmann, J. (2012, April 23). 53% of recent college grads are jobless or underemployed—how? *The Atlantic*. Retrieved from <https://www.theatlantic.com/business/archive/2012/04/53-of-recent-college-grads-are-jobless-or-underemployed-how/256237/>
- West Virginia Department of Education. (2016). *WIOA state plan for the state of West Virginia*. Retrieved from <https://wvde.us/wp-content/uploads/2017/11/WIOA-State-Plan-for-West-Virginia-9.28.16.pdf>
- World Economic Forum. (2018). *The future of jobs report 2018*. Retrieved from [http://www3.weforum.org/docs/WEF\\_Future\\_of\\_Jobs\\_2018.pdf](http://www3.weforum.org/docs/WEF_Future_of_Jobs_2018.pdf)

# Appendix

## Sample Survey Questions

### *Sample Demographic and Employer Background Questions*

How long have you worked at your business/company?	
Less than 1 year	<input type="radio"/>
1-3 years	<input type="radio"/>
4-6 years	<input type="radio"/>
7-9 years	<input type="radio"/>
10+ years	<input type="radio"/>

Are you typically involved in the hiring of new employees?	
Yes	<input type="radio"/>
No	<input type="radio"/>

What is the average age of most new employees that you hire into your business/company?	
18-25 years	<input type="radio"/>
26-35 years	<input type="radio"/>
36-45 years	<input type="radio"/>
46-55 years	<input type="radio"/>
56-65 years	<input type="radio"/>
66-75 years	<input type="radio"/>
76 or more	<input type="radio"/>

**When applications come in, does your business/company struggle to find qualified employees for most open positions?**

Yes	<input type="radio"/>
No	<input type="radio"/>

**When your business/company struggles to fill open positions, what are the primary reasons for this?  
CHOOSE ALL THAT APPLY**

Cannot find individuals with the necessary skills	<input type="radio"/>
Individuals lack sufficient training	<input type="radio"/>
Individuals have limited work experience	<input type="radio"/>
Individuals do not have needed degrees or certificates	<input type="radio"/>
Individuals are overqualified	<input type="radio"/>
Competition from other employers makes it difficult to attract qualified individuals	<input type="radio"/>
Interest in the type of job is low	<input type="radio"/>
People do not want to live in the local area	<input type="radio"/>
Salary or hourly rate is not high enough to attract qualified individuals	<input type="radio"/>
Individuals do not meet legal requirements and/or cannot pass drug screening	<input type="radio"/>
Other (please specify)	<input type="radio"/>

**Which of the following recruitment practices does your business/company primarily rely on to find employees for most open positions? CHOOSE ALL THAT APPLY**

Online Job Advertisements / Postings	<input type="radio"/>
Referrals	<input type="radio"/>
Printed Signs (e.g., "Help Wanted")	<input type="radio"/>
Offers to existing employees	<input type="radio"/>
Employment agencies	<input type="radio"/>
Print or newspaper ads	<input type="radio"/>
Other (please specify)	<input type="radio"/>

*Sample Questions for Focus Area 1: Skill Needs and Availability*

How many jobs in your business/company require a <b>basic</b> mastery of the following reading, writing, and language skills to successfully perform job-related tasks?	A Lot	A Fair Number	Some	Very Few
Reading and understanding at a reasonable speed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recalling and applying information that is read	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Assessing credibility and accuracy of written content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identifying key facts and main points from written content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Writing about a topic using facts and supporting details	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Production of clear and coherent writing that is appropriate for specific audiences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Editing and revising self-written content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generation of original content that is not plagiarized	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Correct spelling and grammar in writing and speaking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Determining meaning of unknown words from language cues, context, and dictionaries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

When hiring new employees, how many applicants has your business/company encountered who would be able to show a <b>basic</b> mastery of the following reading, writing, and language skills?	A Lot	A Fair Number	Some	Very Few
Reading and understanding at a reasonable speed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recalling and applying information that is read	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Assessing credibility and accuracy of written content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identifying key facts and main points from written content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Writing about a topic using facts and supporting details	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Production of clear and coherent writing that is appropriate for specific audiences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Editing and revising self-written content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generation of original content that is not plagiarized	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Correct spelling and grammar in writing and speaking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Determining meaning of unknown words from language cues, context, and dictionaries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Sample Questions for Focus Area 2: Preference for Degrees or Skills*

Degrees or certificates typically indicate that individuals have...	Very True	Pretty True	Not Very True	Not at all True
Basic job-related skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A higher level of professionalism	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Work attitudes that support job performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strategies for learning new skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Work behaviors that support job performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intellectual abilities to handle job demands	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Basic math and reading skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<b>What information does your business/company use to determine if someone has the necessary job-related skills? Rank these in order of importance with 1 being the most useful and 6 being the least useful.</b>				
Degrees/certificates				
Micro-credentials / digital badges				
Reports of past job performance				
Trial periods to observe on-the-job performance				
Job experience in a similar field of work				
A recommendation from a reliable contact				

<b>For <u>most</u> jobs in your business/company, which type of applicant would be viewed as most prepared for successful job performance?</b>	
Someone who has recently earned a degree or certificate from an academic institution	<input type="radio"/>
Someone who does <u>not</u> have a degree or certificate, but has strong job-related skills	<input type="radio"/>
<b>Please explain your response to the question above.</b>	
<b>In what situations might you choose the other type of applicant? Why?</b>	

When hiring new employees, those with a <u>high school diploma</u> typically demonstrate a <u>basic</u> mastery of...	Very True	Pretty True	Not Very True	Not at all True
Mathematics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reading, Writing, and Language	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use of Technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Understanding and Producing Digital Content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Soft Skills (professionalism, teamwork, communication, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

For most jobs in your business/company, what is believed to be the <u>strongest</u> contributing factor to successful job performance?				
Earned degrees and/or certificates				<input type="radio"/>
Mastered industry-specific skills				<input type="radio"/>

### Sample Question for Focus Area 3: Awareness of WVDE Career Programs

Our business/company is aware of the following resources and programs provided by the West Virginia Department of Education.	Very True	Pretty True	Not Very True	Not at all True
<b>Simulated Workplace</b> Permits students the opportunity to take ownership of their individual performance as it impacts the overall success of their education, while thriving in an authentic workplace culture. Simulated Workplace also encourages local business and industry experts to join onsite review teams to assist schools in meeting their workforce needs and expectations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Advanced Career Education (ACE)</b> Provides high school graduates with the opportunity to enter an advanced technical program of study for targeted industry sectors. This “13th year” will allow students to achieve advanced credentials, certifications, and licenses while earning potential college credits towards an associates of applied science degree.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Career and Technical Education (CTE)</b> An educational environment that integrates core academics with real-world relevance. CTE is transforming expectations and making a difference for students, for business and industry, for West Virginia and for the global economy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<b>Industry Credentials</b> CTE programs give students the ability to gain industry recognized credentials while still in high school. Student certifications are available in all CTE cluster areas. Students who have attained a credential have a documented skill set and are more marketable in the employment arena and better prepared to succeed in a post-secondary environment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Co-Curricular Student Organizations (CTSOs) – DECA, FBLA, Skills USA, FCCLA, etc.</b> Organizations that extend teaching and learning through innovative programs, business and community partnerships and leadership experiences at the school, state and national levels. CTOS are a powerful avenue for helping our nation address key challenges such as workforce development, student achievement, economic vitality and global competitiveness.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Adult Education – Workplace Education, Career Pathways</b> Workplace Education provides customized basic skills instruction for incumbent workers and/or potential workers. Training can be in applied basic skills (such as workplace English as a second language, pre-statistical process math, report writing) or in specified workplace essential skills (such as problem solving, communication, goal setting) depending on the expressed needs of the company/business. Career Pathways consist of education/training programs and support services that enable individuals to secure employment within a specific industry or occupational sector.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Employer Specific Training</b> Anytime a West Virginia employer needs specific training that our CTE centers can accommodate, our office will work with that employer and develop a specific program customized to the needs of the individual employer that covers the desired training objectives.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### *Question for General Comments and Suggestions*

Please use the space below to provide additional comments that you believe could assist the West Virginia Department of Education in promoting workforce development.