



Your bridge2careers

for the Energy Industry

An Analysis of the Skills, Knowledge, and Abilities
Needed for a Comprehensive and Well-Qualified Talent Pipeline

ENERGY ROUNDTABLE FUNDERS

Many thanks to the forward-looking funders who made this report possible!



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Executive Summary

Doña Ana County is perfectly positioned to play a leading role in New Mexico's coming transition to renewable and clean energy. The existing assets and private-sector leadership in traditional electric and natural gas, as well as wind and solar energy generation, already provide more than 1,000 jobs and careers in the region that are at or exceeding the county's median income and provide family-sustaining benefits.

Growth in primarily technical jobs over the coming decades requires building greater awareness of these opportunities today, as well as rethinking the education pathways in high school, college, and university that prepare tomorrow workforce.

The high value placed on real-world experience over credentials demonstrates that this industry isn't fully taught in a classroom. It is lived in the field and on the job. Restructuring career pathways and degree programs to include these experiences creates a win-win for the employer and the prospective or future job seeker.

Based on information provided by four employers in this industry, several challenges have surfaced that require further exploration and innovation to address:

- Limited number of well-qualified candidates available in the workforce now
- Uniform absence of a core set of specific skills needed by the industry
- The value of experience over degrees
- The lack of perceived value or effectiveness of the educational programs in the talent development pipeline
- Competition from other industries

To resolve these challenges, closer collaboration between education, Workforce Connections, and employers should focus on four key areas:

- Building direct relationships between Career and Technical Education programs/instructors and the employers
- Expansion of apprenticeship and on-the-job opportunities and funding for employers through the Workforce Connections system, including more engagement with the youth provider
- Identification of highly-skilled employees from other industries who have been displaced by COVID who have transferrable skills, including Oil & Gas, Construction, and Information Technology fields
- Workforce Connections building a stronger relationship with employers to fund training for incumbent employees

The following report outlines in specific detail how to holistically build out a local workforce in support of current Energy Industry employers.

Building the “Bridge” from Education to Opportunity in Doña Ana County’s Energy Industry

INTRODUCTION

New Mexico is a state in transition in one of its major industry sectors: energy. Driven historically by the rich assets of the southeastern area’s portion of the Permian Basin, Oil & Gas revenues have been, at times the savior, and at other times, the villain, of the wellbeing of the New Mexico state budget.

Doña Ana County’s contribution to the Energy Industry has always been more reliant on other sources: traditional electric and natural gas, along with the growing renewable sectors of wind and solar. Understanding the workforce needs of this sector holistically will be critical to the employability of workers and the economic expansion of this industry here, especially as the New Mexico Energy Transition Act is implemented between now and 2045.

With that in mind, The Bridge of Southern New Mexico convened employers (diverse in generation source and the size of their workforce) to form an industry-specific roundtable to gain a broader understanding of the workforce needs of the Energy sector here.

Leveraging elements of the U.S. Chamber of Commerce’s Talent Pipeline Management approach and the license for a survey tool shared with New Mexico State University, The Bridge conducted a survey of the Roundtable members and then distilled the data to create actionable intelligence to inform the talent development pipeline.

Four companies helped us understand their workforce needs and challenges, so that we may work together to maximize opportunities for employment of New Mexico workers.

Participating employers included:

- David Hawkins and Michelle Fenton, El Paso Electric (headquartered in El Paso, but with local staff)
- Tommy Trujillo, New Mexico Gas Company (headquartered in Albuquerque, but with local staff)
- Derrick Perkins, Macho Springs Wind Farm (located near Deming)
- Corey Asbill, Organ Mountain Solar

What follows is a summary of the findings. Key challenges have surfaced that require further exploration and innovation to address:

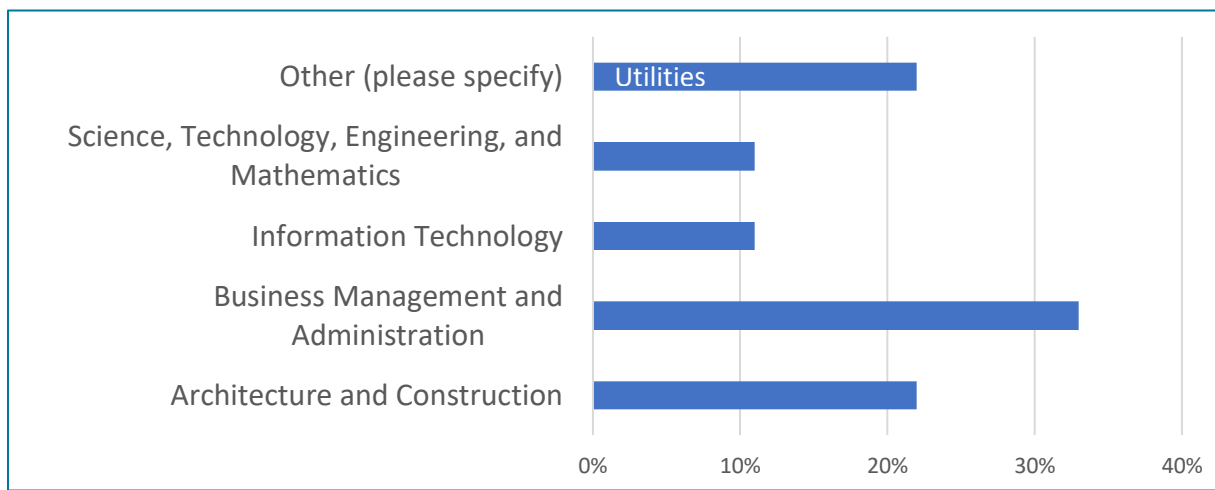
- Limited number of well-qualified candidates available in the workforce now
- Uniform absence of a core set of specific skills needed by the industry
- The value of experience over degrees

- The lack of perceived value or effectiveness of the educational programs in the talent development pipeline
- Competition from other industries

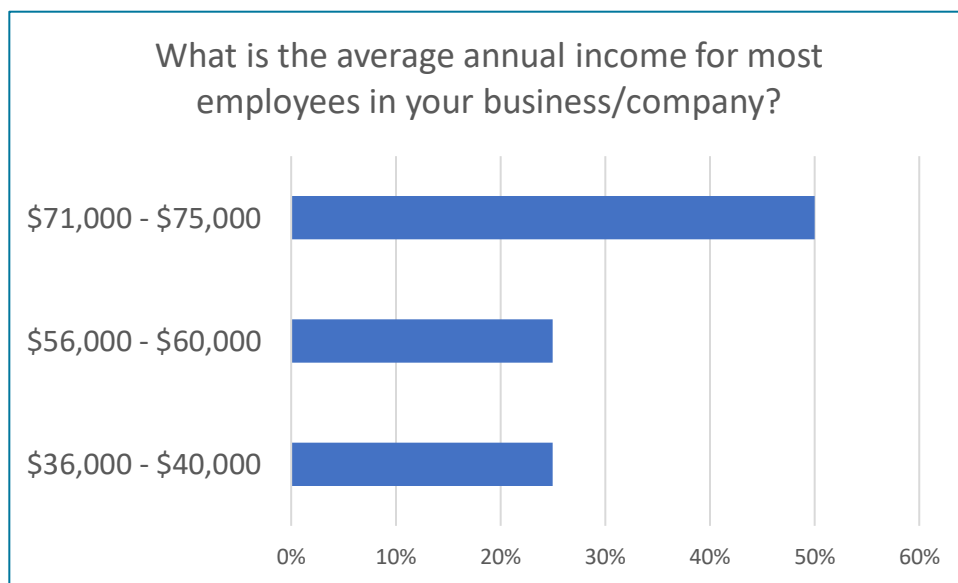
ABOUT THE EMPLOYERS AND THEIR JOBS

Roundtable members, as a group, reported hiring 1,827 total employees regionally, which includes 869 in El Paso, and hires more than 120 per year. All new employees range from 26 to 45 years of age on average.

The workforce of the Energy sector comprises a broad set of specialties:



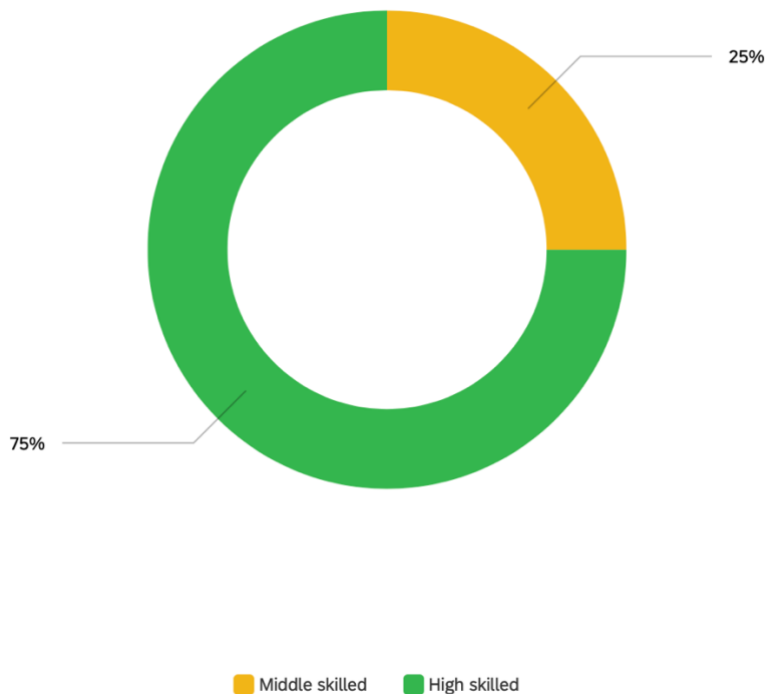
Pay scales in this industry offer wages at and above the county's median wage of \$39,164.



The companies offer a varying level of family-supporting benefits depending upon their size. Identified benefits included:

- Healthcare
- Life Insurance
- Retirement/401K
- Vision Care
- Dental Care
- Telework
- Paid Family Leave
- Additional Training
- Flex Spending
- Long-term Care Insurance
- Tuition Reimbursement

The majority of employee turnover takes place with El Paso Electric, which experiences an annual turnover of 100 people, including 80% to retirement. This creates enormous pressure on the utility company to replace highly-skilled veterans of their workforce. Roundtable members indicated the skill levels hardest to replace below.



Hawkins and Fenton specifically mentioned jobs for:

- Protection Relay Schemes for Substations
- Lineworkers (for which they compete with the Oil & Gas industry)
- Environmental Science

Other members indicated qualified work-site managers and program managers were hard to find.

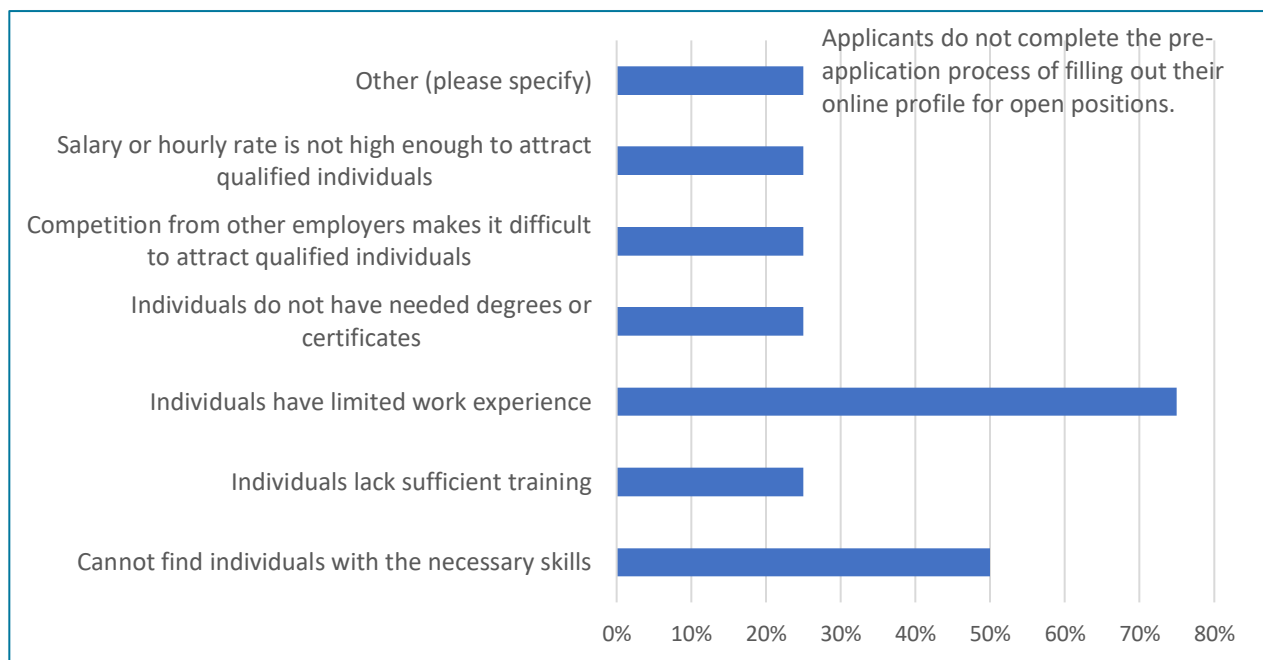
Several of the employers said they are able to fill higher-skilled jobs by promoting existing employees. Trujillo said, “Our employees start at the entry level and move up through the organization to create a pipeline of talent.” Asbill said, “We’ve never publicized a job. We started with five and now we have 13, all of which have come from what was Positive Solar (the solar company that made the decision to centralize all of its work in Albuquerque) and other local solar providers.”

Perkins said for his jobs dealing with wind turbines starting out with new employees can be difficult because, “50% of them are afraid of heights.”

The hardest jobs to fill included:

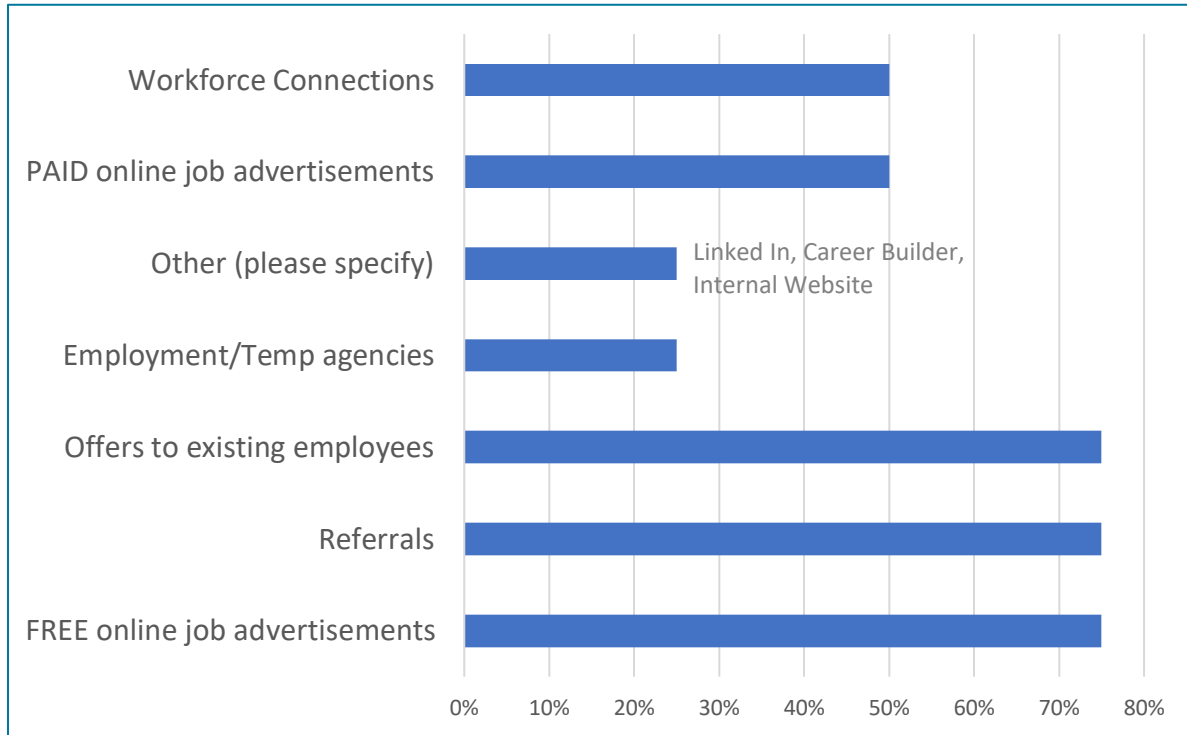
- Wind Technicians (a lot of jobs)
- Technical Sales Advisors (some jobs)
- And a few jobs for:
 - Lead Wind Technician
 - Site Manager
 - Measurement
 - Legal and Rate Designers to construct rate cases
 - Right of Way/GIS
 - IT Integration Lead
 - Project Manager
 - Operations Manager
 - Service Technicians

The reasons jobs are hard to fill include:



Asbill said there are limited entry level positions, so the greater likelihood is finding someone with the skills from competing companies. Trujillo said competition from other employers does cause them to lose employees. He specifically mentioned the labs in northern New Mexico and the Oil & Gas Industry.

To find new employees, Roundtable member use a variety of methods:



Other vehicles for promoting job opportunities listed by the group included:

- Indeed
- Las Cruces/Luna County/Deming Chambers of Commerce

THE SKILLS, KNOWLEDGE, AND ABILITIES NEEDED FOR SUCCESS

Using the responses of our Roundtable members, following are a set of non-negotiable skills employers need from their incoming talent.

IDEAL CANDIDATE FOR ENERGY INDUSTRY

Based on 75%-100% of employers' responses, there is a comprehensive picture of what New Mexico's True Talent needs to know, and be able to demonstrate, in order to enter the Energy Industry.

Math Skills:

- Adding and subtracting
- Multiplying and dividing
- Using basic algebra
- Solving real-world math problems
- Taking and interpreting measurements
- Reading graphs and charts with numerical information
- Calculating and using basic statistics
- Interpreting negative numbers
- Using fractions, decimals, and percentages

Reading, Writing, and Language:

- Determining the meaning of unknown words using a dictionary or language cues
- Correct spelling and grammar in writing and speaking
- Generation of original content that is not plagiarized
- Editing self-written content
- Productivity of clear writing
- Writing about a topic using supporting facts
- Identifying main points from written content
- Assessing credibility of written content
- Applying information that is read
- Reading at a reasonable speed

Employability Skills:

- Self-management
- Interpersonal skills
- Initiative
- Teamwork
- Professionalism
- Enthusiasm and Attitude
- Communication
- Problem Solving and Critical Thinking

Technology Skills:

- Using computers and computer programs
- Using mobile devices
- Entering data
- Writing and responding to emails
- Using word processing programs (MS Word)
- Using spreadsheet programs (Excel)
- Adapting to and learning new technology

Digital Literacy:

- Using mobile apps for task management
- Using technology to collaborate with others
- Using effective search strategies to locate information
- Understanding online risks
- Finding information to resolve technology problems
- Gathering information from digital sources and sharing it with others
- Examining computer outputs for accuracy and usefulness
- Using digital resources to learn new skills
- Accessing information to troubleshoot problems with technology
- Evaluating the credibility of digital sources



In evaluating the skill levels of candidates, Roundtable members were given the choice to indicate required skills and then rate how many prospective candidates seem to be equipped with those skills: most candidates, some candidates, or no candidates.

In evaluating each individual skill, none of the employers chose “most” to describe the skill level of candidates, but indicated “some” fairly consistently, including in areas where candidates’ skills exceeded employers’ requirements. Most alarming were the required skills where Roundtable members indicated they saw “no” candidates with these skills:

- Calculating or using basic statistics
- Understanding online security risks
- Using mobile apps for task management
- Finding information to resolve technology problems
- Using technology to collaborate with others (online team discussion tools)
- Using effective search strategies to locate information
- Gathering information from digital sources and sharing it with others
- Examining computer outputs for accuracy and usefulness
- Using digital resources to learn new skills
- Accessing information to troubleshoot problems with technology
- Evaluating the credibility of digital sources

This gives our educators and Workforce Connections staff valuable information for focusing even more intently on what skills are currently missing in talent development efforts and must be integrated into courses and training programs.

A full accounting of skill requirements and gaps can be found in the Appendix of this report.

Roundtable members also provided overarching comments about skills needed in their workforce:

“Many applicants lack ‘reasoning skills’ along with understanding that they will be required to take the company paid training throughout the year.”

“Our industry requires a lot of reading and report writing. Many who are hired just do not keep up with the reading requirement of the career. Manufacturers of equipment update their logic and software components six to seven times a year and reconfigure their major computer software schemes.”

“Some of our technicians are a ‘one-man show.’ They are assigned to one vehicle and will have jobs through the territory. Problem-solving skills are required daily, along with being able to manage the issues that occur frequently throughout your day.”

“Understanding 'programmable logic' in order to interface with our main component platforms.”

Energy Roundtable member indicated numerous computer languages their industry relies on:

- SQL
- Java
- Java-Script
- C#
- C++,
- Python
- Ruby
- Cobol
- .Net
- Visual Basic

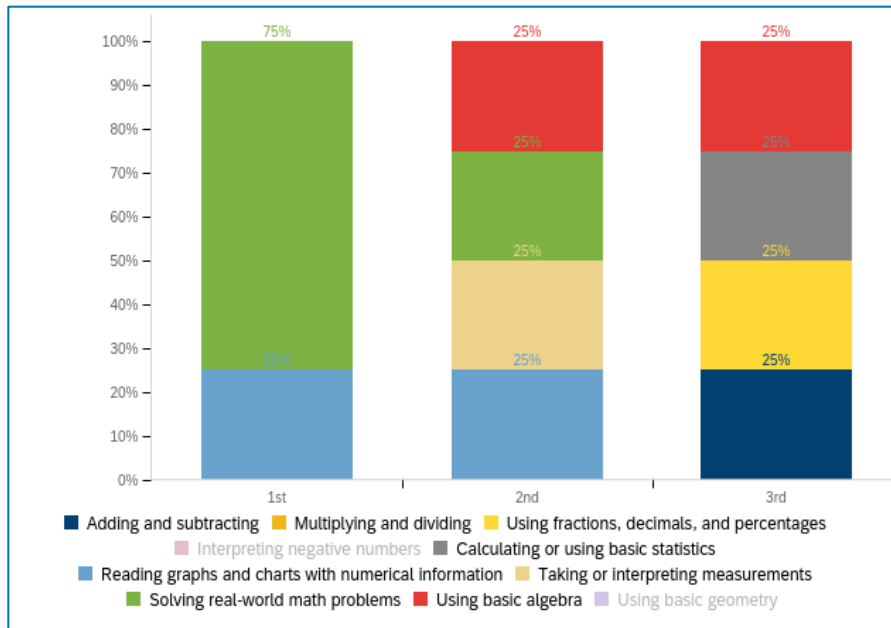
Use of other technology skills included:

- SAP Time Management, Inventory Control and Consumption Reporting Tools
- Supervisory Control and Data Acquisition (SCADA)
- MS Word (for report writing)
- Business needs analysis
- Developing procedure manuals
- Process breakdowns

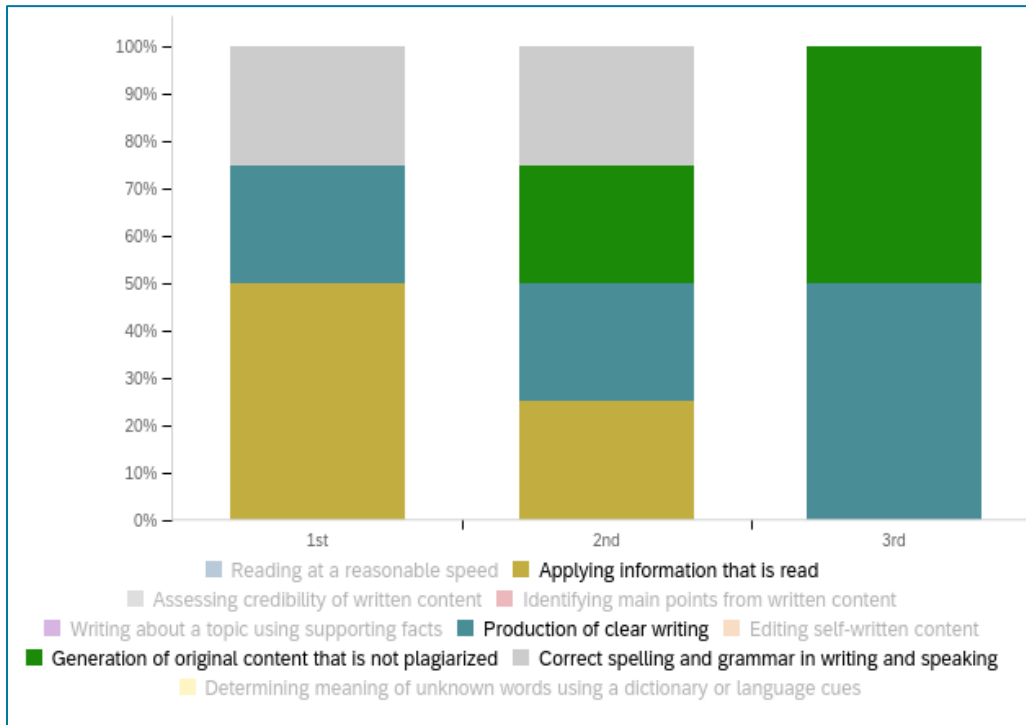
The industry also broadly uses MS Excel to do everything from customer management to creating charts to track trends and providing reports to investment companies.

In each of the five skill categories, Roundtable members reported which skills were most important.

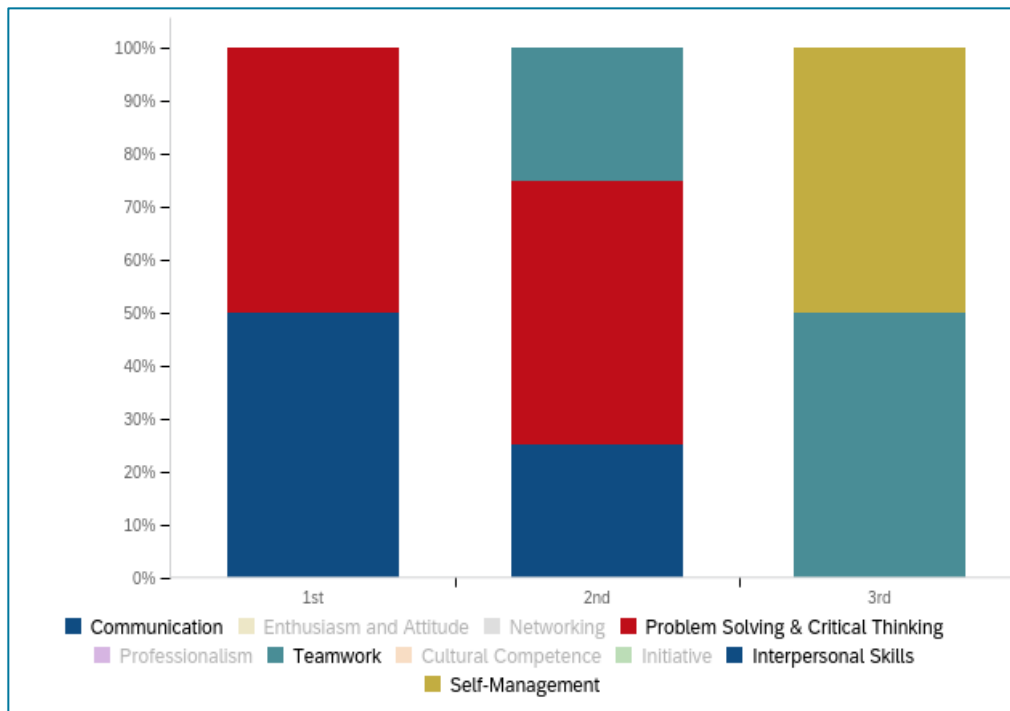
Math Skills



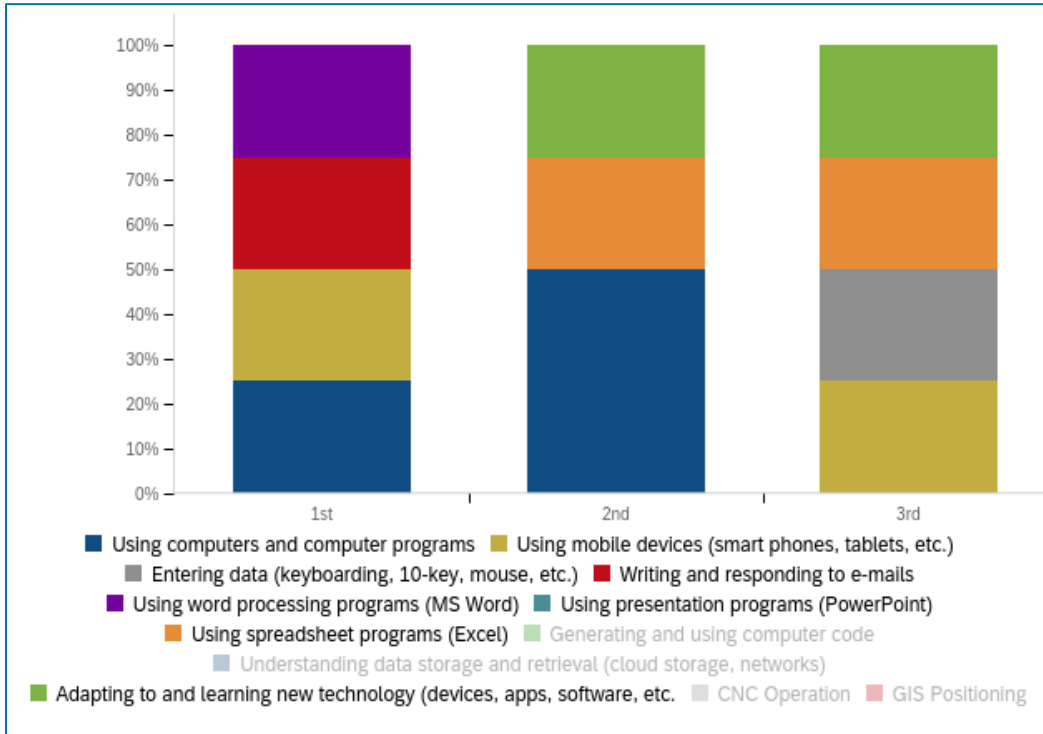
Reading, Writing, and Language Skills



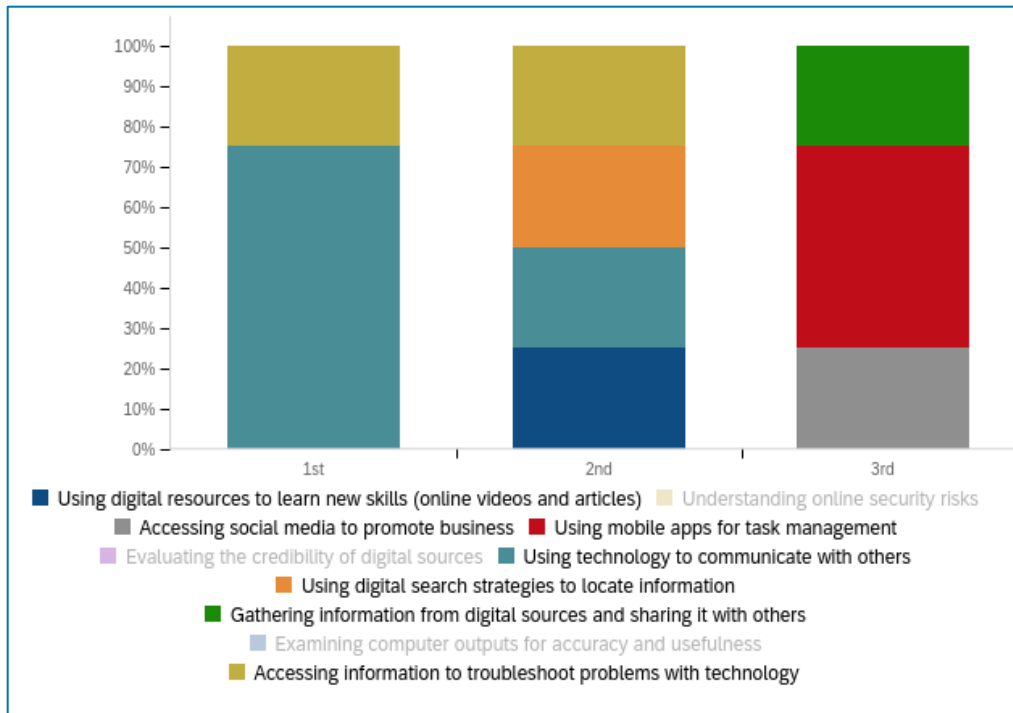
Employability or “Soft” Skills



Technology Skills



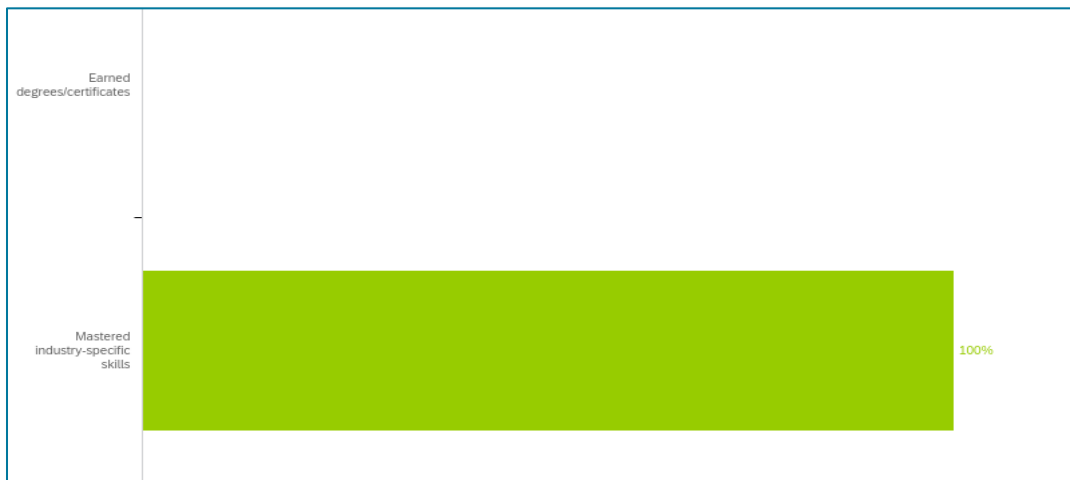
Digital Literacy Skills



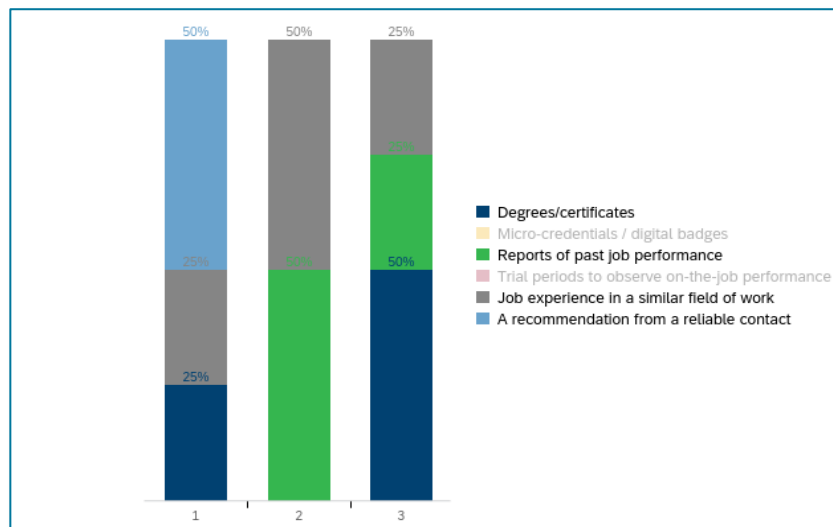
A deeper dive into our county’s technology training programs would bring enormous benefit to this industry for students who may be thinking about careers in technology-related fields but are unaware of the high value of those skills to this growing industry. Additionally, our education pipeline should evaluate how to integrate the skills indicated in the gap areas into their course offerings at both the high school and college level. Engagement with all teachers inside and outside of Career and Technical Education can produce a growing wave of well-qualified talent.

DEGREES, SKILLS, AND EXPERIENCE

Fully 100% of the Roundtable members view mastery of industry-specific skills as the greatest contributing factor to future job success.



Ranking the top three indicators of potential successful job performance, they spoke very clearly on the what they rely upon:



Evaluating the balance between degrees and experience, Roundtable members said:

“An individual who 'mastered industry specific skills' has a real understanding of what it takes to succeed in our industry. When interviewing for a position, the candidate can share what they would do in specific circumstances. Admitting what you do not know is also a very respected skill set in our industry.”

“Those we hire have the required credentials, after they are hired, we are able to train them, which allows for mastery of skills.”

“Education does not always translate to success in a role.”

“We can train on skills and knowledge required for most of the jobs in our company.”

“It seems more important to understand the specific technology than to have certificates or specific degrees.”

“It depends on the job and the person and the fit between the two.”

As Roundtable members think about their future workforce needs, the importance of degrees may likely rise.

“Understanding and utilizing 'big data sets', more emphasis on problem solving skills & understanding exposure to liability with regard to safety.”

“Understanding of new energy initiatives”

“Communication and technology-use skills”

That said, all of the Roundtable members did indicate degrees and credentials that are most valuable to them. The most requested bachelor degrees included:

- Science (electrical)
- Engineering
- Computer Science (programmable logic)
- Business Administration
- Accountants
- Marketing Advertising
- Economics
- Finance
- Technical Sales

The most requested associate degrees included:

- Science (electrical)
- Technical Sales
- Computer Science (programmable logic)
- Business Administration
- Liberal Arts
- System and Operations Management

The most highly valued trade and skill certifications included:

- Wind technician
- Lineworker
- Journeyman Gas Fitter License
- Electrician
- High Voltage (345 kV)
- Welding
- Computer Science (programmable logic)
- Professional Certificates (like IT and Human Resources and others)
- Technical Sales
- Administrative Assistant

However, there are also job opportunities for those without degrees, but have a high school diploma or GED:

- Wind technician
- Lineworker Apprenticeship
- Crewman
- Entry Level System Installer
- Business Coordinator (Administrative Aide)
- Clerk
- Service Tech
- Technical Sales
- Operations Center Coordinator
- Customer Service

Just a few jobs are open to those with no educational requirement:

- Entry Level System Installer
- Laborer
- Janitorial
- Front Desk

Due to the importance of experience to employers, three of the five do offer work-based learning opportunities, including:

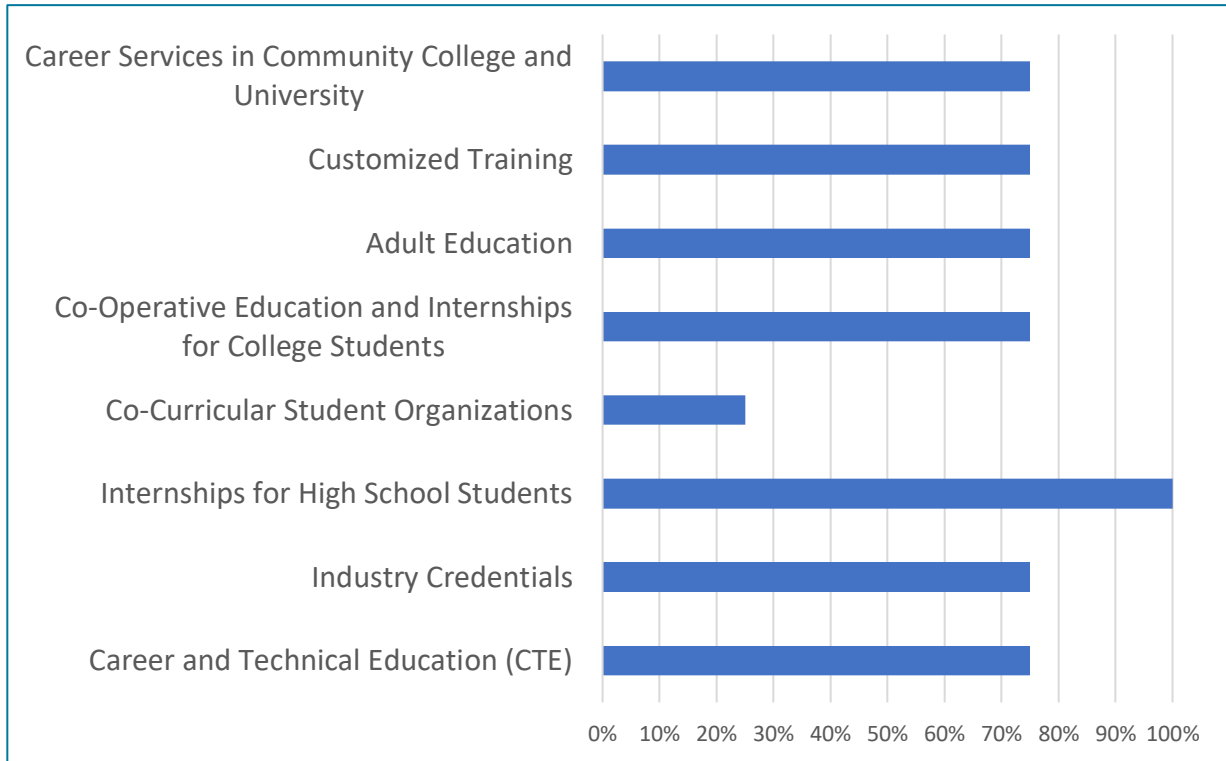
- Job shadowing
- Internships (one specific to engineering)
- Apprenticeships
- Career Coaching

El Paso Electric, in fact, has partnered with DACC on a training program specific to lineworkers. The need to fill these jobs is so great, the company hires virtually all graduates from the program.

With so many of these jobs being technical and aligned to a growing industry target, this is a key support role that the Workforce Connections staff could play to connect their youth and adult clients to work-based learning opportunities in this industry. The potential value of apprenticeship programs in this industry could also be a transforming opportunity for them to pass on the institutional knowledge of high skilled and soon-to-retire workers to a younger workforce.

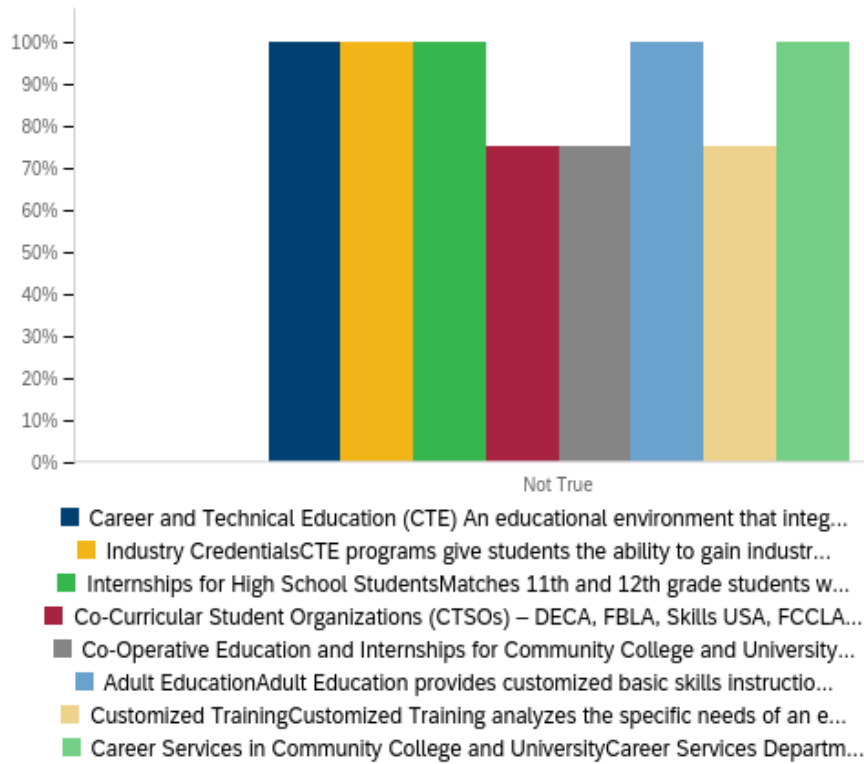
AWARENESS OF EDUCATION AND WORKFORCE PROGRAMS FOR THE INDUSTRY

Interestingly, while the majority of these employers are aware of the education partners who are part of their talent pipeline...



...there doesn't seem to be awareness or understanding of the value of these programs to the preparation of talent in the Energy Industry.

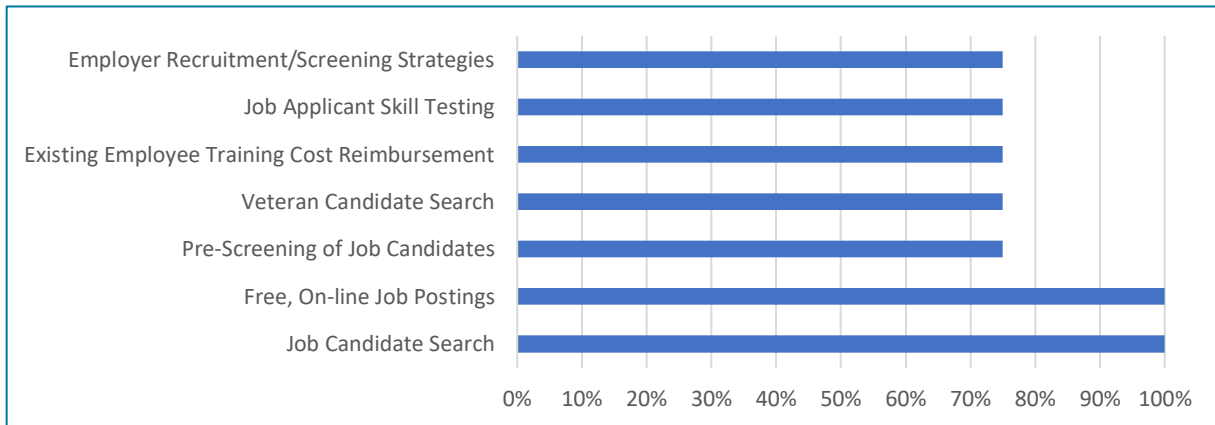
Our business/company believes the following resources and programs available in our local K-12 and post-secondary educational institutions are beneficial.



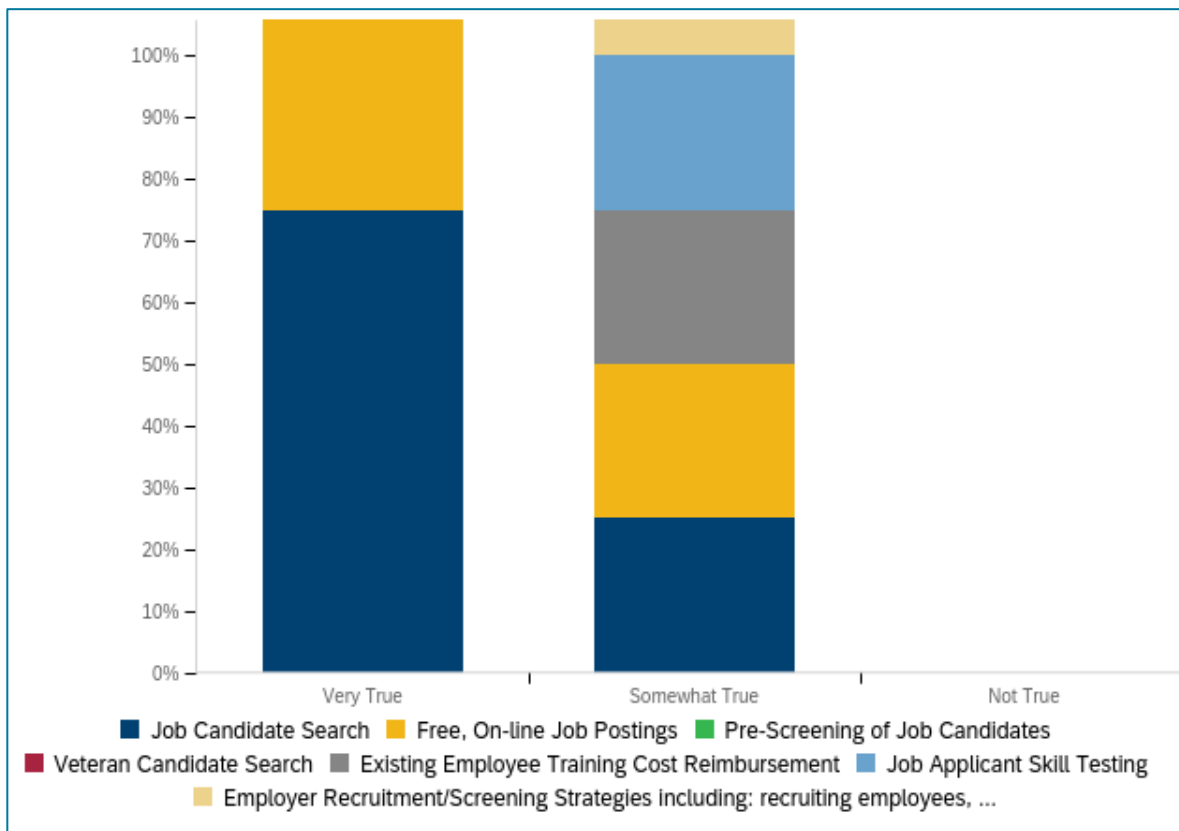
One Roundtable member suggested:

“Conduct frequent survey of our needs, develop programs in the gas utility arena or welding, revisit vocational programs in high schools/colleges.”

This industry also has a fairly strong awareness of the programs of Workforce Connections.



Unlike the educational programs, Roundtable members did see value in five of the services offered to employers.



El Paso Electric posts their jobs through other on-line searches, but the Workforce Connections system picks up those postings, due to the “spidering” capability of the system to collect job postings from multiple sources.

Roundtable members had some very specific advice for how this system could build stronger partnerships with them to open new opportunities to the job seekers they (Workforce Connections) work with.

“It would be more useful within our industry if the workforce development partners would assist each potential candidate with ‘completing their online profile’ and uploading degrees, certificates, and licensing to the prospective employer’s web portal.”

KEY OPPORTUNITIES FOR PARTNERSHIP AND INNOVATION

By and large, the Energy Industry is driven by a technically-skilled workforce. The high value placed on real-world experience over credentials demonstrates that this industry isn't fully taught in a classroom. It is lived in the field and on the job.

So, preparation of a strong pipeline of high-quality talent means an intentional intersection of work-based learning alongside classroom instruction. Restructuring career pathways and degree programs to include these experiences creates a win-win for the employer and the prospective or future job seeker.

Key areas for collaboration of talent development between education, Workforce Connections, and employers should focus on four key areas:

- Building direct relationships between Career and Technical Education programs/instructors and the employers
- Expansion of apprenticeship and on-the-job opportunities and funding for employers through the Workforce Connections system, including more engagement with the youth provider
- Identification of highly-skilled employees from other industries who have been displaced by COVID who have transferrable skills, including Oil & Gas, Construction, and Information Technology fields.
- Workforce Connections building a stronger relationship with employers to fund training for incumbent employees

The growth of the Energy Industry and expansion of renewable energy providers, including El Paso Electric, demands rethinking and reimagining talent development pathways. Focusing on these four key areas will render immediate, as well as long-term, results in connecting worker supply with employer demand.

Career and Technical Education

There is a clear disconnect between current CTE programs and the Energy Industry. We can capitalize on investments being made in Information Technology and Construction pathways, and even the technological and mechanical courses in Agriculture pathways, to expose students to the careers available in Energy. Career awareness starting in middle school with intentional pathways into high school, community college, and university will generate a much broader supply of workforce talent, as well as opening opportunities for research and commercialization of innovation to support the state's transition to renewable sources.

Students in high school and college would significantly benefit from co-ops, internships, and apprenticeships during the course of their education. El Paso Electric offers numerous internship opportunities for students, including the Grid Internship, Summer College Internship, and Summer High School Internship programs. Expansion of work-based learning opportunities should include not just private sector employers, but also working with our local governmental

utility departments, including the City of Las Cruces' Career Coordinator, to dramatically expand student's exposure to, and experience in, the Energy Industry.

The Arrowhead Center's Innoventure program recently focused their young entrepreneur training program on student inventions and applications of renewable energy. Integrating this hands-on, work-based learning into CTE pathways will expand student's career awareness of this industry and bring their innovative thinking into the industry later.

Additionally, The Bridge will work with employers in this industry to identify at least one opportunity for teacher externships in Summer 2021 to bring greater awareness of opportunities to teachers and instructors in the talent development pipeline.

At a high level, NMSU is currently leading an effort to support expanding the electrification of New Mexico. Its work will lead to even more careers with new technologies than even these four Roundtable participants represent. Preparing young workers today with what we do know we need will enable them to be at the forefront of the technological disruptions and transformations that are yet to come.

Apprenticeships

The high value experience plays in this industry is an ideal ground upon which to massively expand apprenticeship and on-the-job training opportunities for customers in the Workforce Connections system. Inviting the region's apprenticeship coordinator into the discussion with employers can identify which jobs would be ideal for apprenticeships and provide participating employers with financial incentives to bring in student workers.

The Lineworker program at DACC is the ideal model for replication, especially for Wind Technicians, Solar Installers, Electricians, and Welders. Identifying a few other aligned career pathways and integrating similar work experiences into their training, would yield the same employability for graduates as the very successful Lineworker program. The Workforce Connections system would be well positioned to provide supportive services to trainees to ensure they have what they need to complete the training and then transition into full employment.

Transferrable Skills

As of this writing, there are 9,356 people unemployed in Doña Ana County, including:

- 389 in Agriculture, Forestry, Fishing and Hunting
- 74 in Mining, Quarrying, and Oil and Gas Extraction
- 490 in Construction
- 194 in Professional, Scientific, and Technical Services
- 193 in the Business and Financial Operations Occupations

People who've been displaced by COVID in these industries may have transferrable skills with great value to the Energy Industry. Additionally, there are numerous displaced Oil & Gas workers in our region who were making the trip to the eastern part of the state to take on high-

paying jobs in this industry. The Workforce Connections offices are perfectly positioned to look across their job seeker database and make the connections between Roundtable member's jobs with these employers. Active outreach to these businesses to cultivate direct relationships between their Human Resource staff and a single point of contact for job postings in New Mexico will benefit both the employers and the job seekers looking to enter a new industry.

Existing Employee Training

Hiring from within is very prevalent in this industry, with 75% of these employers making offers to existing employees. There is a clear opportunity for the Business Services staff to maximize their support to these employers with training funds provided through the Workforce Connections system to upskill existing employees, thereby opening new opportunities for lower-skilled and entry level workers.

Additionally, forging new skill- and credential-specific training programs with DACC and NMSU may help Roundtable members prepare their existing workers to gain the education and training to meet the growing big data and new energy technologies needs they see on the horizon. DACC and NMSU both have recently approved degrees relevant to big data, and NMSU's leadership in beneficial electrification of New Mexico make them invaluable partners for the long-term with the Energy Industry.

CONCLUSION

The future for the Energy Industry in Doña Ana County is as "bright" as just about any of the Workforce Talent Collaborative's other seven target industry sectors. The academic assets being led by NMSU and a Chancellor with leadership in the conversations about the "electrification" of New Mexico mean that the industry and education leaders are well positioned for both change and dramatic growth.

We have to start today to better align and build a properly-skilled, ready-to-deploy workforce with seamless, forward-thinking talent development pipelines. But we also need to look at current talent availability in order to fill higher-skilled jobs being vacated by a retiring workforce.

The Energy workforce will be vital to economic recovery post-COVID and immune from industry-wide economic shocks that have impacted other private sector industries where 32% to 42% of jobs are projected to not recover. We have the opportunity to skill up workers from industries that aren't coming back with technical skills for this industry. Employers would value their previous work experience and be willing to customize their training to bring them into their workforce.

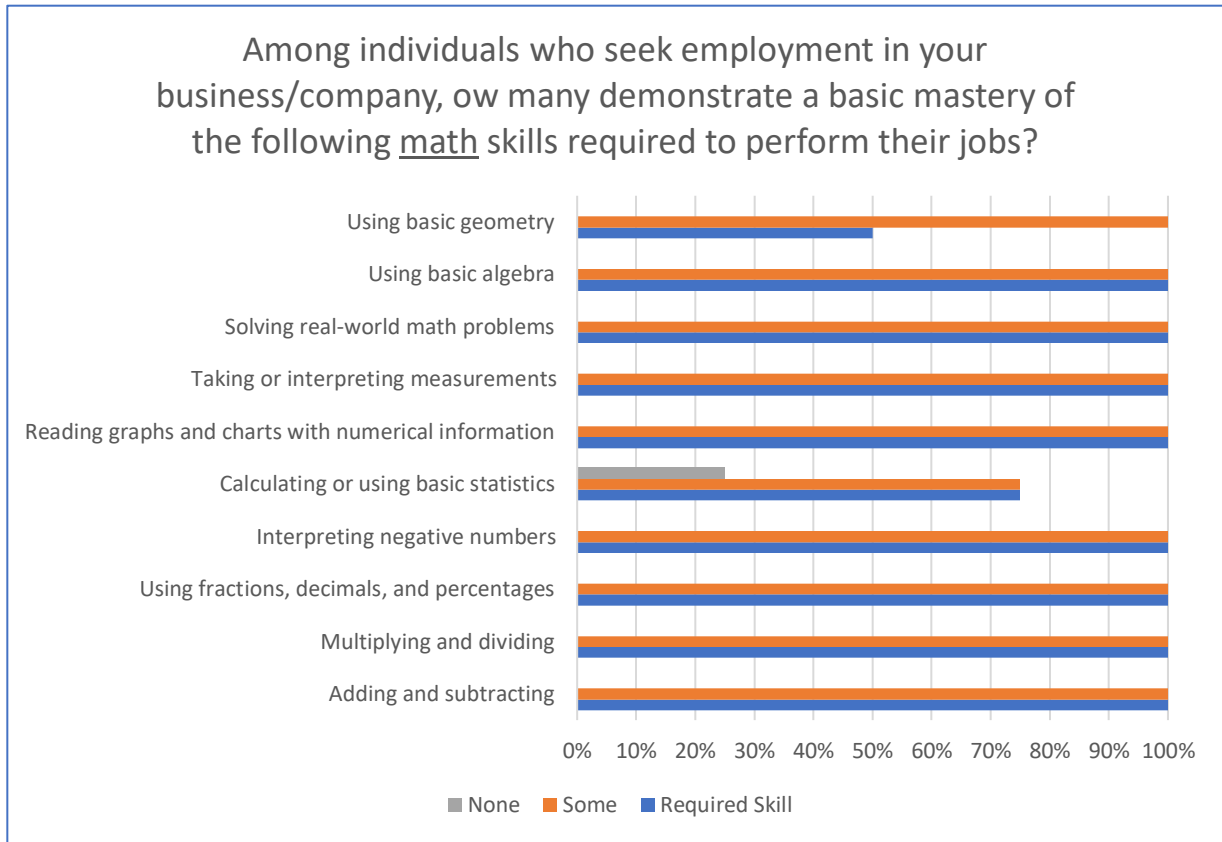
Success will ride on the strength of the connections within the talent development pipeline and the willingness of employers to integrate their leadership and mentorship into the talent pipeline and expand access to student internships and apprenticeships, as well as teacher externships.

Together, the Energy Industry of Doña Ana County will be ready for the challenges and opportunities ahead.

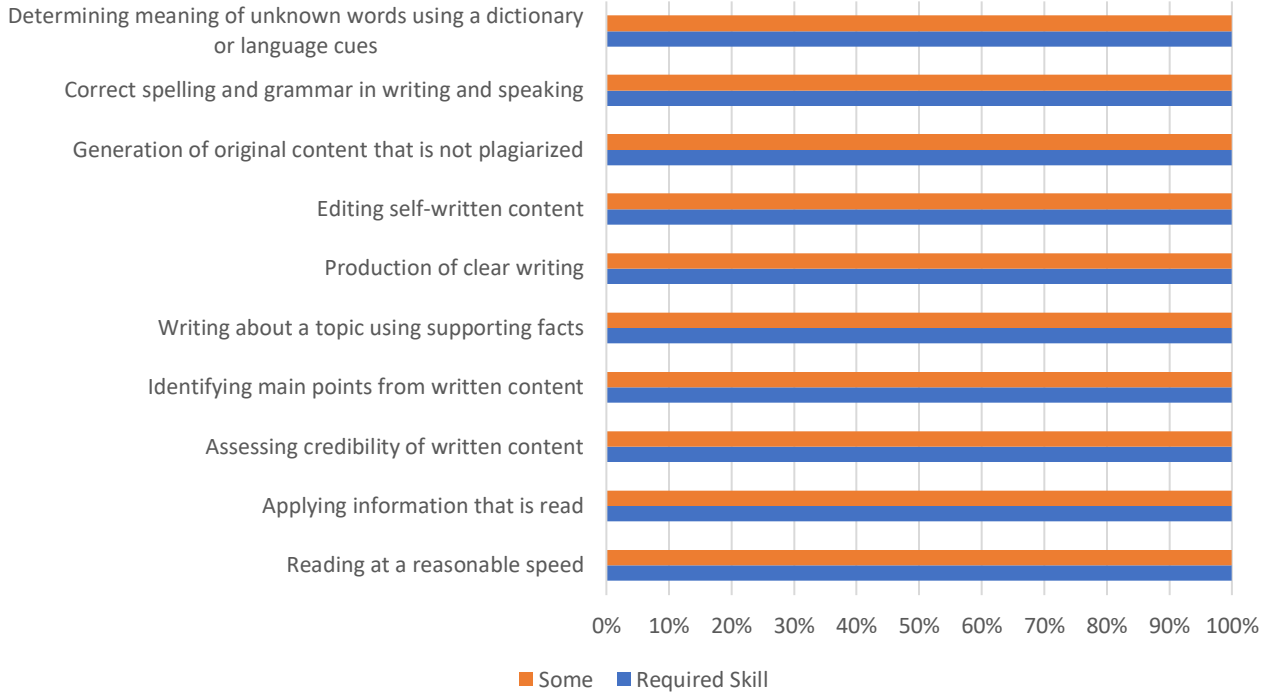
APPENDIX

A. Industry Survey Skills Results

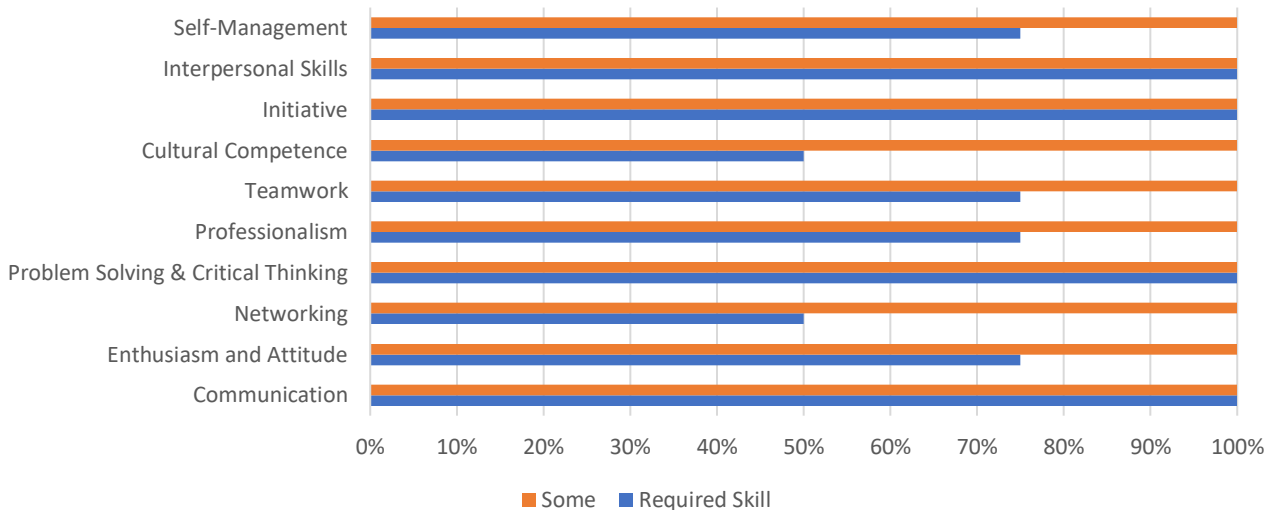
Following are the gap analyses for each of the five identified skill areas.



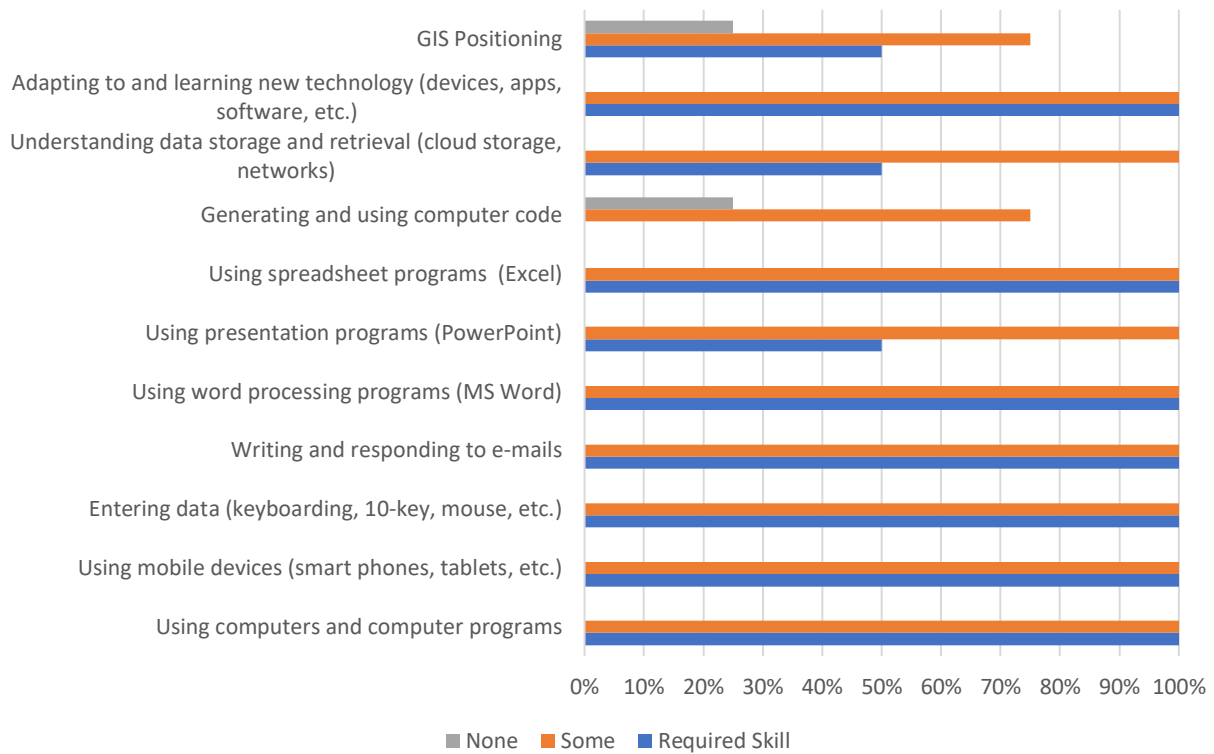
Which of the following reading, writing, and language skills are needed to perform most job-related tasks? Please select all that apply.



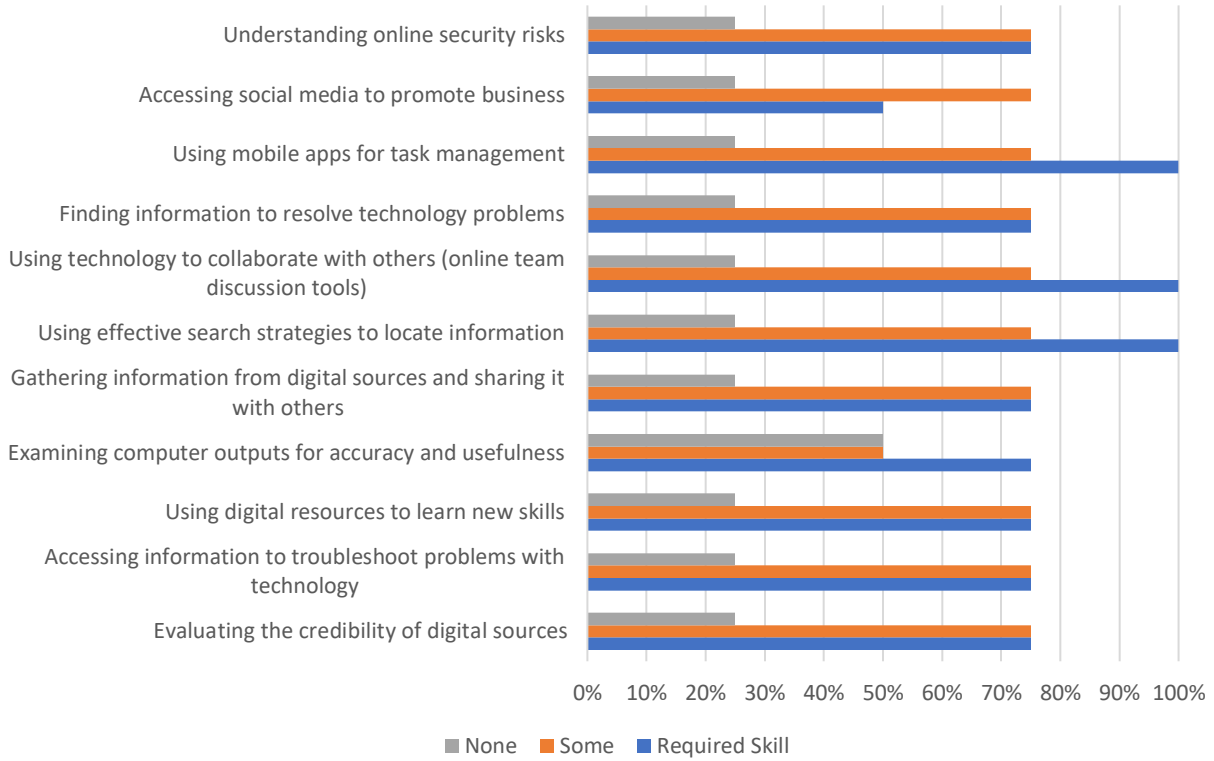
Which of the following employability skills are needed to perform most job-related tasks? Please select all that apply.



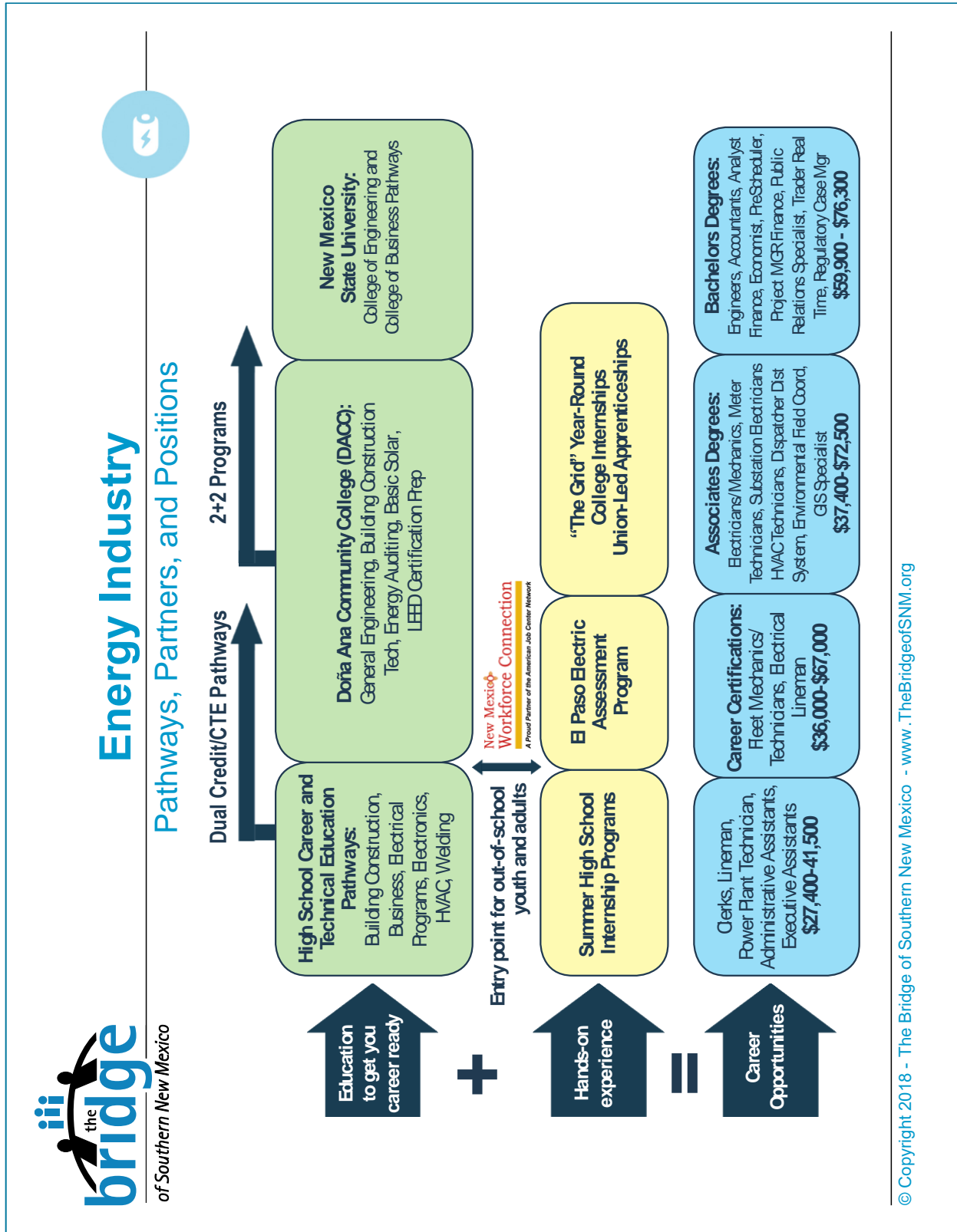
Which of the following technology skills are needed to perform most job-related tasks? Please select all that apply.



How many jobs in your business/company require a basic mastery of the following digital literacy skills to perform job-related tasks?



B. Energy Industry Career Pathway



ENERGY INDUSTRY ROUNDTABLE

A Special Thank You

We are deeply grateful to the team of leaders who served on our Industry Roundtable. Their commitment of time, wisdom, experience, and their spirit of innovation provided us with actionable intelligence to holistically prepare our New Mexico True Talent to be ready for some of the best jobs in our county. We look forward to our continued partnership!



The Bridge of Southern New Mexico
3655 Research Drive • Las Cruces, NM 88003
(575) 646-2527 • thebridgeofsnm.org