# USHE and Talent Ready Utah

## Workforce Alignment Research Study

October 2024

# Table of Contents


| | | |
|---|---|---|
| 3 | Executive Summary | |
| | 4 | Project Objectives |
| | 5 | Methodology |
| | 6 | Overview of Findings |
| 13 | Skills Breakdown | |
| | 15 | Skill Gaps |
| | 24 | Micro-credentials |
| | 28 | Future Skills |
| 31 | Work-Based Learning | |
| | 33 | Successes and Gaps |
| 37 | Partnerships | |
| | 39 | Successes and Gaps |
| 42 | Utah Vs. Out-of-State | |
| 47 | Appendix | |

# *Executive Summary*

*Overview of key findings*

# WORKFORCE ALIGNMENT STUDY | Overview and Objectives

## Project Overview

Talent Ready Utah and The Utah System of Higher Education (USHE) are seeking to understand the **effectiveness of higher education graduates** in the workforce, with a specific focus on gathering insights from employers in key industries.

This study will help **identify areas of improvement** and **provide recommendations** for enhancing and sustaining higher education's responsiveness and alignment to the needs of employers in Utah.

The 4 main objectives that Cicero will accomplish by the end of this study will be to:

1) **Define Employer Expectations**: Collect and define the expectations that Utah's private sector has of graduates from Utah's higher education institutions.

2) **Evaluate Graduate Quality**: Evaluate the quality, preparedness, and effectiveness of graduates from Utah's postsecondary institutions.

3) **Explore Industry Needs**: Understand the unique needs of employers by industry, such as: healthcare, life sciences, aerospace, financial services, computer sciences, advanced manufacturing, energy, retail, hospitality, transportation, and construction.

4) **Deliver Actionable Solutions**: Provide actionable recommendations to improve the alignment of higher education with the needs of employers in Utah.

# WORKFORCE ALIGNMENT STUDY | Methodology

*Cicero's methodology for data collection on this project consists of three phases: initial interviews, survey collection, and follow-up interviews.*

## Initial Interviews

- Cicero conducted a series of interviews with employers in Utah to get a sense of general graduate readiness.
- Key findings from these interviews were incorporated into the survey design.
- Initial interviewees came from a cross-section of Utah's key industries, geographies and firmographics.

## Survey Collection

- Cicero fielded the workforce readiness survey to Utah employers, distributed through USHE and TRU's industry partners.
- Cicero received over 600 responses, across all of Utah's industries and geographies.
- Survey findings were used to quantitatively support and contextualize insights from the initial interviews.

## Follow-up Interviews

- Cicero sourced several follow-up interviews from the survey pool to validate hypotheses and explore new findings.
- Select survey respondents were interviewed to flesh out specific themes, findings, and/or unique responses by industry.
- In total, Cicero spoke to just under two dozen employers in Utah and infused their insights in this research.

# WORKFORCE ALIGNMENT STUDY | Survey Methodology

*Cicero's methodology for survey creation involved both primary and secondary research to select skills and industries while designing the questionnaire to minimize subjectivity.*

## Selected Relevant Skills

Skills selected for use in this survey were generated **through both primary and secondary research**:

- For broadly applicable technical and durable* skills:
  - Cicero conducted a series of in-depth interviews to identify **top areas of concern for employers**
  - This was supported by secondary research and reports detailing necessary skills for graduates
- For industry-specific skills:
  - Cicero and TRU utilized the **O-Net database for relevant skills by occupation**, and organized them by industry

## Surveyed Experts Across Industry

Only professionals who could provide **relevant feedback** on this topic were surveyed, including individuals who hire, manage, or work alongside recent graduates.

Further, the industries in the survey **cover 85% of the major NAICS codes in Utah**.

- Healthcare – *NAICS 62*
- Life Sciences – *NAICS 54*
- Computer Sciences – *NAICS 51*
- Financial Services – *NAICS 52*
- Advanced Manufacturing – *NAICS 31-33*
- Aerospace – *NAICS 33 & 54*
- Energy – *NAICS 22*
- Construction – *NAICS 23*
- Transportation – *NAICS 48-49*
- Hospitality – *NAICS 71-72*
- Retail – *NAICS 44-45*
- "Other" Industries
  - Education, Government, Automotive and Business Services (*NAICS 61, 92, 81, & 56*)

## Minimized Subjectivity

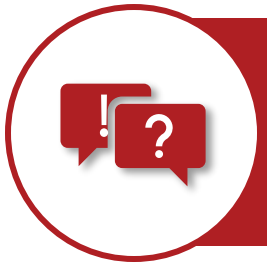
Cicero utilized its extensive experience in survey design to create a robust questionnaire **designed to mitigate subjectivity and increase cohesion.**

- The order and language of questions was **designed to minimize bias**, while also providing necessary context to standardize definitions of key topics to mitigate concerns of subjectivity.
- Survey logic was employed to **prioritize topics that respondents had expertise in** or experience with.
  - For example, those who had no knowledge of micro-credentials were not shown questions asking about the value of micro-credentials in hiring decisions.

*In the survey and in interviews, soft skills and durable skills were used interchangeably. For clarity and consistency purposes, durable skills will be used throughout this report.

# WORKFORCE ALIGNMENT STUDY | Executive Summary

*While industry is generally pleased with the preparedness of recent graduates in Utah, several areas of opportunity exist.*

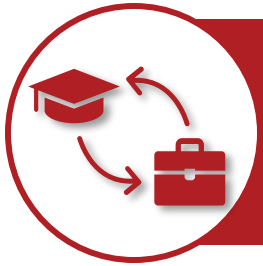


## Graduates Lack Durable Skills

- Durable skills such as communication and work ethic, are in high demand by **employers who find these skills generally lacking in recent graduates**.
- Industry sees a clear opportunity for postsecondary institutions to do more to develop durable skills in students, but also **recognizes that this is a shared responsibility between employers and institutions**.

## Technical Skill Quality Varies by Industry

- Several industries report high satisfaction with the technical skills of recent graduates while others, **such as Aerospace and Computer Science report that graduates' technical skills are outdated or lacking in depth**.
- Increased collaboration with industry, coupled with the expansion of non-traditional **educational tools like micro-credentials and certificates can help to close technical skill gaps**.



## Industry Desires Greater Collaboration

- **Industry increasingly desires to have a voice on campus –** examples include representation on boards, curriculum development, and classes being taught by industry professionals.
- **Strengthening collaboration through industry partnerships can expand access to work-based learning (WBL) opportunities** which make the largest impact on preparing graduates for the workforce.

## Work-Based Learning is Key to Graduates' Success

- Increasing work-based learning (WBL) opportunities is of great interest to industry, **which values experience over educational attainment in hiring decisions.**
- Industry often has limited ability to sponsor/expand WBL due to resource constraints and lack of access, yielding a need for **institutions to play an active role in developing and promoting WBL programs**.

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# WORKFORCE ALIGNMENT STUDY | Graduates Lack Durable Skills

*Industry finds it challenging to train, and work alongside today's graduates due to a general scarcity of durable skills.*

1. **40% of industry says higher ed has room to improve, with the largest area to improve being durable skills.**

2. **The largest durable skill gaps are stress management (21%), conflict management (18%), and time management (18%). Gaps in technical skills are slightly less pronounced, and less problematic for employers.**

3. **Industry largely agrees that higher ed has the capability (79%) responsibility (80%), and environment (80%) to teach durable skills before graduates enter the workforce.**

4. **Industry acknowledges it has an equal responsibility for developing durable skills in graduates, skills like interpersonal skills (65% vs. 67%) and emotional skills (41% vs. 41%).**

*"The biggest gap we have seen is cellphones in hand and communication failures, like social communication, face-to-face communication, talking, working in teams."*

**- Employer in Advanced Manufacturing**

*"They can't handle the stress… because they avoid the stressful situations. How do we pressure them into more stressful situations during school, so they are ready for the workforce?"*

**- Employer in Healthcare**

*"When I went to a tech school, you spent half the school day practicing emails, interviews, resumes, communication, and professional dress. We aren't getting them set and prepped."*

**- Employer in Advanced Manufacturing**

*"Critical thinking and problem solving comes from experience... It comes with training, and we train the ability to problem solve."*

**- Employer in Healthcare**

# WORKFORCE ALIGNMENT STUDY | Technical Skill Quality Varies by Industry

*Technical skill gaps exist in some industries, like advanced manufacturing and aerospace; micro-credentials and certificates can help to close technical skill gaps.*

1. **While 11% of industry encounters graduates with outdated skills, the rate doubles in Life Sciences and Advanced Manufacturing, with 1 in 5 employers reporting that recent graduates come with outdated skills.**

2. **Aerospace also reports that recent graduates have outdated skills (16%) and the industry has the greatest unmet expectations in automation and robotics (29%) and systems engineering (22%).**

3. **Two-thirds of industry is aware of micro-credentials, and half actively hire candidates with micro-credentials, though adoption varies widely by sector.**

4. **Micro-credentials positively influence most hiring decisions (65%), with employers viewing them as strong indicators of proficiency in both technical (75%) and durable skills (68%).**

*"There is a big disconnect on what they are teaching at schools, and what we need. The technology is moving so fast, that we have to start all over again teaching them. The technology is 2-3 years behind."*

**- Employer in Advanced Manufacturing**

*"To be effective, work-based learning programs in our industry need to enroll graduates in technological industries like robotics."*

**- Employer in Aerospace**

*"[It would help to] provide certification programs in areas like food safety, event management and hospitality management, which can provide students with additional credentials that are valued in the hospitality industry."*

**- Employer in Hospitality**

*"We've hired programmers without degrees because they can prove themselves. If there were credentials or nano degrees or PD courses that are certificates of proficiency, that would help."*

**- Employer in Computer Sciences**

# WORKFORCE ALIGNMENT STUDY | Industry Desires Greater Collaboration

*Industry wants strong partnerships including WBL opportunities, board representation, co-developed curricula, and classroom instruction to drive greater workforce readiness for graduates.*

1. **Partnerships with industry get a moderate review, with an average strength score of 5.2 out of 7.0; additionally, most employers feel partnerships are highly important.**

*"We're small businesses. So, we probably haven't gone and developed those relationships as we should have, but I also think on the educational side it would help to have some outreach."*

**- Employer in Energy**

2. **Industry increasingly desires to have a voice on campus, with industry advisory boards being very valuable to over half of employers.**

*"The boards are too narrow and small to make decisions on curriculum, so schools get feedback, but it isn't comprehensive enough."*

**- Employer in Computer Sciences**

3. **Having industry professionals present or teach in class is very valuable to employers (51%) however, it occurs infrequently, only 35% and 22% of the time, respectively.**

*"The ways I'd like to see partnership improved is with involvement in the curriculum and classroom, so [graduates] can better meet the needs and expectations of employers."*

**- Employer in Healthcare**

4. **The greatest barrier to partnerships with higher ed is a lack of resources (39%). However, higher ed partnerships can seem complicated and thus limit cooperation. (31%)**

*"Once it goes into the education system, the private sector doesn't view it as accessible."*

**- Employer in Computer Sciences**

# WORKFORCE ALIGNMENT STUDY | Work-Based Learning is Key to Graduates' Success

*Industry values experience, with work-based learning particularly preparing students for success; however, industry's limited resources for WBL gives higher ed an opportunity to expand access through facilitation and design.*

1. **More than half of employers agree that a college education is valuable to success in Utah. However, two-thirds of industry find experience to be a key differentiator in hiring, signifying the value of work-based learning.**

*"It is obvious to see the difference between graduates with experience versus without."*

**- Employer in Computer Sciences**

2. **Work-based learning (WBL) opportunities are viewed as an effective way to prepare graduates for the workforce, especially internships (64% very successful) and apprenticeships (61% very successful).**

*"Work-based learning opportunities help overcome some of the [durable skills] problems we have discussed, they may even be necessary."*

**- Employer in Healthcare**

3. **Industry often has limited ability to sponsor or expand WBL opportunities, the largest reason being resource constraints (50% agree).**

*"We only have so many mentors to train, and we want to get it right. It takes time and people to do right. We can't spread ourselves to thin."*

**- Employer in Healthcare**

4. **Institutions can play an active role in developing and promoting WBL programs, especially current success like "Custom Fit" or "ASPIRE".**

*"We need to amplify the ideas that are working, reinforce them with industry, and fund them to grow. Because industry is ready for these types of programs."*

**- Employer in Computer Sciences**

# Utah's Higher Ed Earns a 'B+' in Workforce Preparedness from Industry

**CONTINUE TO LEVERAGE**

- Curricula Successfully Imparting Technical and Other Hard Skills
- Mutual Desire Among Higher Ed And Industry To Partner for Success
- Internships And Other Successful WBL Opportunities

## *OPPORTUNITIES FOR IMPROVEMENT:*

1. **HEIGHTENED FOCUS ON DURABLE SKILLS DEVELOPMENT**
2. **INCREASED AVAILABILITY OF WBL OPPORTUNITIES**
3. **STRENGTHENING INDUSTRY CONNECTION TO HIGHER ED**
4. **QUICKER FEEDBACK ON INDUSTRY TECHNICAL SKILL NEEDS**

## *Recommendations:*

- *Increase presentations, group work, and technical writing opportunities*
- *Introduce regular face-to-face feedback with professors and advisors*
- *Design 'starter kits' recommending structures and best practices for industry to expand WBL opportunities beyond what currently exist*
- *Create/enhance specialized function that's dedicated to facilitating relationships between higher ed and industry*
- *Create an independent credential board staffed by industry professionals that guides credentialling decisions*

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# *Skills Breakdown*

# WORKFORCE ALIGNMENT STUDY | Skills Breakdown Overview

## Skills Breakdown Section

**ABOUT**: This section presents findings from the survey assessing Utah employers' perceptions of recent graduates' preparedness for the workforce. **The findings in this section highlight strengths and key areas for improvement for higher ed. when developing graduates for the workforce.**

Employers were asked to rate their expectations for graduates across four skill categories: **business skills, interpersonal skills, technical skills, and industry-specific technical skills**. Using a 7-point scale, respondents assessed the proficiency level they expect graduates to achieve, from "inexperienced" to "master." Then, on the skills employers rated as graduates needing to be "proficient" or above, employers were asked to rate how graduates meet these expectations, ranging from "far below expectations" to "far above expectations."

In the same manner, the survey also examined among skills respondents deemed essential today which will become more or less critical over the next 5–10 years, providing insight into future workforce needs.

The study delves into additional topics, asking respondents to share thoughts on **outdated skills taught segmented by key industries**, **the shared responsibility of higher education and workplaces in developing durable skills**, **the value and awareness of micro-credentials** in industry, and the **impact of AI on the workforce**.

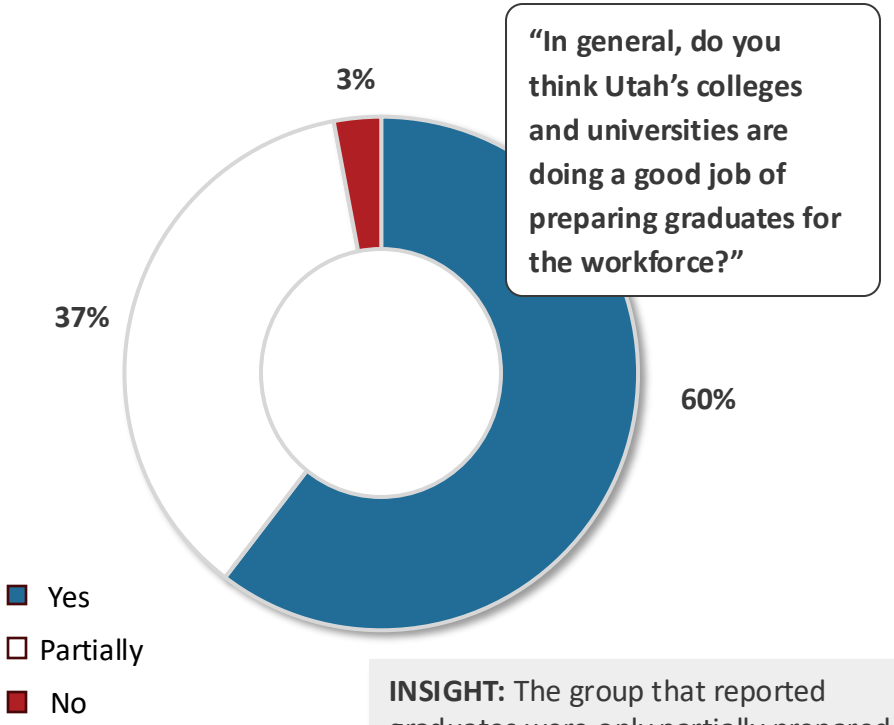
Findings are segmented by industry, highlighting areas where certain sectors diverge from broader trends. Additionally, notable quotes from the qualitative interviews and free-response sections were added to give context to quantitative findings. These insights offer a detailed and actionable perspective on how higher education can better prepare graduates for the evolving demands of Utah's workforce.

# 40% of employers see a gap in graduates' readiness, particularly in durable skills, that higher ed has both the capability and responsibility to address.

## Industry Evaluation of Higher Ed's Preparation of Graduates

All groups
*n = 603*

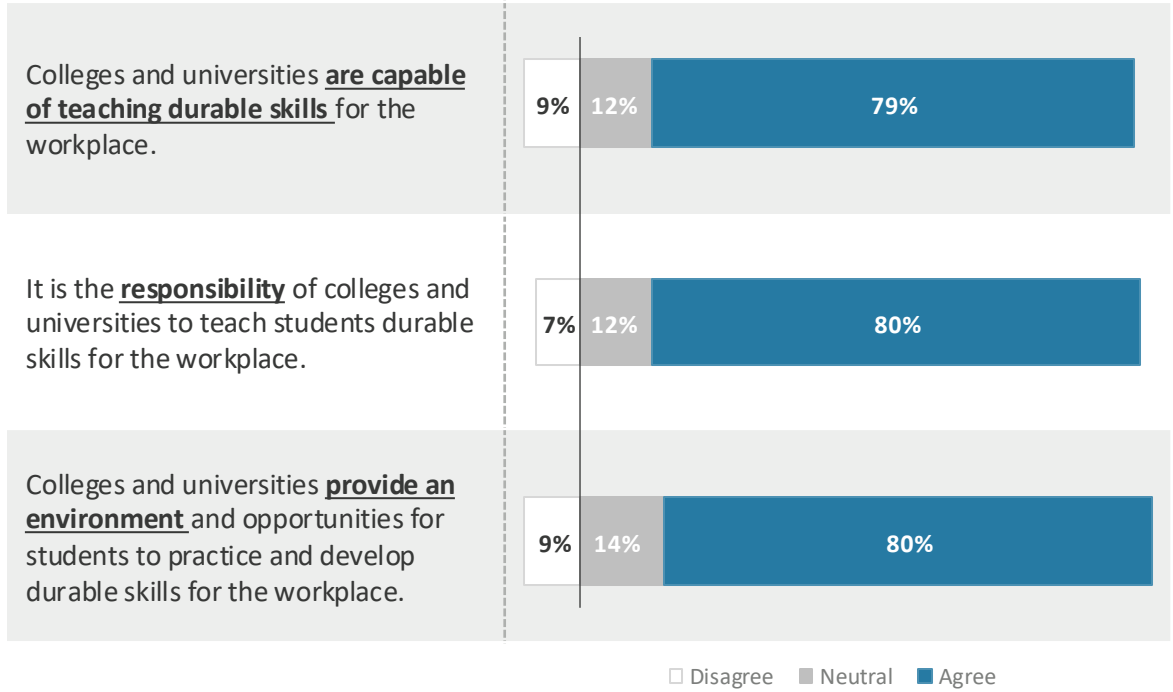
**"In general, do you think Utah's colleges and universities are doing a good job of preparing graduates for the workforce?"**




**INSIGHT:** The group that reported graduates were only partially prepared called out gaps in **hands-on experience and internships** in dozens of survey responses and multiple interviews.

## Industry Evaluation of Higher Ed's Durable Skill Development

All groups
*n = 603*




*"When I went to a tech school, **you spent 3 hours of a 6-hour day in school practicing emails, interviews, resumes, communication, dress etiquette, etc…** We aren't getting graduates prepped for work. We need someone to explain reality… and not just hope they pick it up."*

**- Employer in Advanced Manufacturing**

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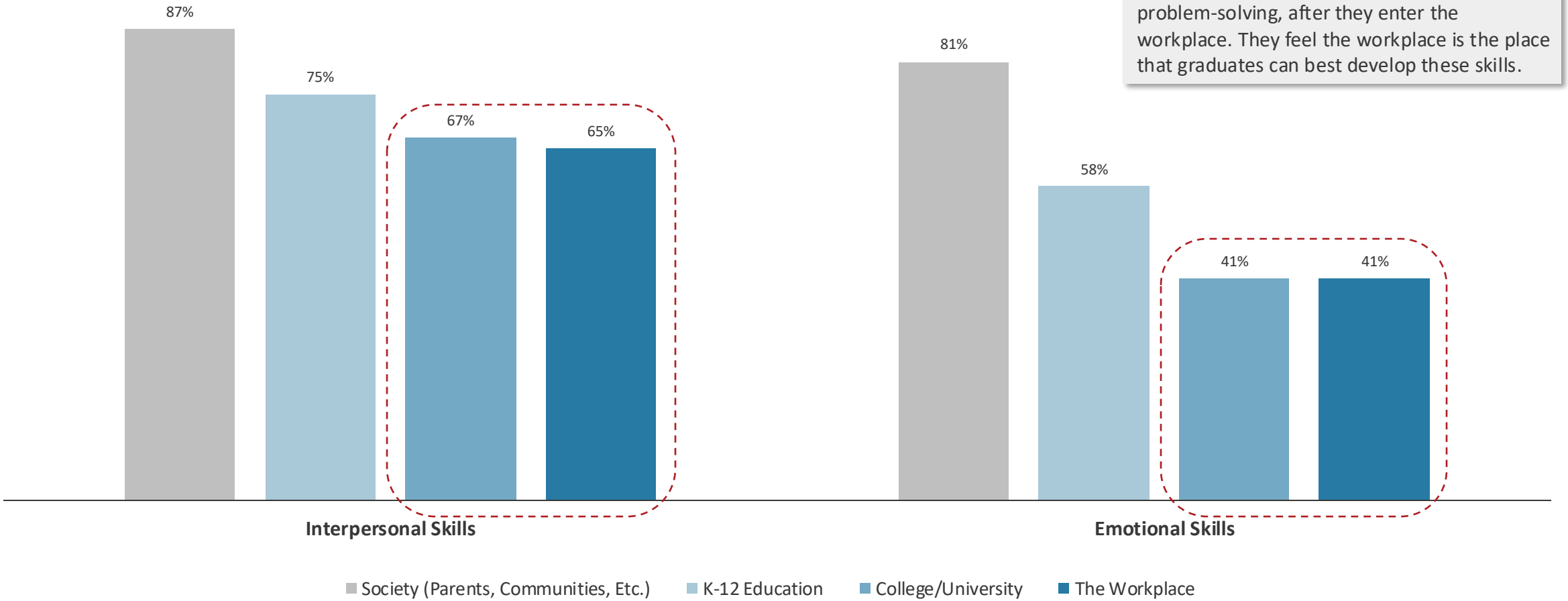
*Q12 - How much do you agree with the following statements about the relationship between durable skills and colleges and universities?*
*Q13 - In general, do you think Utah's colleges and universities are doing a good job of preparing graduates for the workforce?*

# Industry recognizes that it has an equal share of responsibility for developing durable skills.

## Expected Responsibility for Skill Development, By Domain

All groups
*n = 603*

**INSIGHT:** Some Utah employers expect to develop certain skills in graduates, like problem-solving, after they enter the workplace. They feel the workplace is the place that graduates can best develop these skills.



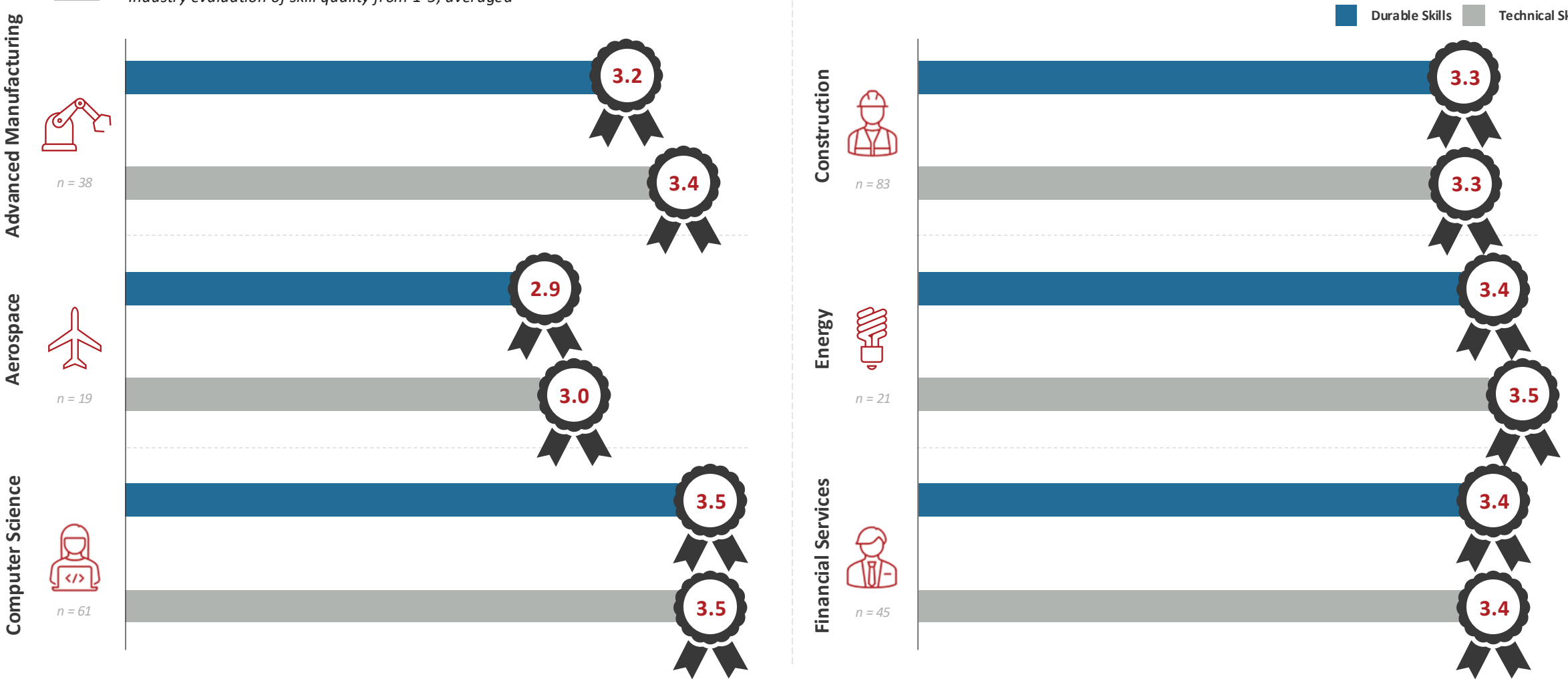

*Q12a - Many educational systems and social structures can influence an individual's development across different skills. For each of the structures and systems below, please indicate which skills you expect them to help an individual develop.*

# Industry is generally more satisfied with graduates' technical skills than durable skills; Aerospace has the lowest satisfaction in both areas and Computer Science the highest.

## Industry Evaluation of Technical and Durable Skills

By Industry

*Industry evaluation of skill quality from 1-5; averaged*

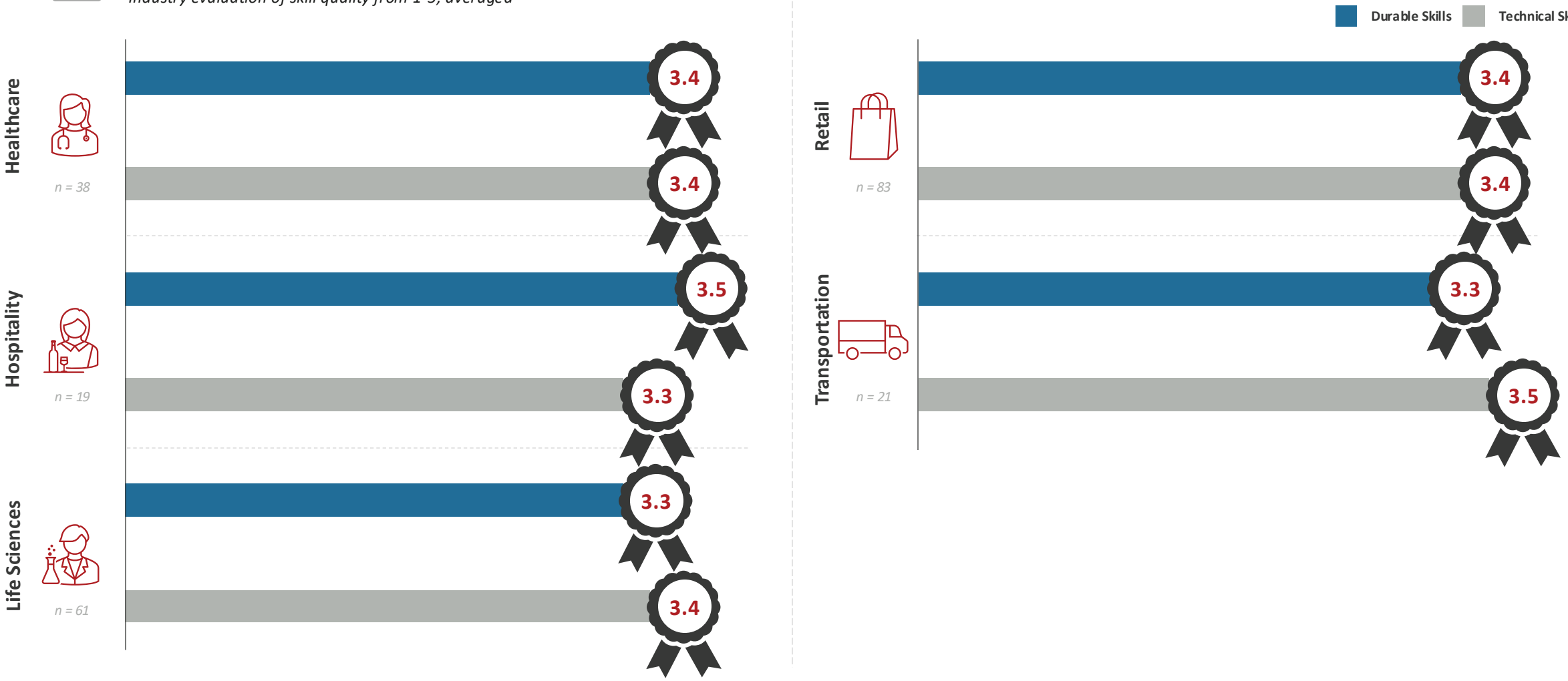


# Satisfaction rates were consistent across key industries, reflecting higher ed's proficiency in preparing students with relevant skills, though some areas for improvement remain.

## Industry Evaluation of Technical and Durable Skills

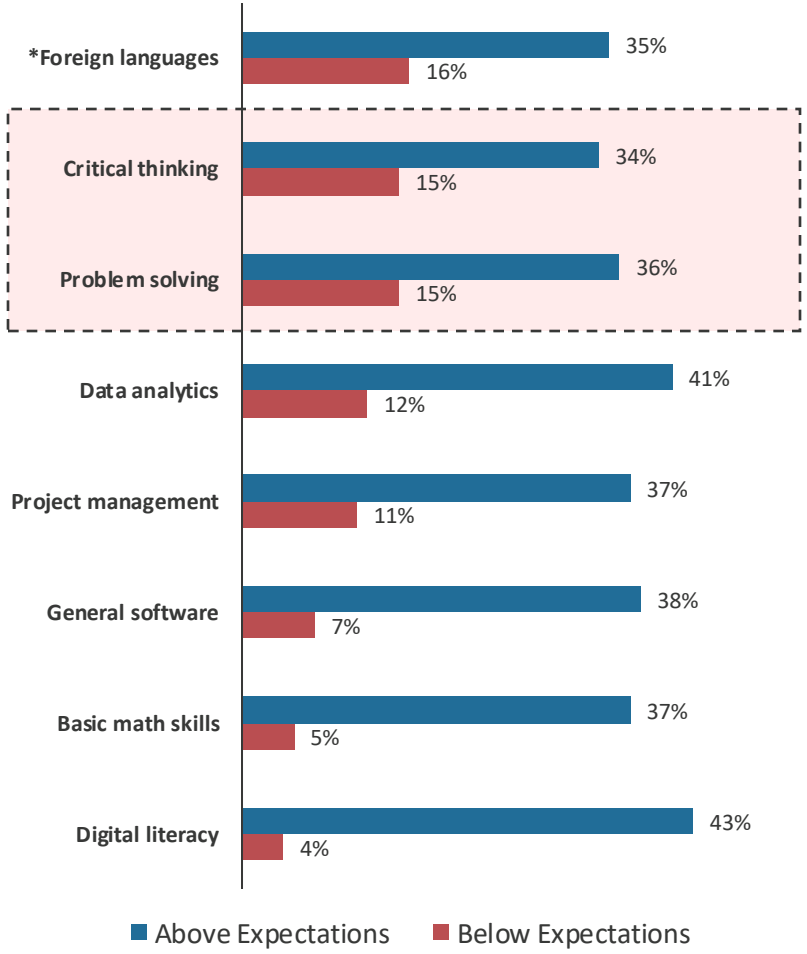
By Industry

*Industry evaluation of skill quality from 1-5; averaged*

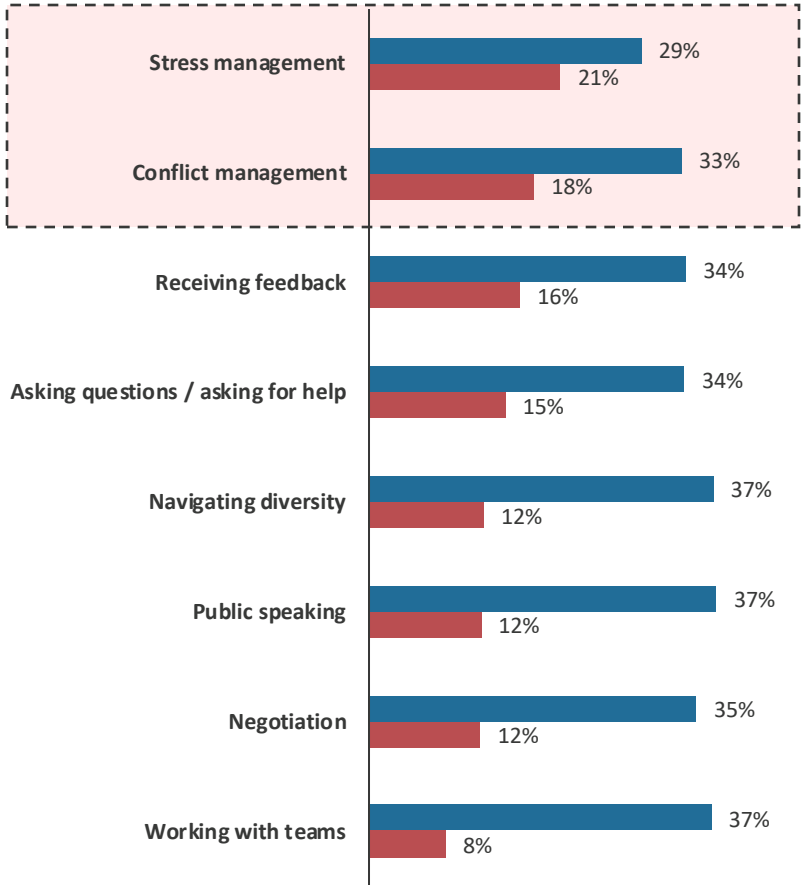


# Graduates' ability to manage conflict, stress, and time are the largest gaps in durable skills, followed by gaps in technical skills like critical thinking and problem solving.

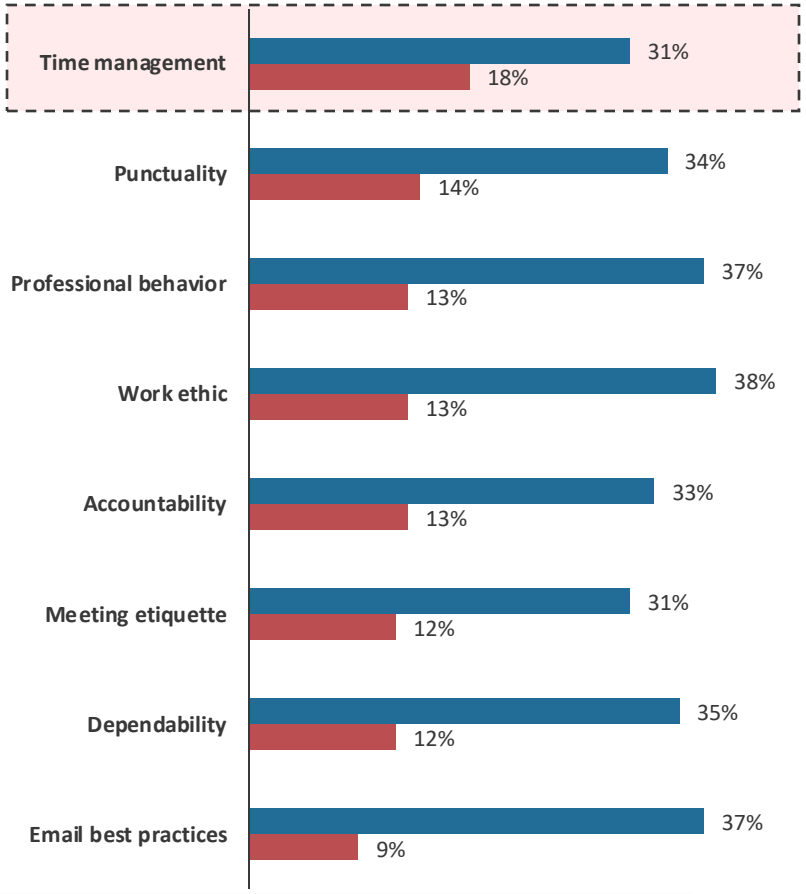
## Recent Graduate Technical Skills;
**Above or Below Expectations**
All industries
*n = 603*




## Recent Graduate Personal Skills;
**Above or Below Expectations**
All industries
*n = 603*




## Recent Graduate Business Skills;
**Above or Below Expectations**
All industries
*n = 603*




***INSIGHT:** Although an area of dissatisfaction for industry, foreign language skills was an area of least concern among industry when surveyed on their expectations for recent graduates' technical skills.

*Q8 - You indicated that the following skills are important to your organization. How well do the recent graduates you have hired from Utah's colleges and universities meet your expectations on each of the following skill sets?*

# Graduates with durable skills stand out, including communication, critical thinking and problem solving; many in industry are actively seeking to “hire for culture, train for skill.”

## Skill Needs

### Durable Skills Stand Out

Due to a general dearth of durable skills, the top skills a potential hire can posses are interpersonal skills like **communication skills, which was mentioned as a stand-out skill over 100+ times.**

### Technical Skills in Learning and Analysis Rank Highly

Other top skills that set graduates apart were **problem solving (76)**, **critical thinking (45)**, and a **willingness to learn(46).**

*Q9 - What are the 1-2 skills that make a potential hire stand out the most?*
**The word map represents the top 35 most mentioned skills in Q9, representing 86% of all answers.*

# Some industries, particularly aerospace and advanced manufacturing, face greater unmet expectations in industry-specific skills, but all anticipate evolving skill needs for graduates.

| Industry | Unmet Expectations | | Future Skill Needs | |
|---|---|---|---|---|
| | *% Below Expectations* | Industry-Specific Skills *(Collected from O-Net Skills)* | *% Feel More Important* | Industry-Specific Skills *(Collected from O-Net Skills)* |
| **Adv. Manufacturing** | (27%)<br>(25%)<br>(24%) | 1. Equipment preventative maintenance<br>**2. Quality Control/assurance techniques**<br>**3. Automation and robotics** | (90%)<br>(85%)<br>(79%) | **1. Automation and robotics**<br>2. Supply chain logistics<br>**3. Quality Control/assurance techniques** |
| **Aerospace** | (43%)<br>(29%)<br>(22%) | 1. Use of Six Sigma methodology<br>2. Automation and robotics<br>3. Systems engineering principles | (75%)<br>(73%)<br>(71%) | 1. Expertise in avionics<br>2. Project management<br>3. Advanced manufacturing processes |
| **Computer Sciences** | (13%)<br>(10%)<br>(10%) | 1. Cybersecurity principles and best practices<br>2. Python, Java, C++, JavaScript and SQL<br>**3. AI/ML framework techniques and processes** | (93%)<br>(89%)<br>(89%) | **1. AI/ML framework techniques and processes**<br>2. Efficient data structures and algorithms<br>3. Cloud computing and platforms |
| **Construction** | (15%)<br>(13%)<br>(10%) | 1. Construction drawing literacy<br>2. Technical drawings and blueprint software<br>3. Basic construction tools and equipment | (78%)<br>(78%)<br>(77%) | 1. BIM construction software<br>2. Structural engineering principles<br>3. Construction techniques and material properties |
| **Energy** | (13%)<br>(13%)<br>(13%) | **1. Energy storage systems and integrations**<br>**2. Managing energy projects**<br>**3. Environmental regulations and compliance** | (93%)<br>(88%)<br>(78%) | **1. Environmental regulations and compliance**<br>**2. Energy storage systems and integrations**<br>**3. Managing energy projects** |
| **Financial Services** | (19%)<br>(14%)<br>(13%) | 1. Client communication<br>**2. Financial regulation and compliance**<br>3. Financial modeling and interpretation | (87%)<br>(84%)<br>(83%) | 1. Portfolio management techniques<br>2. Skills with statistical tools for analyzing financial data<br>**3. Financial regulation and compliance** |

**For each category, skills not in the top of most important skills were removed to focus in on deficits in only the most important skills.*

*Q7 - For each of the following skill sets, what is the minimum level of proficiency that you expect recent graduates to have when they start work at your organization?*
*Q8 - You indicated that the following skills are important to your organization. How well do the recent graduates you have hired from Utah's colleges and universities meet your expectations on each of the following skill sets?*
*Q32 - You indicated previously that the following skills are valuable to your industry. Compared to today, how important do you believe these skills will be for your industry 5 years from now?*

# Some industries, particularly aerospace and advanced manufacturing, face greater unmet expectations, but all anticipate evolving skill needs for graduates.

| Industry | Unmet Expectations | | Future Skill Needs | |
|---|---|---|---|---|
| | *% Below Expectations* | Industry-Specific Skills *(Collected from O-Net Skills)* | *% Feel More Important* | Industry-Specific Skills *(Collected from O-Net Skills)* |
| **Healthcare** | (10%)<br>(7%)<br>(7%) | 1. Pharmacology principles<br>**2. Empathy and active listening**<br>**3. Infection control practices** | (81%)<br>(80%)<br>(78%) | **1. Empathy and active listening**<br>**2. Infectious control principles**<br>3. Healthcare technology literacy |
| **Hospitality/Tourism** | (21%)<br>(15%)<br>(15%) | 1. Sustainable tourism principles<br>**2. Financial management**<br>3. Event planning and management | (92%)<br>(92%)<br>(92%) | **1. Financial management**<br>2. Digital tools in hospitality and tourism<br>3. Public relations and communication |
| **Life Sciences** | (20%)<br>(19%)<br>(13%) | 1. Bioinformatic tool usage<br>2. Microscope and imaging expertise<br>**3. Regulatory requirements and quality assurance** | (94%)<br>(88%)<br>(87%) | 1. Statistical methods and software<br>**2. Regulatory requirements and quality assurance**<br>3. Cell culture maintenance |
| **Retail** | (27%)<br>(23%)<br>(17%) | 1. Merchandizing displays and placement<br>2. Inventory management<br>3. Sales data analysis | (85%)<br>(82%)<br>(82%) | 1. Retail technologies and software<br>2. Effective sales strategies<br>3. Marketing and advertising strategies |
| **Transportation** | (13%)<br>(11%)<br>(8%) | **1. Critical decision making under pressure**<br>**2. TMS, GPS, and ELD usage**<br>3. Transportation efficiency and optimization | (100%)<br>(93%)<br>(89%) | 1. Adapting to changing industry norms<br>**2. Critical decision making under pressure**<br>**3. TMS, GPS, and ELD usage** |

**For each category, skills not in the top of most important skills were removed to focus in on deficits in only the most important skills.*

*Q7 - For each of the following skill sets, what is the minimum level of proficiency that you expect recent graduates to have when they start work at your organization?*
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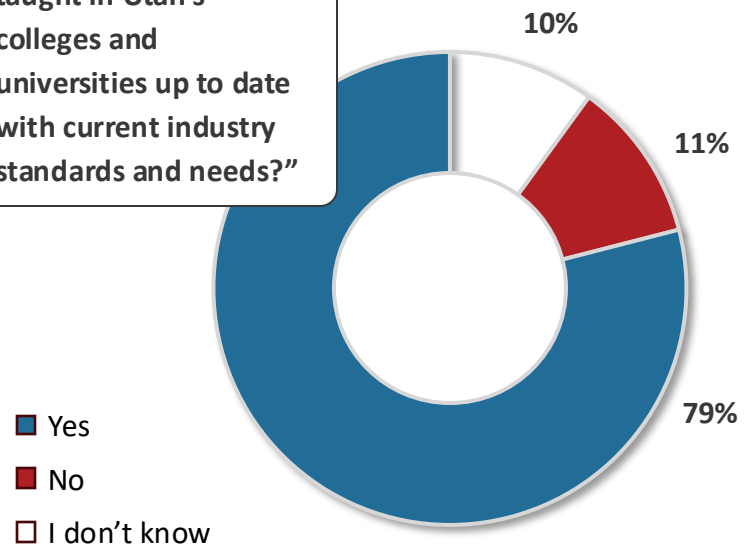
*Q32 - You indicated previously that the following skills are valuable to your industry. Compared to today, how important do you believe these skills will be for your industry 5 years from now?*

# While higher ed equips graduates with relevant skills, industries like advanced manufacturing and life sciences report more graduates with outdated skills than others.

## Relevance of Technical Skills Among Recent Graduates

All industries
*n = 603*

**"Are the technical skills taught in Utah's colleges and universities up to date with current industry standards and needs?"**




**INSIGHT:** The healthcare industry was the most satisfied with the relevance of recent graduates' skills, **with 90% reporting that recent graduates they hire have the most current knowledge** and skills that the industry needs.

## Top Five Industries Where Recent Graduates Have Out-of-date Skills

*Percent of industry that experiences graduates with outdated skill sets.*

### 1. Life Sciences 21%

**Examples of Out-of-date skills**
- "Data analytics, AI/ML, Digitalization, Quality/Regulatory"
- "AI and Machine Learning. Regulatory Science."

### 2. Advanced Manufacturing 21%

**Examples of Out-of-date skills**
- "Advanced manufacturing techniques, up to date quality control equipment, basic knowledge of different materials."
- "Automation"
- "Machine maintenance, quality, professional/work ethic skills"

### 3. Retail 18%

**Examples of Out-of-date skills**
- "Traditional Data Analysis Tools."
- "Waterfall development"

### 4. Aerospace 16%

**Examples of Out-of-date skills**
- "Utah's colleges do well at teaching core engineering principles, however they don't teach practical skills needed in most industries - skills like creating/reading prints, design for manufacturability, manufacturing processes etc"
- "Systems Engineering"
- "Model based systems engineering, systems thinking and analysis, clear technical writing"

### 5. Transportation 13%

**Examples of Out-of-date skills**
- "Electronics is probably where they lack the most. They are learning on probably 8- to 10-year-old equipment. It will teach them the basics but that's about it."
- "They are lagging behind in the aspect of supply chain management."

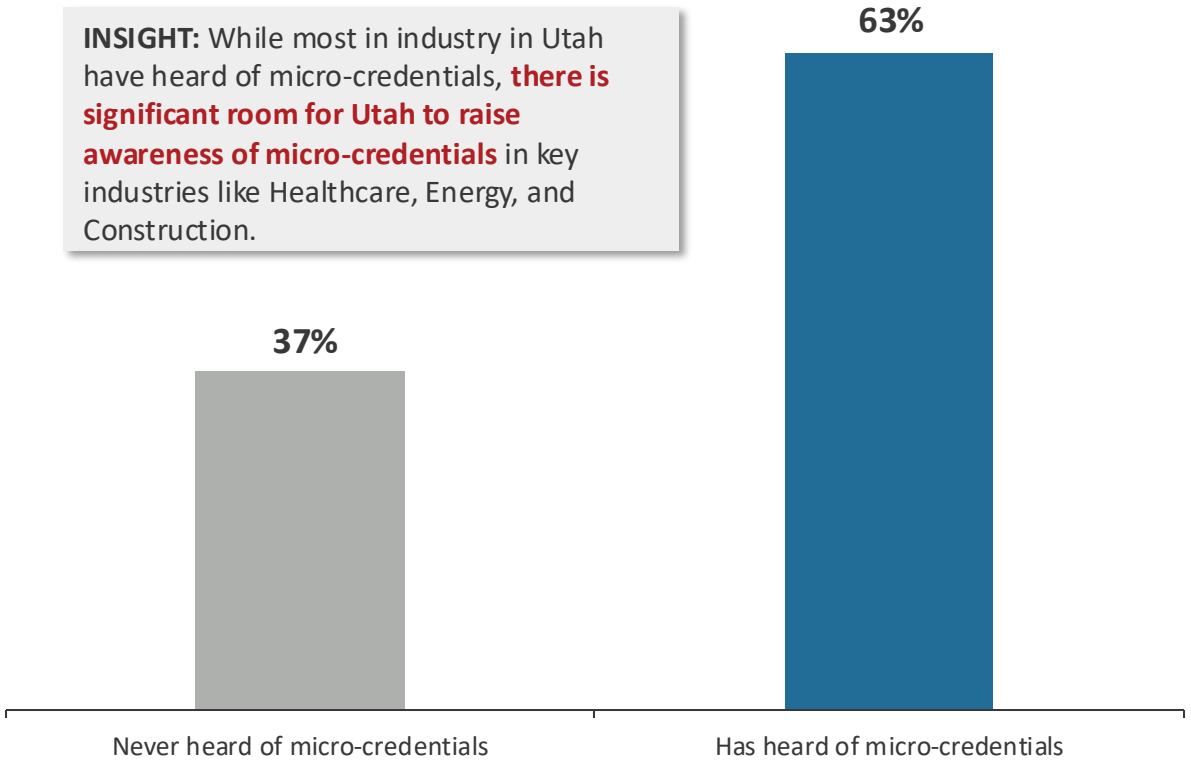
*Q10 - Are the technical skills taught in Utah's colleges and universities up to date with current industry standards and needs?*
*Q11 - What are some examples of technical skills taught in Utah's colleges and universities that are not up to date with current industry standards?*

# Most of industry is aware of micro-credentials; financial services and computer sciences are the most aware while energy and construction are the least aware.

## Industry Awareness of Micro-credentials

All industries
*n = 603*

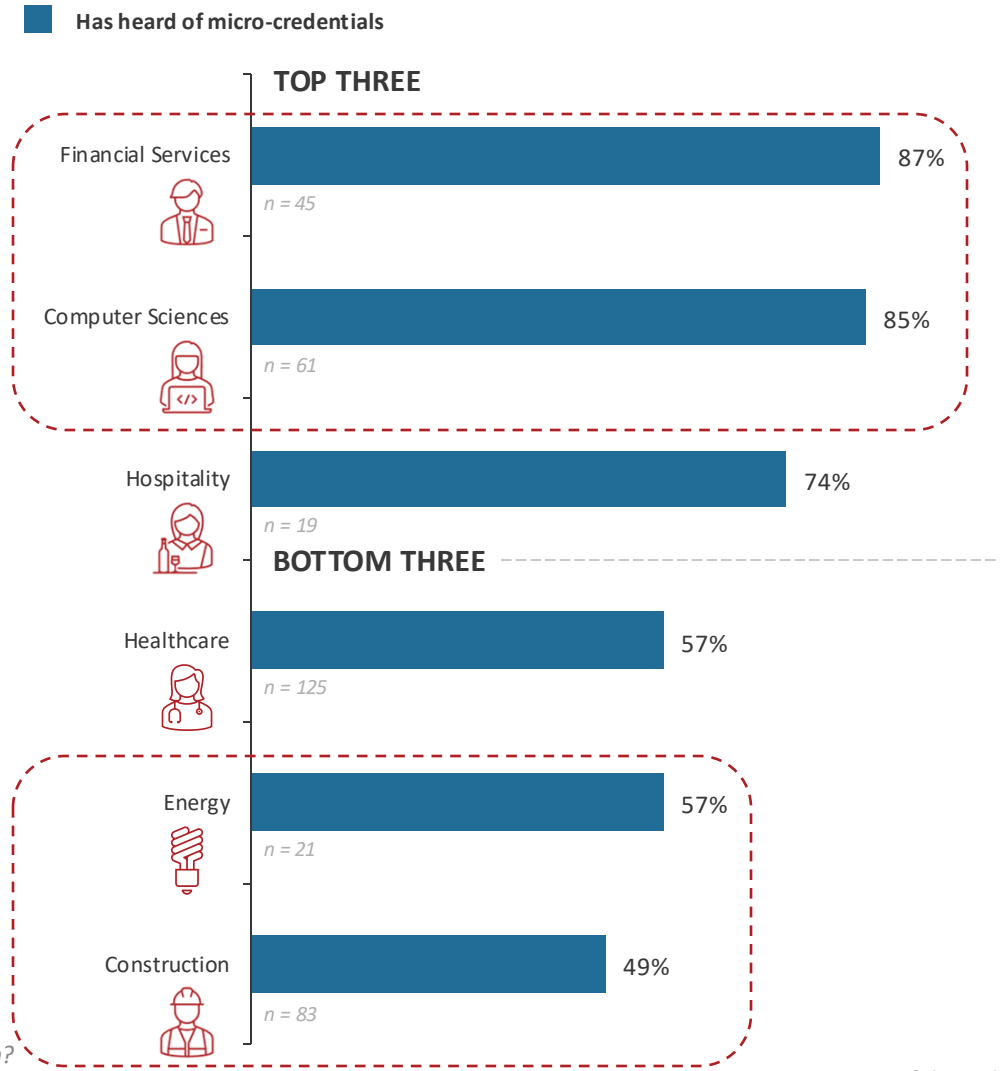
**INSIGHT:** While most in industry in Utah have heard of micro-credentials, **there is significant room for Utah to raise awareness of micro-credentials** in key industries like Healthcare, Energy, and Construction.




**Note:** *Due to the large number of healthcare and construction respondents, which are least aware of micro-credentials, the fraction of those who have never heard of micro-credentials in the overall industry awareness is slightly inflated.*

## Industry Awareness of Micro-credentials

*By industry; top and bottom three industries*



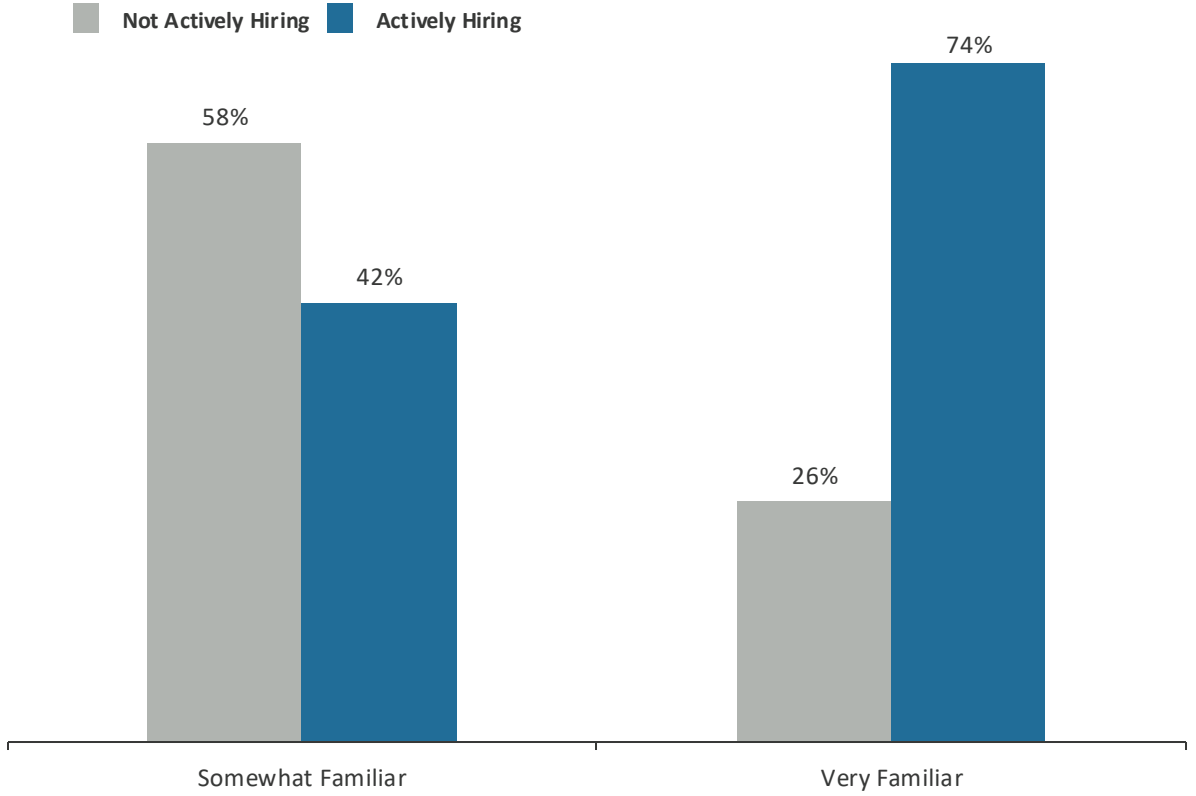

*Q21 - How familiar are you with micro-credentials and does your organization actively hire for them?*

# Industries who are very familiar with micro-credentials more often actively hire for them than those who are only somewhat familiar, however this can vary by industry.

## Industry Micro-credential Familiarity and Seeking Rates

All industries

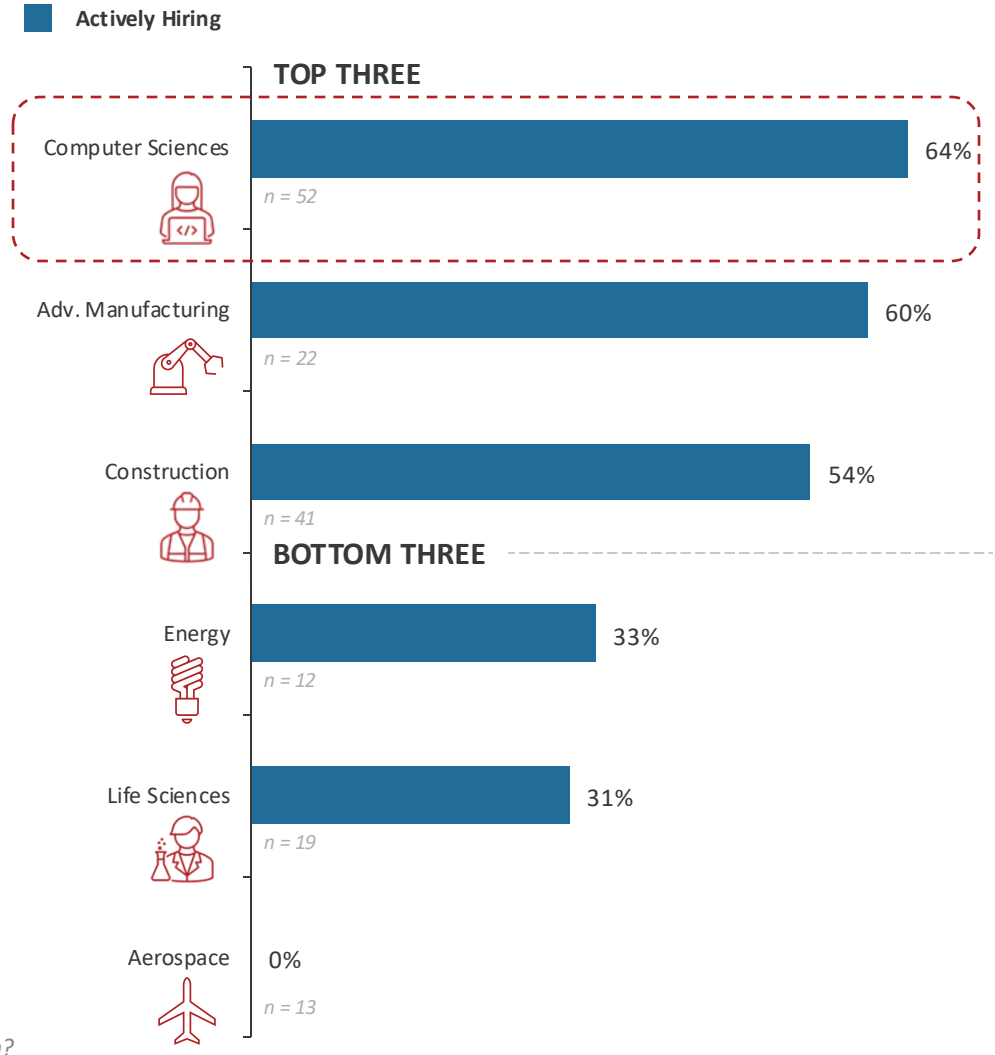
*n = 153; n = 135*




**INSIGHT:** Computer Sciences actively hire graduates with micro-credentials (64%) and ranks second in familiarity (85%). Financial Services leads in familiarity (87%) but lags in hiring (46%). **Raising awareness is crucial, but further research is needed to explain differences in industry adoption.**

## Industry Micro-credential Seeking Rates

*By industry; of those who are aware of micro-credentials*




*Q21 - How familiar are you with micro-credentials and does your organization actively hire for them?*

# Micro-credentials are viewed favorably by industry in its hiring decisions and are seen as a more adaptive solution to filling skill gaps than traditional accreditation processes.

## Influence of Micro-credentials in Hiring Decisions

Employers with awareness

*n = 378*

Micro-credentials in **relevant hard skills** are a good indicator of subject matter proficiency.

Having a micro-credential favorably impacts my hiring decisions.

Micro-credentials in **relevant durable skills** are a good indicator of subject matter proficiency.

*"Communicate that you need C++ for instance, and* ***[the independent accreditation board] will hear that and create micro-credentials right away…*** *Higher ed is so slow to act and get accreditation… You can get much faster response to what the private sector needs this way."*

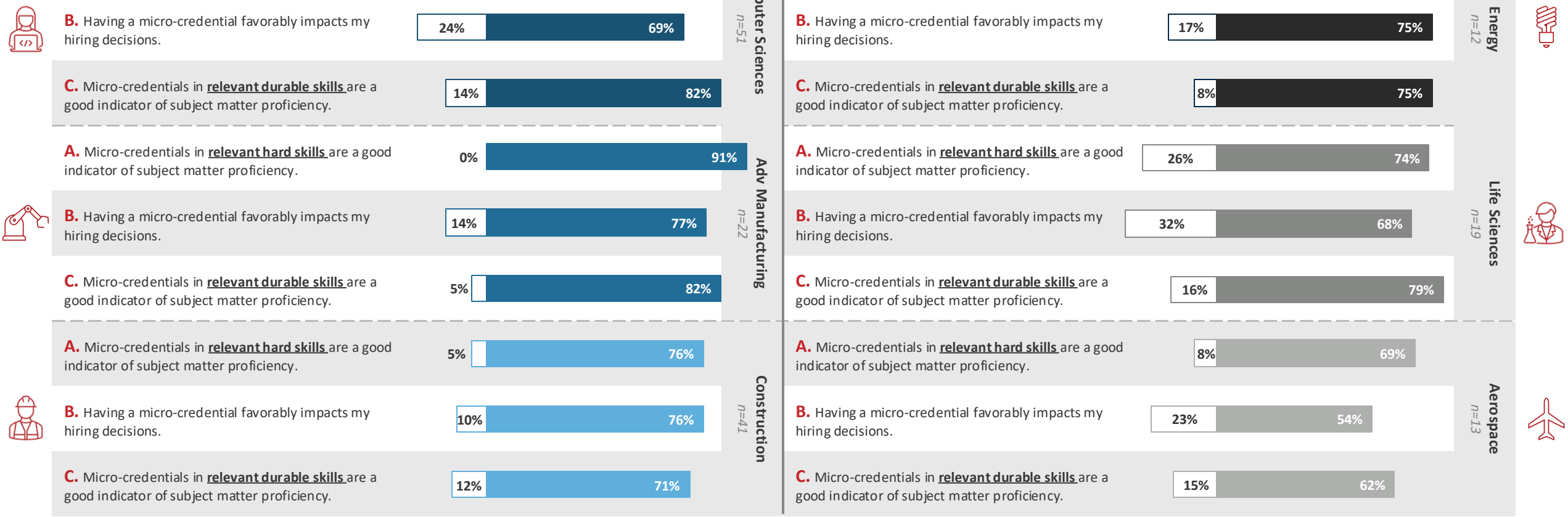
*Q22 - Please indicate how much you agree with the following statements regarding micro-credentials.*

# Industries actively seeking micro-credentials are more likely to view them as indicators of proficiency and consider them positively in hiring decisions.

## Micro-credentials in Hiring Decisions, By Industry

Those actively hiring for micro-credentials

*n = 378*



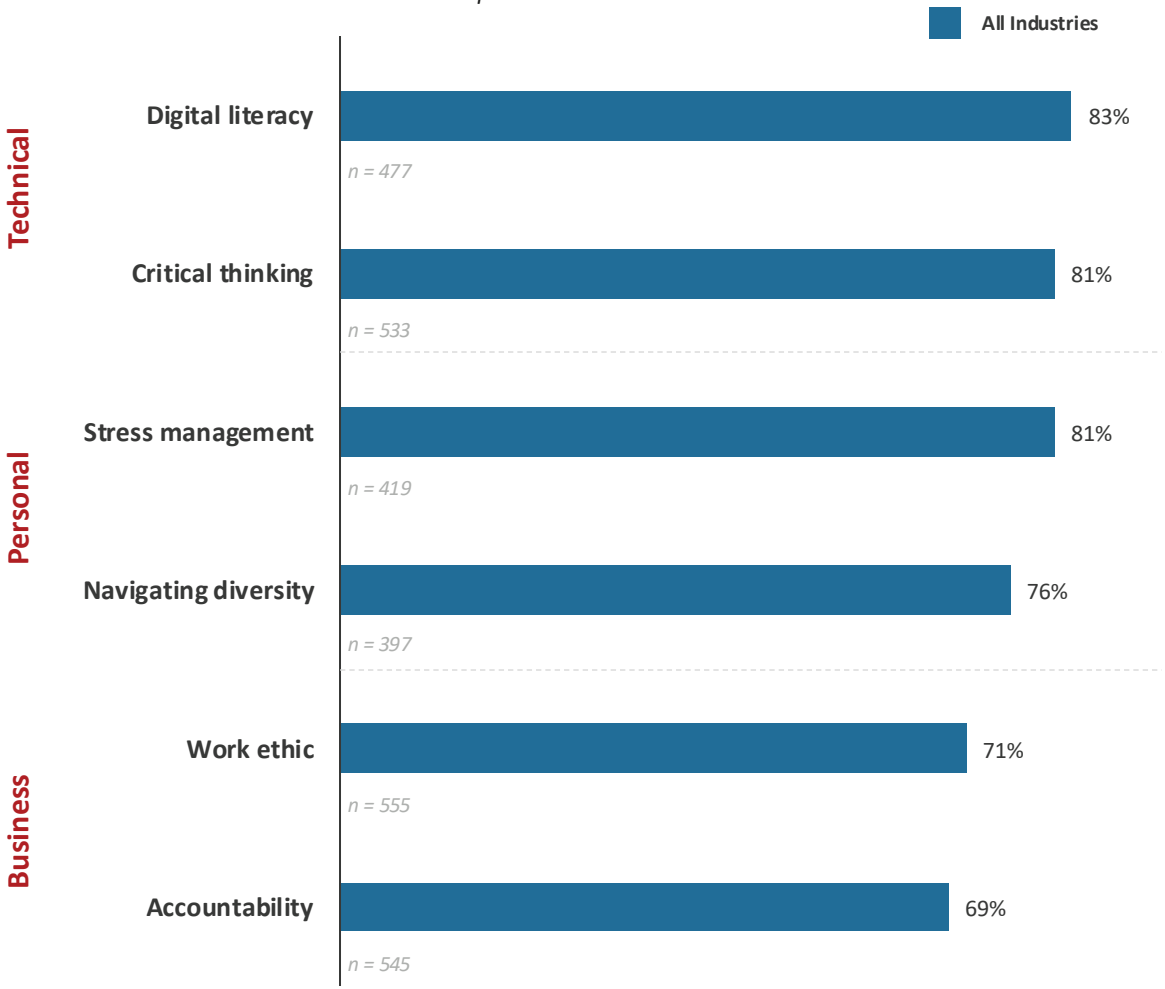

*Q22 - Please indicate how much you agree with the following statements regarding micro-credentials.*

# Industry anticipates a rising demand for digitally-skilled graduates who are capable in durable skills like stress management, critical thinking, and work ethic.

## Top Future Non-industry Specific Skill Needs

All industries, top 2 skills by category

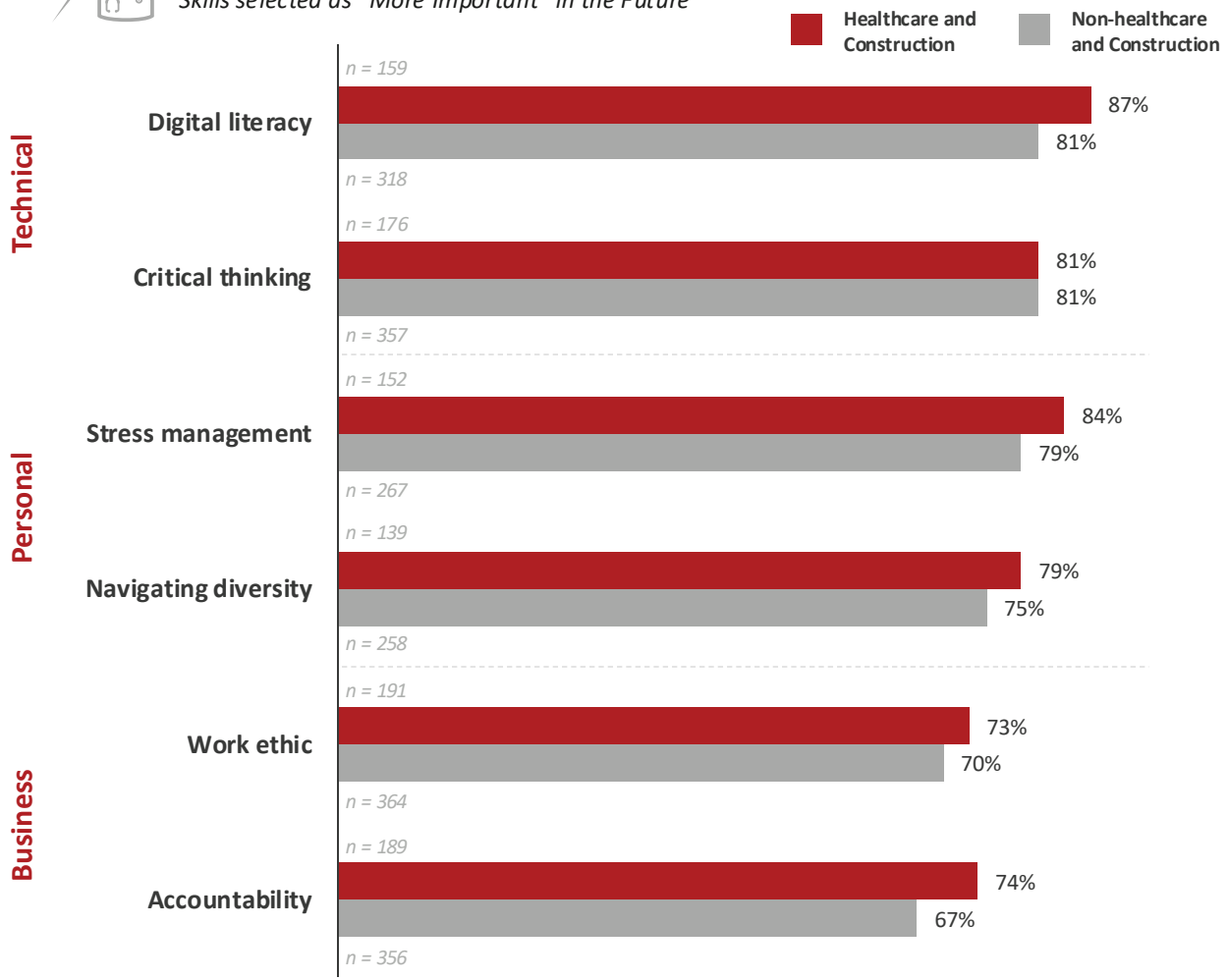
*Skills selected as "More Important" in the Future*




## Top Future Non-industry Specific Skill Needs

Healthcare and Construction* vs. Other Industries, top 2 skills by category

*Skills selected as "More Important" in the Future*




Cicero

*Q32 - You indicated previously that the following skills are valuable to your industry. Compared to today, how important do you believe these skills will be for your industry 5 years from now?*

**As healthcare and construction had the largest sample sizes, they are shown here to give context for how they have weighted the results for all industries*

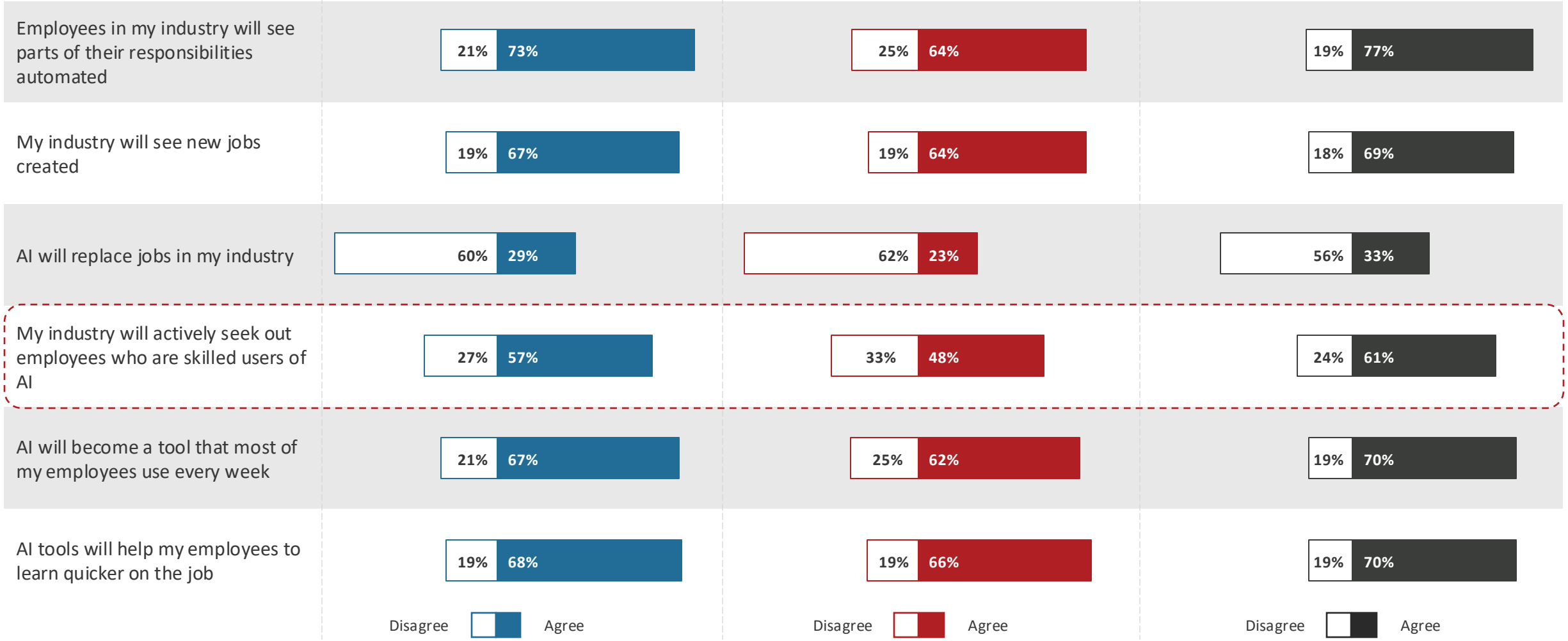
# AI is anticipated to become integral across industries without broadly replacing jobs, though healthcare and construction are less likely to seek graduates skilled in AI.

**Future Impacts of AI on the Workforce**

**All Industries**
*n = 603*

**Healthcare and Construction**
*n = 208*

**Non-healthcare and Construction**
*n = 395*




Cicero

*Q35 - Please indicate how much you agree with the following statements regarding the future impacts of AI on your industry.*
**As healthcare and construction had the largest sample sizes, they are shown here to give context for how they have weighted the results for all industries.*

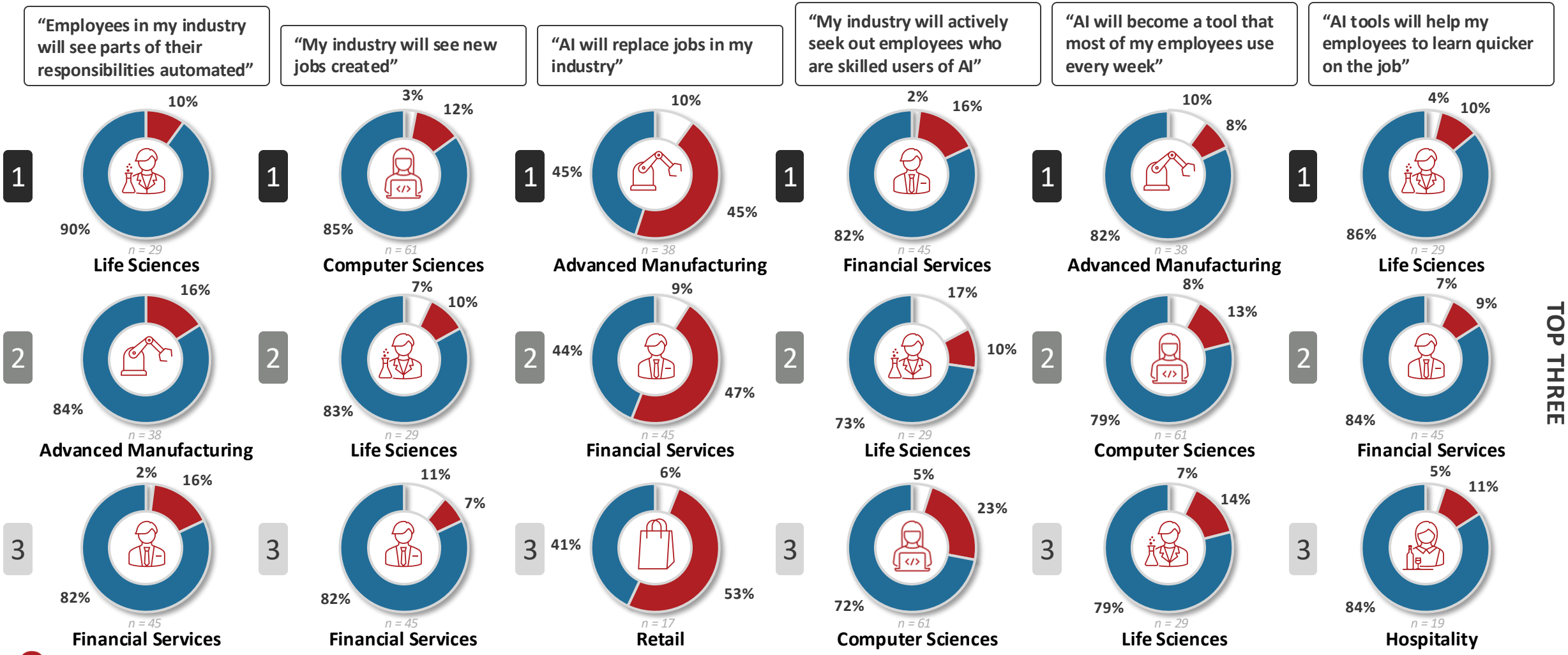
# Life Sciences, Advanced Manufacturing, Computer Sciences, and Financial Services are the most impacted by AI, anticipating disruption through automation, new jobs, and upskilling.

## Future Impacts of AI on the Workforce, By Industry

Top three industries; by % who agree

*n counts listed by each industry*

Agree | Disagree | I don't know




*Q35 - Please indicate how much you agree with the following statements regarding the future impacts of AI on your industry.*

# *Work-Based Learning*

# WORKFORCE ALIGNMENT STUDY | Work-Based Learning Overview

## Work-Based Learning Section

**ABOUT**: This section summarizes survey findings on Utah employers' perceptions of recent graduates' readiness for the workforce. **It emphasizes the importance of experiential learning through work-based opportunities,** detailing the types of such experiences available and identifying barriers to expanding them.

The survey analyzed employer responses to questions about the interplay between education and experience in hiring decisions. Employers rated statements like, "I prefer to hire candidates with job skills over educational credentials," and "A college education is necessary to obtain a good-paying job with advancement opportunities." **These responses provide insight into how employers value higher education and practical experience.**

Employers also reported on the work-based learning opportunities they offer and the value they place on each. This analysis highlights the prevalence of these opportunities, and **their perceived success in preparing graduates** as compared to other work-based learning opportunities.

Lastly, employers identified the most significant challenges to providing more work-based learning opportunities. **These findings highlight opportunities for USHE and TRU to further improve the collaboration between higher ed and industry** in offering work-based learning.

Findings are segmented by the largest industry clusters, healthcare and construction, against all other industries, highlighting areas where certain sectors diverge from broader trends. Additionally, notable quotes from the qualitative interviews and free-response sections were added to give context to quantitative findings. These insights offer a detailed and actionable perspective on how higher education can better prepare graduates for the evolving demands of Utah's workforce.

# Industry prioritizes experience due to rapidly evolving skill needs; higher education should focus on helping graduates gain experience during school over having cutting-edge skills.

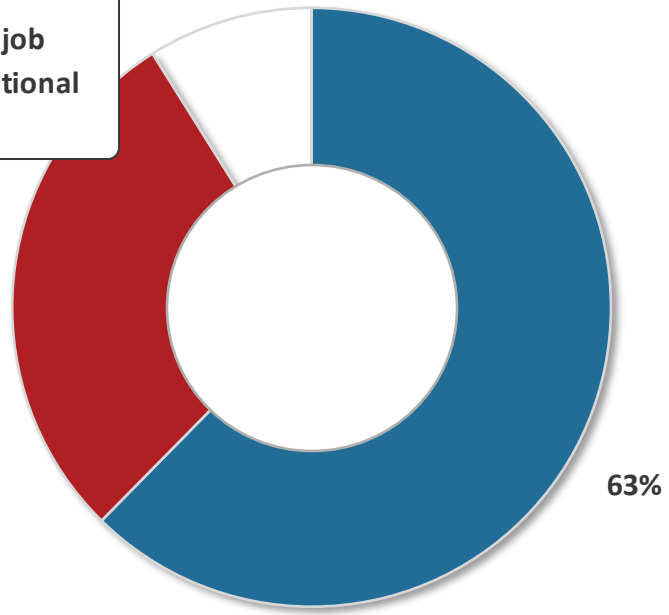


## Industry Preferences in Hiring

All groups

*n = 603*

"I prefer to hire candidates with job skills over educational credentials."




- Agree
- Disagree
- I don't know

## Industry Preferences in Hiring

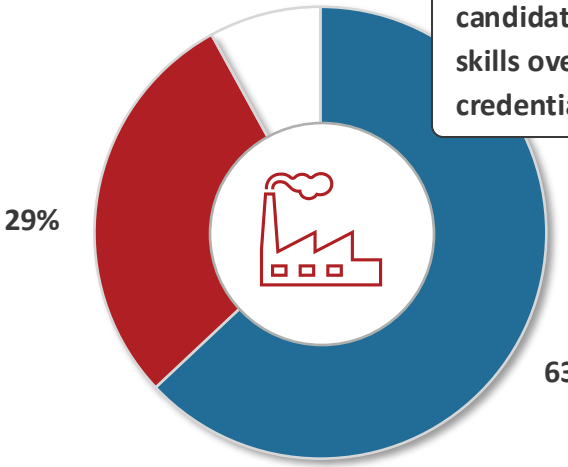
Healthcare and Construction vs. Non-healthcare and Construction

*n = 603*

*"The technology is moving so fast, that we have to start all over again teaching them. The technology is 2-3 years behind."*

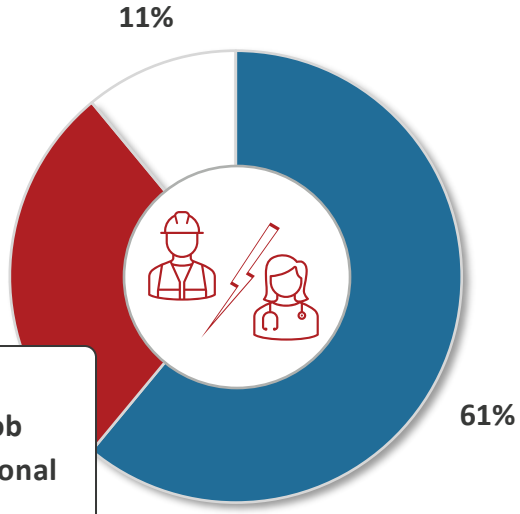
**- Employer in Advanced Manufacturing**

"I prefer to hire candidates with job skills over educational credentials."




*n = 395*

**Non-healthcare and Construction**




*n = 208*

**Healthcare and Construction***

**INSIGHT:** Regardless of industry, **employers are seeking experienced candidates among recent graduates.** This is universal, including industries as disparate as construction, hospitality, and computer sciences.

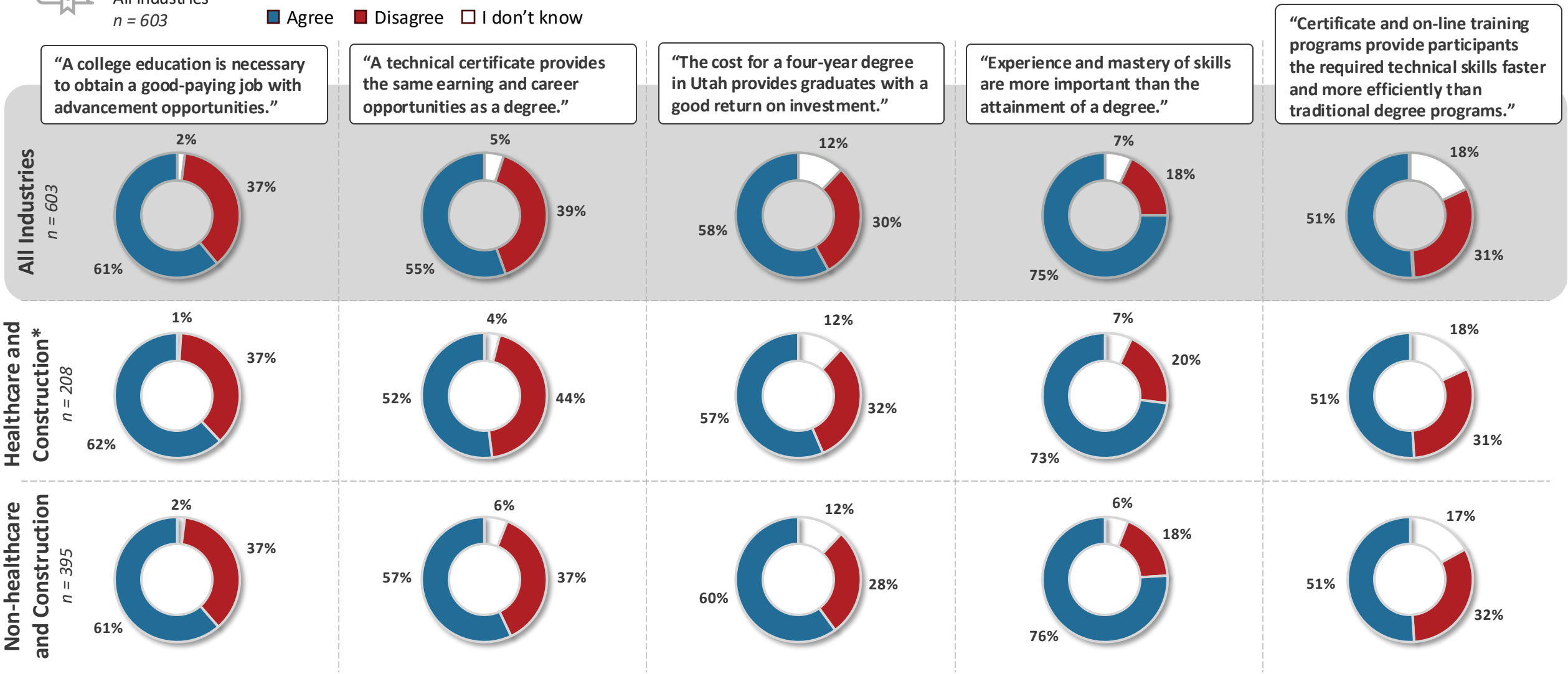
*Q34 - Please indicate whether you agree or disagree with each of the following statements regarding hiring in your industry.*
**As healthcare and construction had the largest sample sizes, they are shown here to give context for how they have weighted the results for all industries.*

# A college degree in Utah is valuable for future opportunities; however, there is growing industry interest in other learning paths, including experience, certificates and online trainings.

## What's the Value of a College Education

All industries
*n = 603*

Agree | Disagree | I don't know




*Q22a - Please indicate if you agree or disagree with each of the following statements on the perceived value of an education in Utah.*
**As healthcare and construction had the largest sample sizes, they are shown here to give context for how they have weighted the results for all industries.*

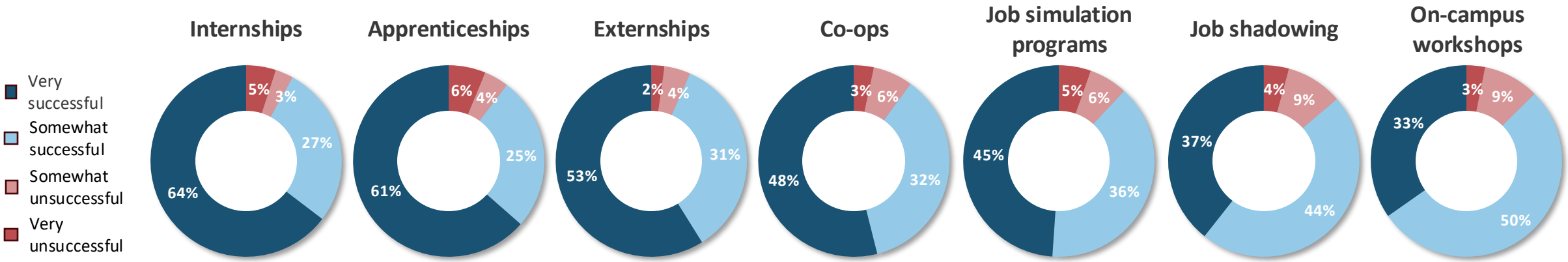
# Internships are the most common and successful form of work-based learning (WBL); however, other opportunities are not leveraged as often even when they are successful.

## Work-Based Learning Offerings and Success

All industries
*n = 603*

**INSIGHT:** Internships lead in prominence by 28% and 45% respectively over the next two most effective work-based learning opportunities. This shows that while WBL opportunities are critical to graduate success, **opportunities outside of internships are not being fully leveraged.**

**"How successful are these opportunities at preparing graduates for the workforce?"**




| My organization offers this | | | | | | |
|---|---|---|---|---|---|---|
| | 78% | -28% | 50% | -17% | 33% | 23% | 30% | 54% | 38% |

Cicero

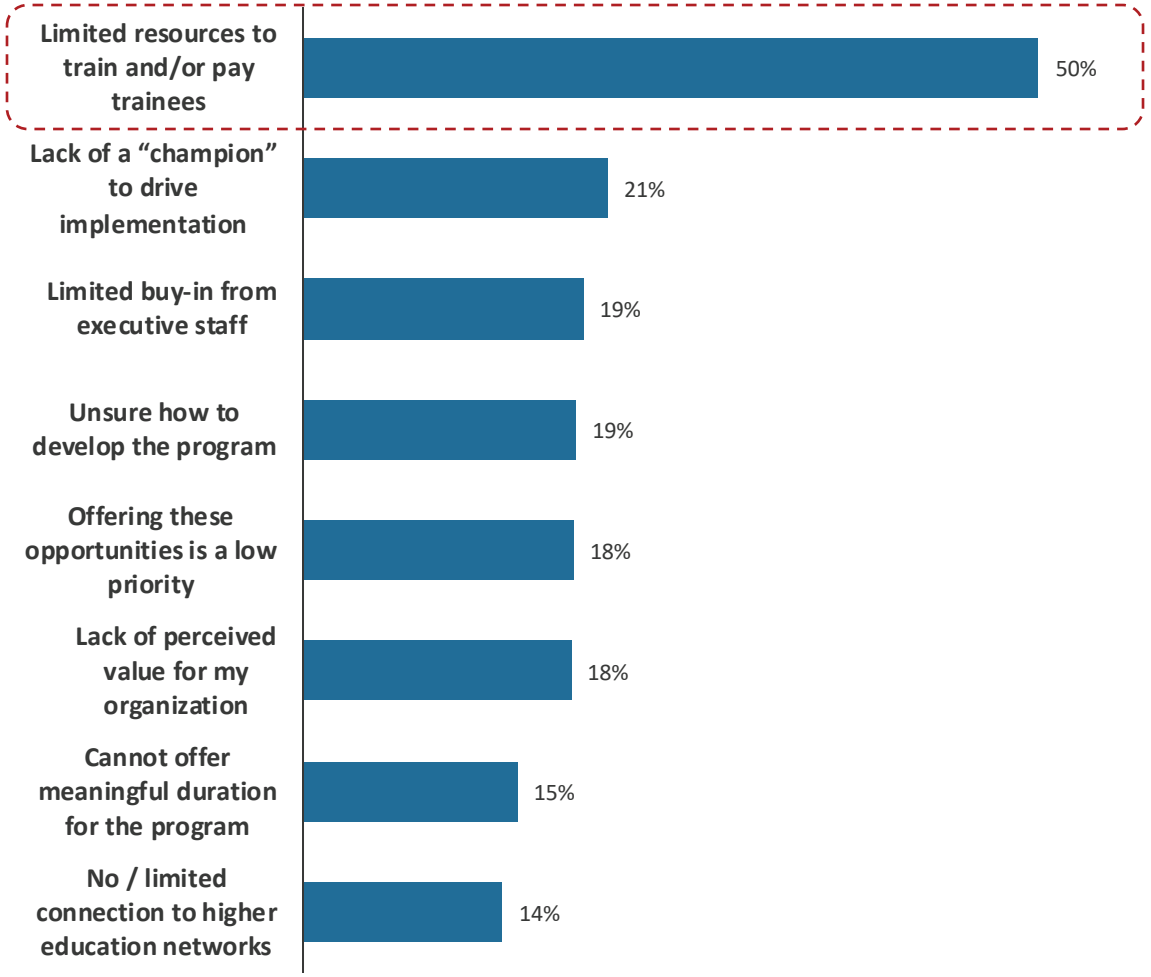
*Q23 - What kinds of work-based learning opportunities does your organization provide for students before they graduate?*
*Q24 - How successful are these opportunities at preparing graduates for the workforce?*
**"Don't know" has been omitted from answer set*

# Limited resources to train and pay trainees constrains industry from offering more WBL; promoting and supporting current programs is essential to success.

## Obstacles Preventing Industry from Offering More WBL

All industries

*n = 603*




## Workplaces Lack Standardization for Work-Based Learning

- **Industry values internships when making hiring decisions but often struggle to offer them** due to the time, resources, and the minimal immediate benefits involved.
- As a result, **student work programs can become inconsistent, unstructured, and/or eventually discontinued**, limiting students' preparation.
- Developing formal processes and documentation to set clear expectations has been effective in enabling internship opportunities in workplaces.
- **Higher ed could take the lead in managing these efforts to free up workplace resources** and for better program consistency.

## "We don't need new ideas, but better promotion of current successes."

- Programs like "Custom Fit", or "Track" for high school students, in Utah have been widely regarded as successes for participating institutions and industries, **however employers remark these still seem relatively unknown in the state**.
- A greater promotion of the success of these programs and broader enrollment could go a long way to boosting graduates' preparedness through greater access to work-based learning, especially in Utah's technical colleges.

*Q26 - What are the main obstacles that prevent you from offering more work-based learning opportunities?*
*Source: Expert interviews*

# *Partnerships*

# WORKFORCE ALIGNMENT STUDY | Partnerships Overview

## Partnerships Section

**ABOUT**: This section summarizes the survey findings on Utah employers' perceptions of collaboration between industry and higher ed. **It underscores the perceived strength of these partnerships, highlights current activities for collaboration, and identifies challenges preventing greater alignment.**

This section outlines **employers' evaluations of the strength and importance of industry-higher ed partnerships in Utah**. Employers provided insights into the perceived effectiveness of these collaborations and their relative importance.

Additionally, the analysis assesses the effectiveness and frequency of specific partnership activities, **identifying key areas for improvement and opportunities for expanding these activities**.

Lastly, employers shared the barriers they encounter in fostering collaboration and partnerships. **Common themes and recommendations were summarized to propose actionable solutions for TRU and USHE to strengthen and expand industry-higher ed partnerships.**

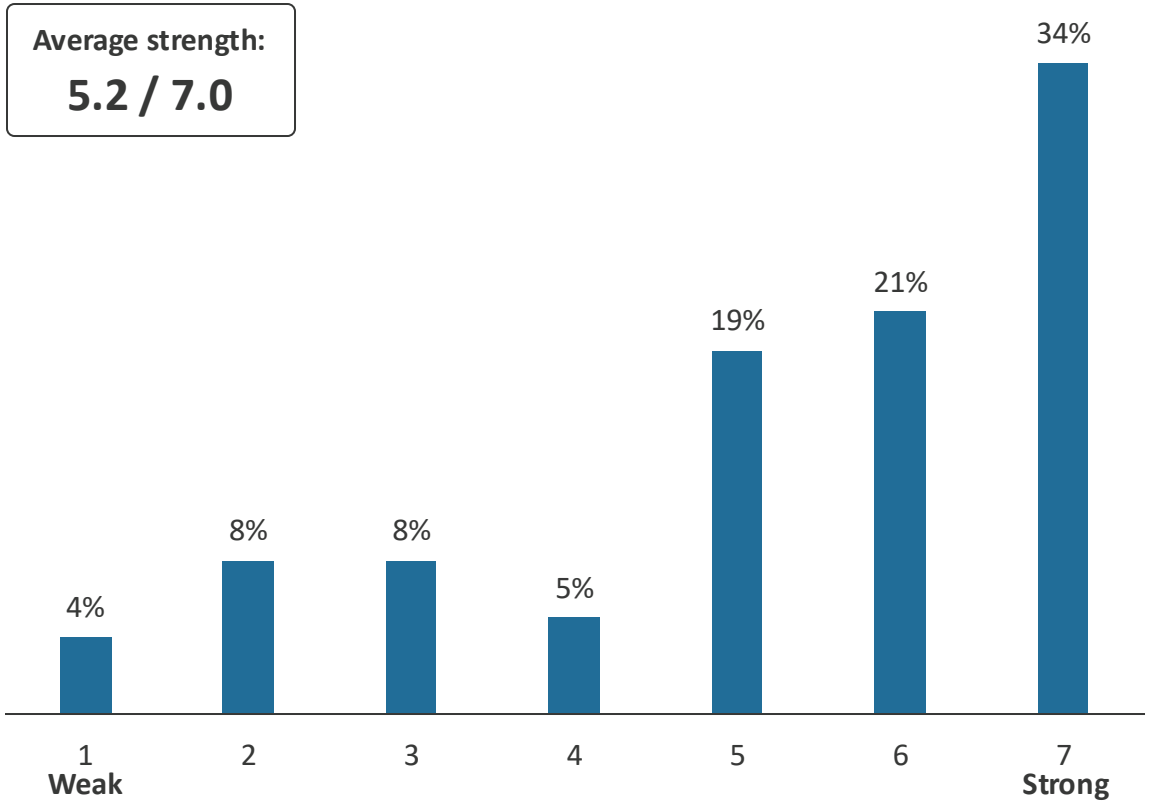
Findings in this section are reported in aggregate, and not segmented by industry, though a few callouts have been made were appropriate about specific industries. Additionally, findings from the qualitative interviews and free-response sections were summarized and added to give context to quantitative findings. These insights offer a detailed and actionable perspective on how higher ed can improve alignment with industry to better prepare graduates for the evolving demands of Utah's workforce.

# Industry partnerships are passable in Utah; however, it is clear they are not as strong as industry would like.

## Strength of Industry Partnerships

All industries
*n = 603*

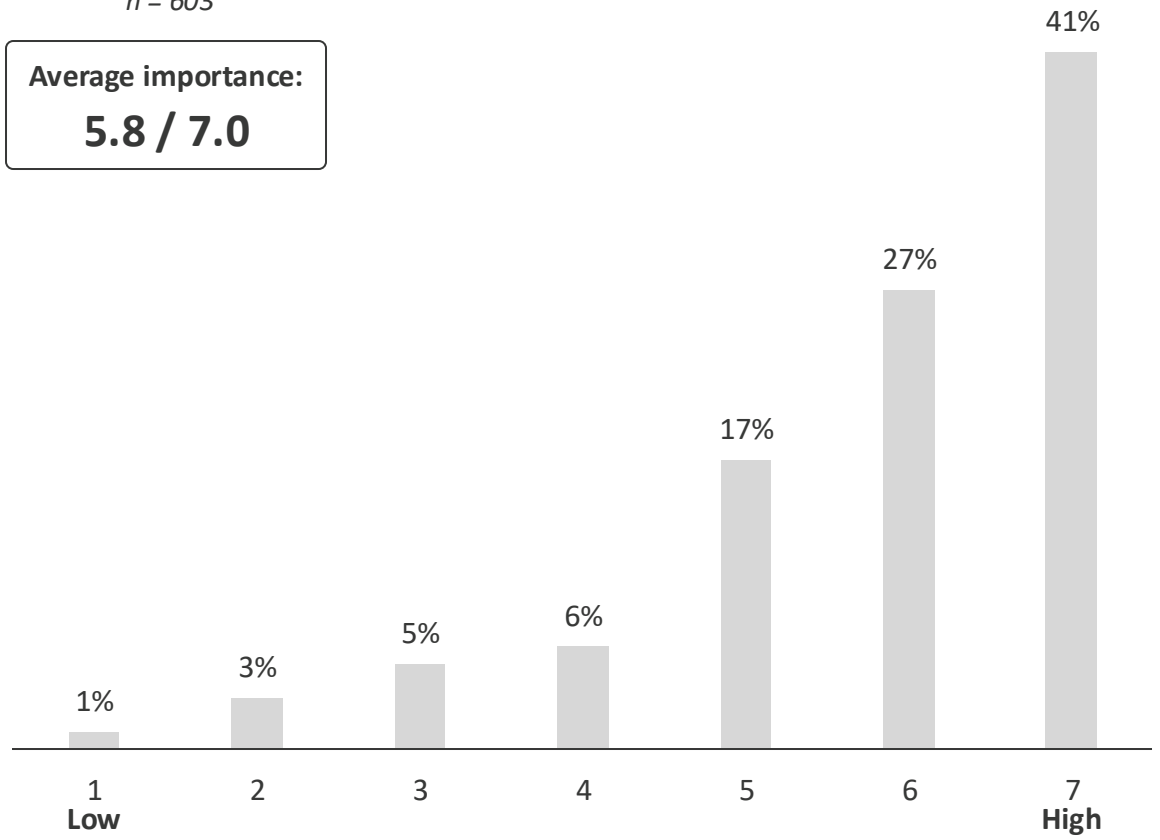
**Average strength:**
**5.2 / 7.0**




## Importance of Industry Partnerships

All industries
*n = 603*

**Average importance:**
**5.8 / 7.0**




**INSIGHT:** The Construction industry has only a mediocre relationship with higher ed in Utah, with an average score of 4.6 / 7.0. **Construction professionals find recent graduates' expectations for the industry aren't reflective of the reality on the job, resulting in hardship for both graduates and workplaces.** Greater collaboration between industry and higher ed through the fostering of work-based learning and updated curricula can be an effective way to overcome these challenges.

*Q30 - What is the current reality of partnerships between your industry and Utah's colleges and universities?*
*Overall, the level of partnerships between my industry and Utah's colleges and universities is…*
*For my industry, the importance of having strong partnership with Utah's colleges and universities is…*

# Work-based learning is the most common and successful partnership activity; industry also values class presentations and instruction, though these occur less frequently.

## Partnership Activities and Success

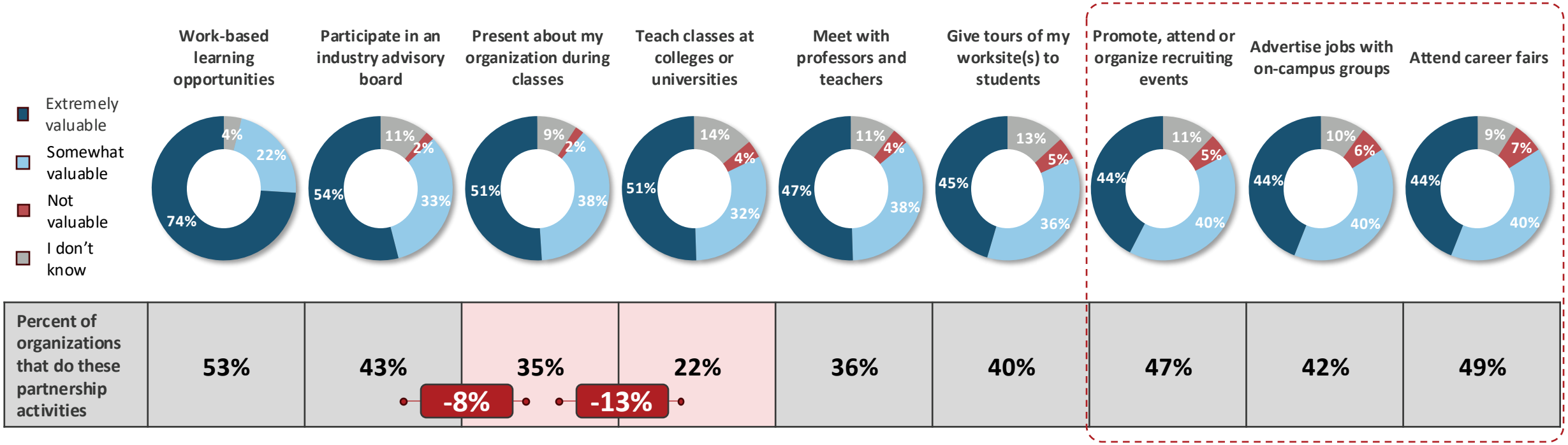
All industries

*n = 603*

**"How valuable are the following partnership activities with Utah's colleges and universities?"**

**INSIGHT: There is an opportunity to increase industry outreach on campus through class instruction and presentations**, which are the least common but the most valuable partnership activities after WBL opportunities and industry board participation.

**Some of the most common partnership activities with higher ed are the least valuable**, including career fairs, advertisements on campus and recruiting events.

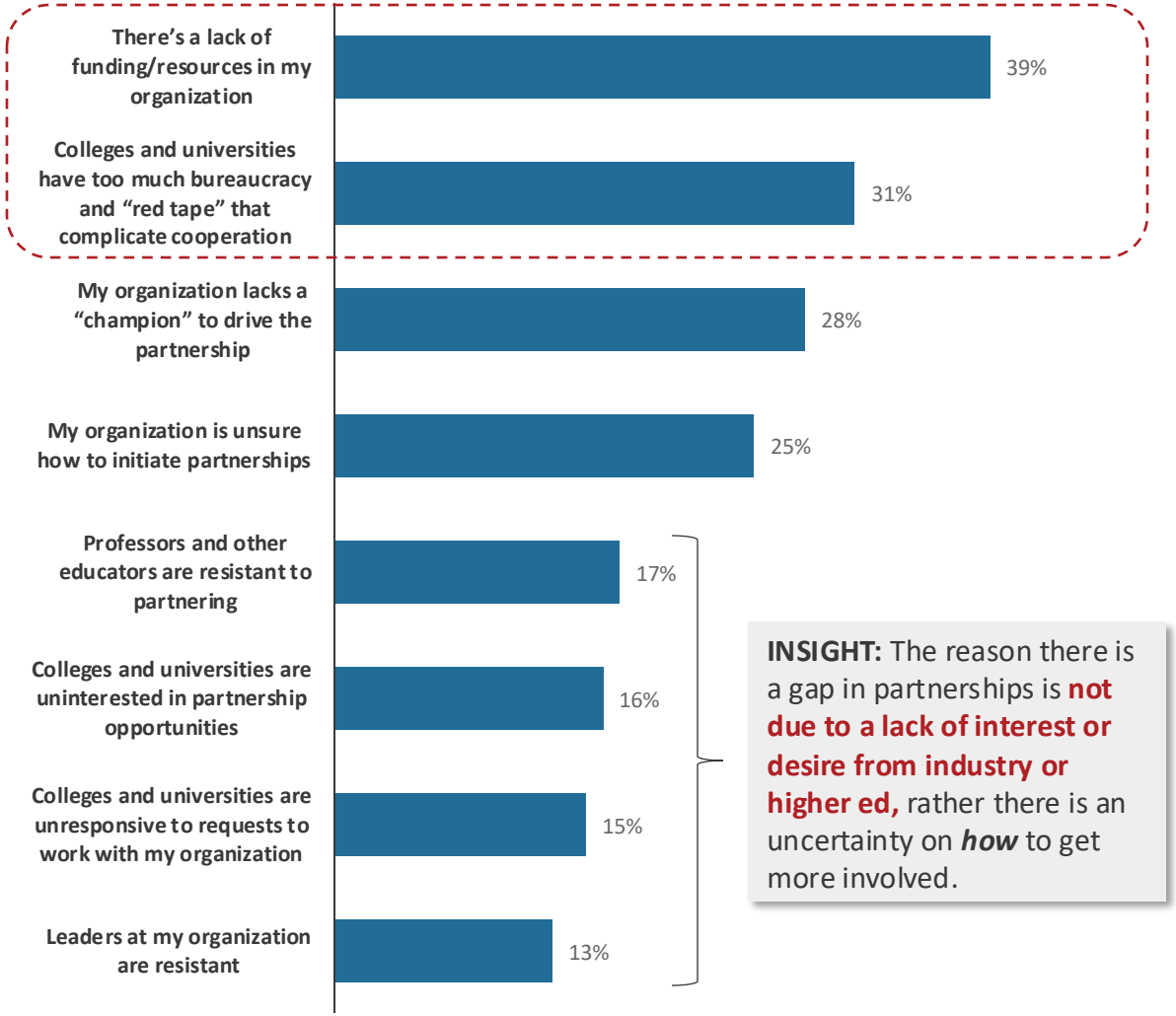


# Industry recognizes the largest barrier to partnering is internal funding, however higher ed can improve their processes to be navigable and simple for industry to engage.

## Obstacles to Industry-Higher Ed Partnerships

All industries

*n = 603*




**INSIGHT:** The reason there is a gap in partnerships is **not due to a lack of interest or desire from industry or higher ed,** rather there is an uncertainty on ***how*** to get more involved.

## Challenges with Communication Limit Cooperation

- Employers remarked they often felt unsure of who to talk to and when in order to collaborate with higher ed. This hesitancy and perceived difficultly engaging with institutions limits partnership opportunities.
- Additionally, communication can breakdown when staff at institutions turnover leaving employers unsure who to contact.

## Industry is Looking to Get into the Classroom

- When asked how higher ed and workplaces can better collaborate, employers mentioned a desire to get involved in the curriculum and the classroom directly.
- This would have the benefit of tailoring student skills to industry needs but must be balanced with educations goals of general education.
- However, many institutions do not currently support the level of partnerships that industry would want, often due to complex systems or policies.

*Q31 - What are the main obstacles that limit partnerships between your industry and Utah's colleges and universities?*

# *Utah vs. Out-of-State*

# WORKFORCE ALIGNMENT STUDY | Work-Based Learning Overview

## Work-Based Learning Section

**ABOUT**: This section examines Utah employers' evaluations of the quality of Utah graduates compared to those from other states. It includes **an analysis of the percentage of employers hiring out-of-state graduates across various industries, the factors driving these hiring decisions, and notable successes observed in other states.**

**Only employers who indicated they had hired enough out-of-state graduates to make informed comparisons** were asked subsequent questions about the quality of these graduates.

**Employers' perceptions of the performance of Utah graduates were compared to the performance of out-of-state graduates**, complemented by qualitative insights that elaborate on Utah's successes and the successes of other states.

The analysis also **highlights the primary reasons employers hire out-of-state graduates**, identifying areas where Utah's higher education institutions could improve while acknowledging factors that may be beyond their control.

Finally, the section **includes illustrative examples of successful initiatives and strategies from other states**, drawn from interviews, focus groups, and open-ended survey responses.

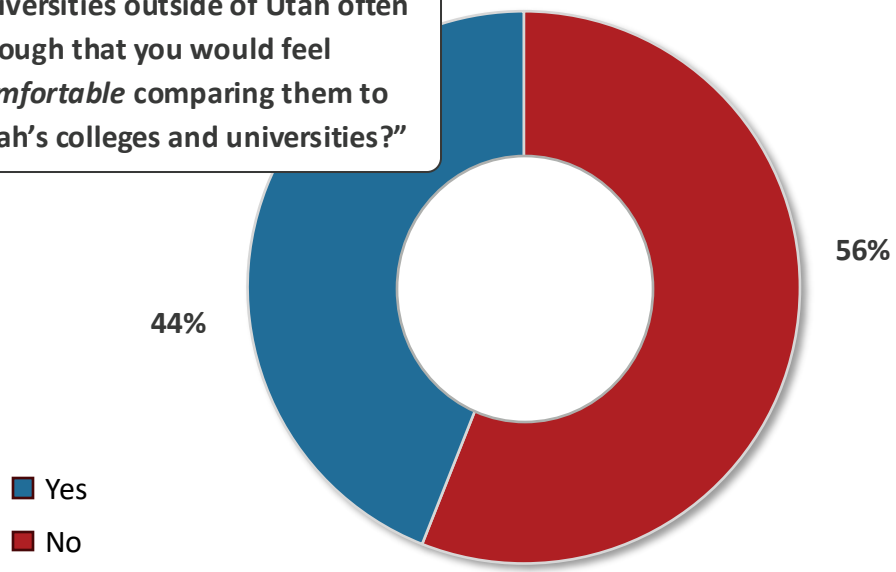
# Life and Computer Sciences do the most hiring outside of Utah as compared to other industries; meanwhile Construction and Advanced Manufacturing do the most hiring in Utah.

## Utah Employers Hiring from Out-of-State

All industries

*n = 603*

**"Do you hire from colleges and universities outside of Utah often enough that you would feel *comfortable* comparing them to Utah's colleges and universities?"**



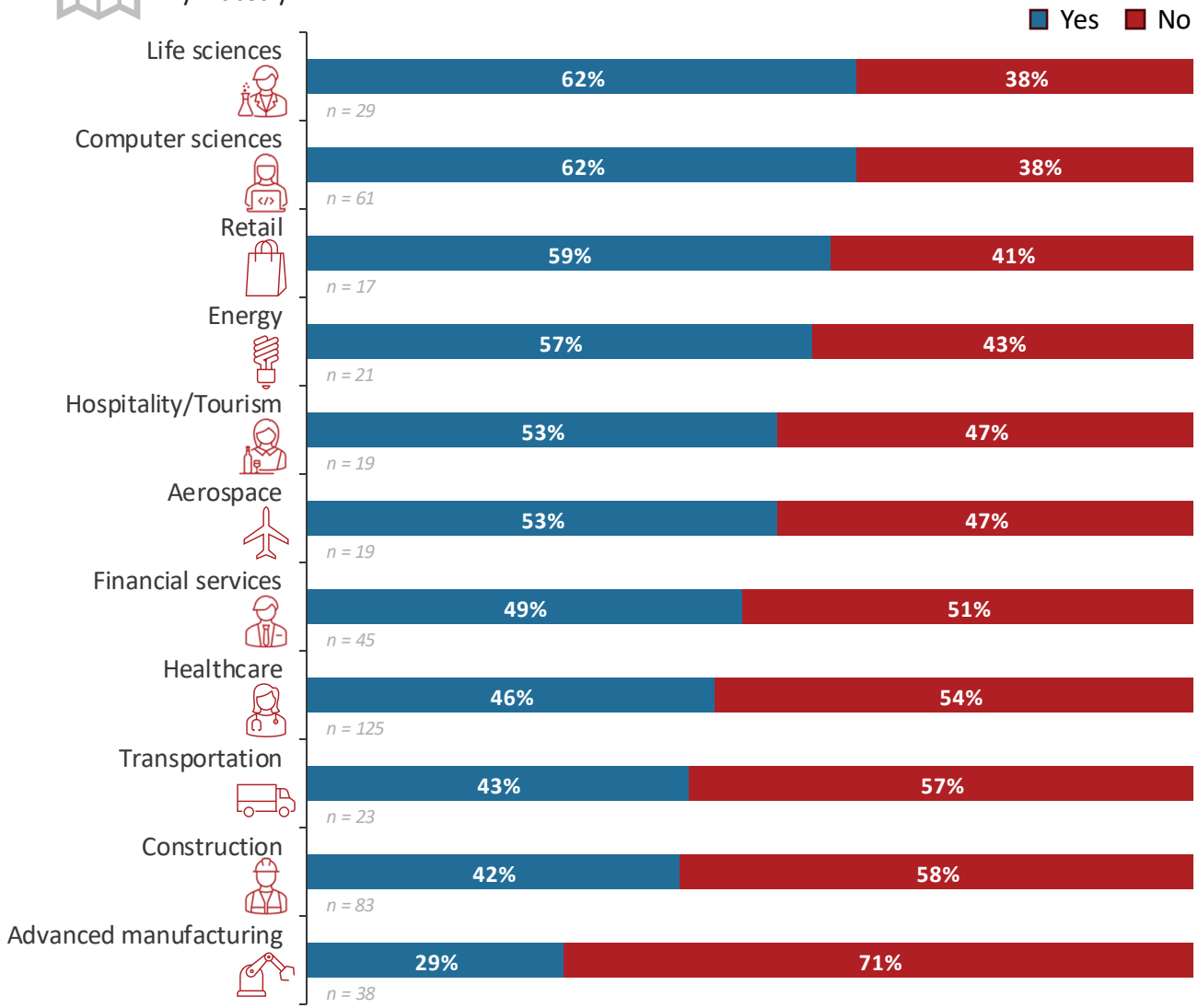

**INSIGHT:** Utah overall is evenly split between in-state and out-of-state hiring, but **industries like Construction and Advanced Manufacturing rely heavily on local hires, driving their interest in influencing curricula**.

*"The biggest problem is a lack of flexibility in updating curricula. I think neighboring states like Montana, Wyoming, and Idaho are faster at updating and improving their curriculum"*

**- Employer in Advanced Manufacturing**

## Industries that Hire from Out-of-State

By industry



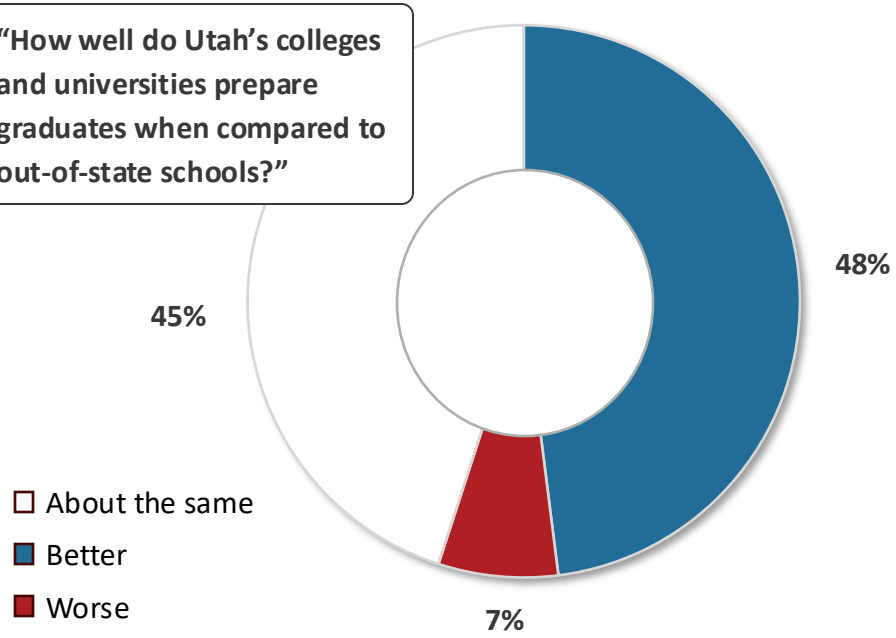

Q6 - Do you hire from colleges and universities outside of Utah often enough that you would feel comfortable comparing them to Utah's colleges and universities?

# Industry views Utah graduates similarly to out-of-state, but hires out-of-state due to logistical reasons like proximity, larger talent pools, and existing relationships outside Utah.

## Quality of Utah Graduates Versus Out-of-State Graduates

All industries
*n = 263*

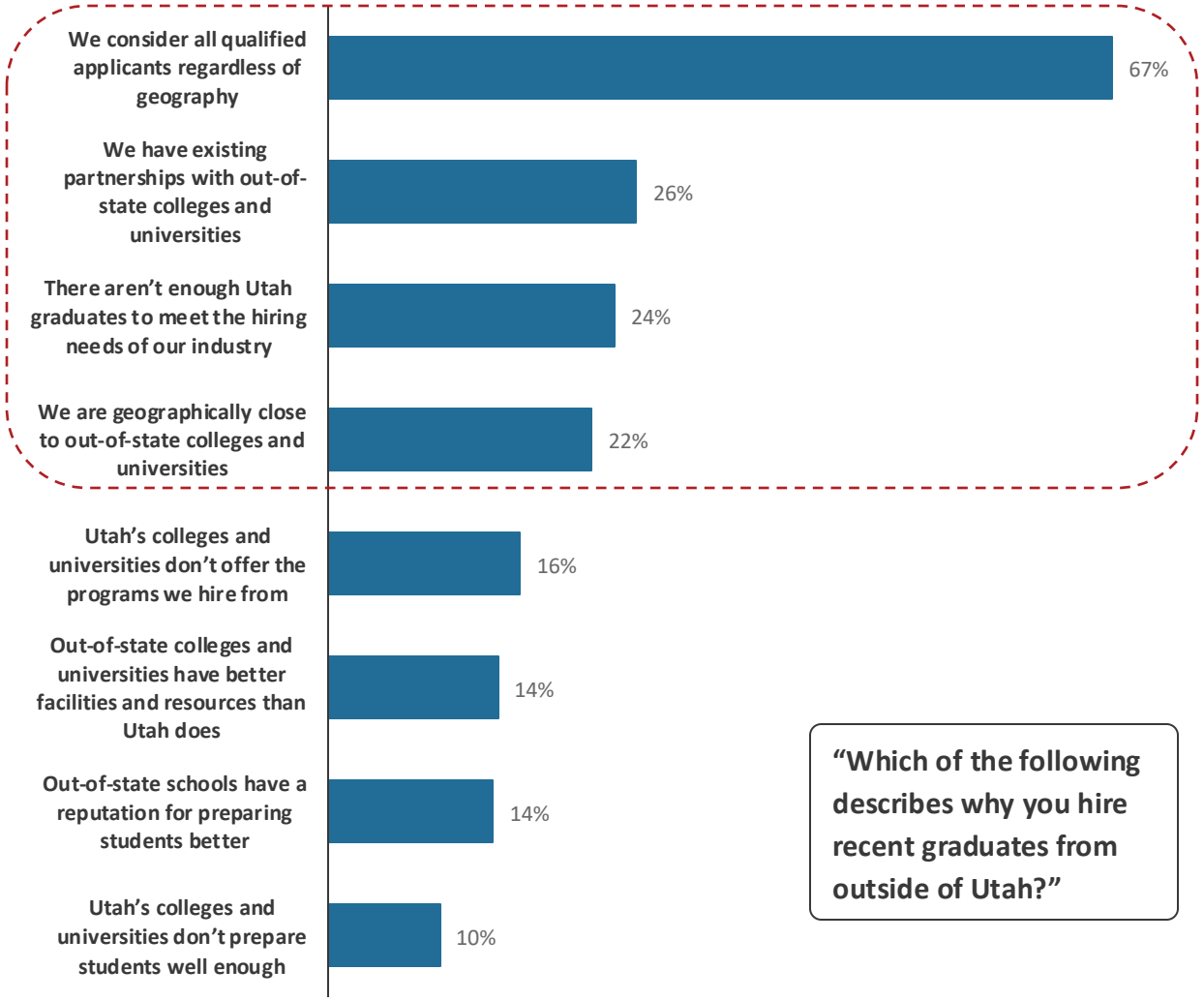
**"How well do Utah's colleges and universities prepare graduates when compared to out-of-state schools?"**




**INSIGHT:** Utah graduates are generally as well-prepared as those from other states, with many in industry even finding them better prepared. However, **industry often hires out-of-state graduates not due to quality concerns but because of abundance of qualified graduates nationally and because of established relationships** with non-Utah institutions.

## Top Reasons Industry Hires Graduates from Out-of-State

All industries
*n = 263*




**"Which of the following describes why you hire recent graduates from outside of Utah?"**

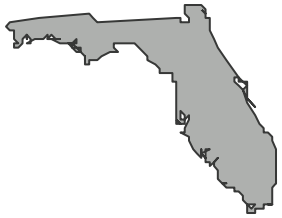
*Q18 - Which of the following describes why you hire recent graduates from outside of Utah?*
*Q19 - How well do Utah's colleges and universities prepare graduates when compared to out-of-state schools? When compared to out-of-state schools, Utah's colleges and universities prepare graduates…*

# Some states outside Utah have experienced success in areas that Utah's higher ed could learn from, including Idaho, Colorado, and Florida.

## Idaho Technical Colleges

### Locally Prepared Technical Graduates

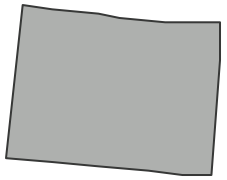
- Idaho's technical colleges produce competitive graduates thanks **to their strong connections with local businesses and specialized programs that meet regional needs.** This has given their graduates highly sought after skills in their local industries.
- In contrast, **Utah's standardized technical college curricula are seen as less aligned with workplace demands**. By allowing technical colleges to focus on their mission, including specialized hands-on learning and developing students for their local economies, technical colleges will be an even greater benefit to Utah and the businesses the rely on qualified technical graduates.



## Florida Accreditation Board

### Industry Driven Credentialling

- Florida has implemented an innovative approach to **strengthening ties between education and industry through an independent CareerSource board**. This board, composed of industry professionals, governs decisions on which credentials align with high-wage demand and updates the list annually using industry data.
- Consequently, education professionals can focus on administrating the credentialing programs.
- This independent model **encourages greater industry involvement, allows faster adoption of new credentials and the reduction of outdated skills, and ensures programs remain aligned with the state's workforce needs.**



## Colorado Engineering Programs

### Durable Skills Focused Engineering Management

- Colorado's engineering programs emphasize managerial competency, which industry values. Students are assessed on these skills, and the results are shared with industry, **producing graduates who excel in durable skills like human resource management**.
- The engineering and construction industries highlighted this approach as a key example of how other states better prepare graduates compared to Utah.

*Source: Expert Interviews*

# *Appendix – Interview Key Themes*

# WORKFORCE ALIGNMENT STUDY | Interview Key Themes

*The following insights come from interviews with industry leaders and key internal stakeholders.*

**Technical Competency**

Industry feels that graduates have room to improve but are **generally competent** and able to do the work for which they are hired. This is particularly true for **technical skills**, with which industry is generally satisfied .

**Graduate Maturity**

In general, graduates today are less mature than in the past, especially in areas such as **resilience and work ethic**. Industry sees opportunity for higher ed to play a **more active**, **intentional role** in developing students in these areas.

**Emphasis on "Durable Skills"**

**"Hire for culture, train for skill."** While industry does expect some level of on-the-job training, they do not expect that they can or will teach recent graduates the interpersonal skills required for being a solid employee, such as **effective communication** (both oral and written).

**Work-based Learning**

Internships and apprenticeships successfully prepare students for the workforce but are scarce because industry lacks capacity. There exists an opportunity for higher education to **design and promote internship programs** to connect more students with industry.

**Role of Partnerships**

Formal partnerships between industry and institutions facilitate work-based learning, but also provide opportunities for industry to **inform curriculum** and help institutions maintain alignment with industry needs, which leads to a **smoother transition** from education to employment.

**Earlier Industry Exposure**

Educating students on a wider variety of potential career paths early in their education journey is encouraged by industry; this will help to better match students to degrees and industries that fit their interests, as well as **build employee pipelines**.

# EXECUTIVE SUMMARY | Interview Key Themes

*The following insights come from interviews with industry leaders and key internal stakeholders.*

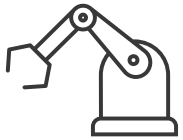
## Healthcare

**Skills:**

- **Graduates have the technical skills** to succeed in healthcare
- **The biggest challenges in skills are interpersonal skills** like communication; they complained of the rising rates of "ghosting" employers.
- **Recent graduates are confident in asking for what they need, but less receptive to hear what industry needs**, creating a one-way street. This goes for demanding flexibility, work-life balance, and promotions.
- Higher ed could help students **be less casual and more professional** in their talk, dress, etc.

**Partnerships:**

- **Partnerships are of immense value to industry**. They particularly value getting into the classroom and teaching what they need to students
- **There are often poor "hand offs"** when higher ed faculty and staff transfer positions, leaving industry in the lurch about who to contact about WBL or partnerships
- There is room to **improve communication about forecasting industry's hiring needs**, especially regarding what degrees students are attaining.



## Advanced Manufacturing

**Skills:**

- **Graduates are often behind in using necessary tools like CAD software, CNC machining, and advanced technologies like robotics and automation.** This gap requires industry to retrain new hires to get them up to speed but could instead be done at educational institutions.
- **Communication, teamwork, and in-person interaction are seen as major weaknesses.** Graduates lack basic professional communication skills, leading to poor performance in collaborative settings.
- Students often have unrealistic expectations about working hours, promotions, and salary.

**Partnerships:**

- **Higher ed is not keeping up with the rapid advancements in technology in advanced manufacturing,** and their curricula are often outdated, lagging by 2-3 years.
- **Other states more current than Utah.** Idaho, Wyoming, and Montana were all mentioned as examples of states where technical colleges stay up to date and connected to industry better than Utah.
- **SLCC was named as a standout example** in being committed and helpful in preparing students for work in advanced manufacturing.

# EXECUTIVE SUMMARY | Interview Key Themes

*The following insights come from interviews with industry leaders and key internal stakeholders.*

## Construction

**Skills:**

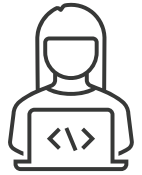
- **The idea of "working smarter, not harder" doesn't always apply.** Sometimes hard work is necessary to build the knowledge to work smart.
- **There's a shortage of graduates with software skills,** particularly AutoCAD and drafting skills, prompting firms to hire promising candidates and send them back to technical schools afterwards to provide specialized training.
- **Graduates often expect leadership and management roles without sufficient skills or experience,** misunderstanding that leadership abilities are built through time and practical experience, not education.

**Partnerships:**

- **Higher ed often over-promotes larger industries or organizations.** Smaller firms struggle to find talent, and even large firms in niche industries. This is often exacerbated by industry boards that are too narrow in their focus and don't represent these companies.
- **Industry professionals want more involvement in the classroom,** such as guest lecturing or serving as adjunct professors, to ensure students learn relevant workplace skills.

**Work-Based Learning:**

- **Creating meaningful work-based learning experiences is difficult, but critical for developing the workforce.** Internships vary in quality across companies, often driven by the reality that a semester or summer is too short a time frame to contribute meaningfully to a project. Industry expressed interest in standardized programs and trainings to boost efficacy of internships.



## Technology

**Skills:**

- **Graduates are overly reliant on learning-on-the-job opportunities, and generally weak in their technical skills.** This gap causes the industry to compete for talent amongst existing talent, and not see educational institutions as a talent pool for recruitment.
- **Graduates often have mismatched or outdated skills.** Due to the rapidly changing nature of the tech sector, skill sets are often outdated or mismatched with what the industry needs. To add complexity, there is still demand for older languages like C++ alongside new skills like cloud computing.

**Partnerships:**

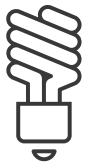
- **Florida separates the decision-making around credentials from the education system.** An independent career source board, composed of industry professionals, defines and annually updates the list of credentials for high-demand skills.
- **Boards facilitating communication with the private sector need to be approachable.** Often, private sector feels unheard in educational circles and intimidated by government and won't make the effort to engage.

**Work-Based Learning:**

- **Tech colleges succeed by focusing on their mission to provide practical training.** The role of tech colleges in providing hands-on experience is different than that of 4-year institutions, and tech colleges see greater success when they can focus on that mission.

# EXECUTIVE SUMMARY | Interview Key Themes

*The following insights come from interviews with industry leaders and key internal stakeholders.*



## Energy

**Skills:**

- **Work ethic:** Many new hires lack initiative and expect simple jobs, which conflicts with the demands of the energy industry.
- **Problem-solving skills:** Technical employees struggle with troubleshooting equipment and finding solutions independently.
- **Hands-on experience:** Engineers, particularly electrical engineers, are proficient in theory but lack practical experience applying knowledge in real-world settings.
- **Mathematical skills:** Graduates often struggle to apply basic math concepts (e.g., steam calculations or power conversions) to real-world scenarios.

**Partnerships:**

- **Limited industry-academic collaboration:** Relationships with universities are underdeveloped but starting to improve through activities like tours and outreach.
- **Increasing Rural focus:** Recruiting graduates for rural areas is challenging, requiring early engagement with students accustomed to rural life.
- **Potential improvements:** Expanding tours, internships, and partnerships with technical schools would increase awareness and engagement with the energy industry.
- **Legislative efforts:** The industry is collaborating with the state on an energy education and workforce development task force to promote K-12 and technical education alignment.

**Work-Based Learning:**

- **Internships and apprenticeships:** More internships are needed, especially in technical roles like linemen, to improve hands-on skills.
- **Lineman training:** There are few in-state programs, forcing candidates to seek certification out of state (e.g., Idaho, Nevada). Expanding these programs locally would help.
- **STEM connection:** Early exposure to technical and manual skills can foster work ethic and interest in relevant fields.

# *Appendix – Skill Breakdowns*

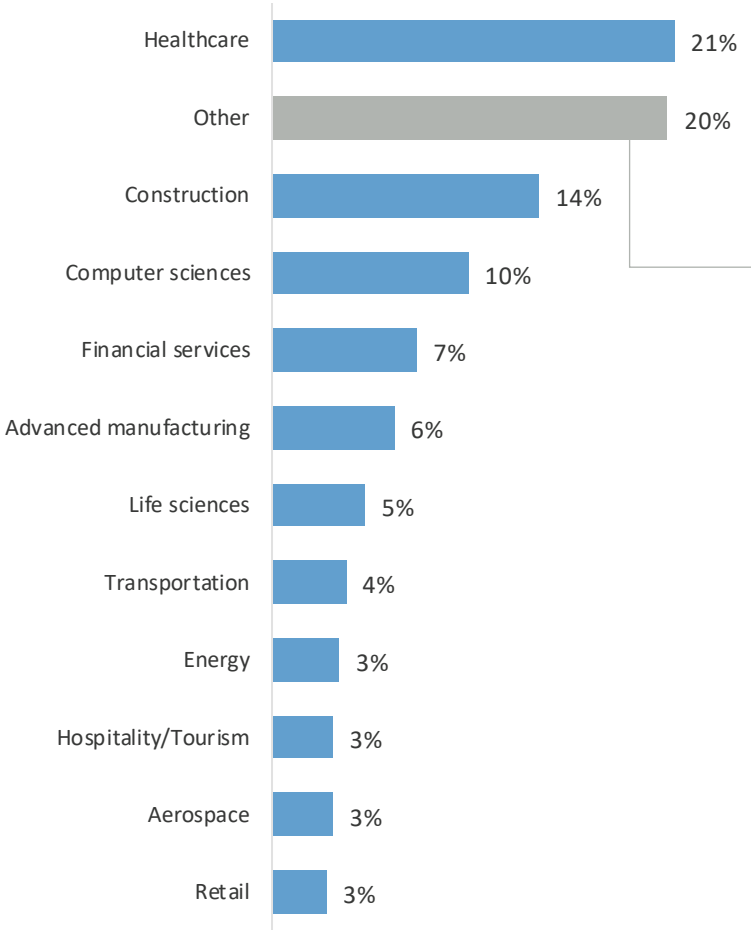
# *Survey Demographics*

# Insights represent a Utah broadly, including a wide variety of industries, geographies, organization sizes, and experience.

## Survey Respondents

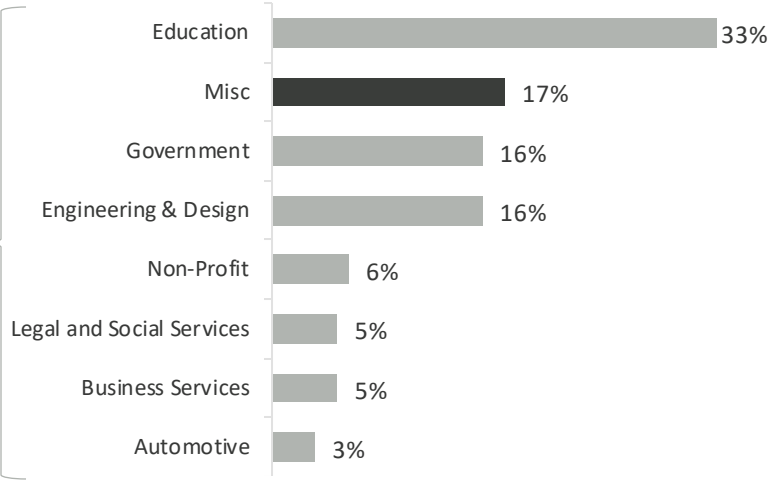
*Total Sample; n=603*

### Industry

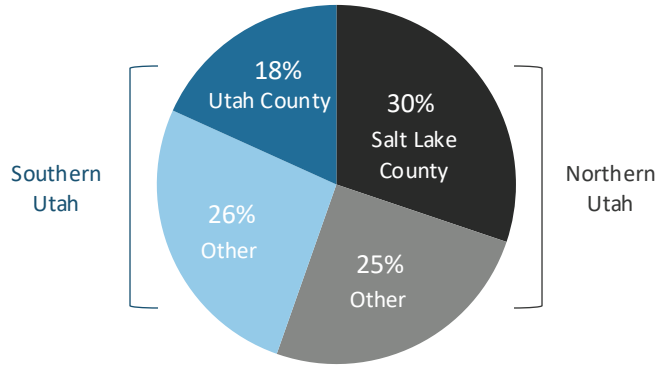



### "Other" Industry

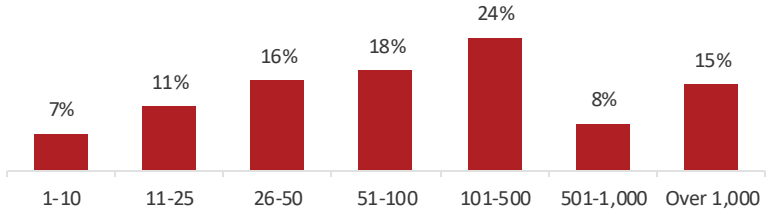
*n=125*



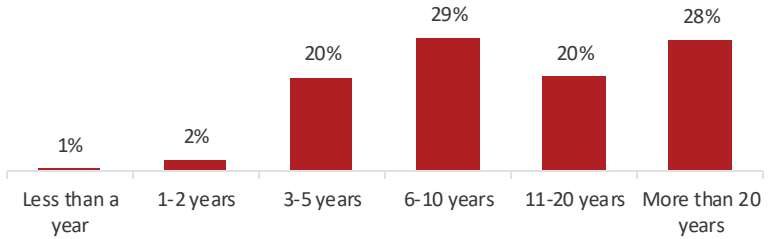

### Geographic Distribution



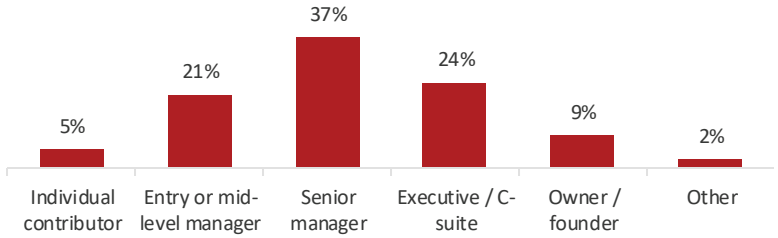

### Organization Employee Count




### Respondent Years of Experience




### Respondent Seniority Within the Organization



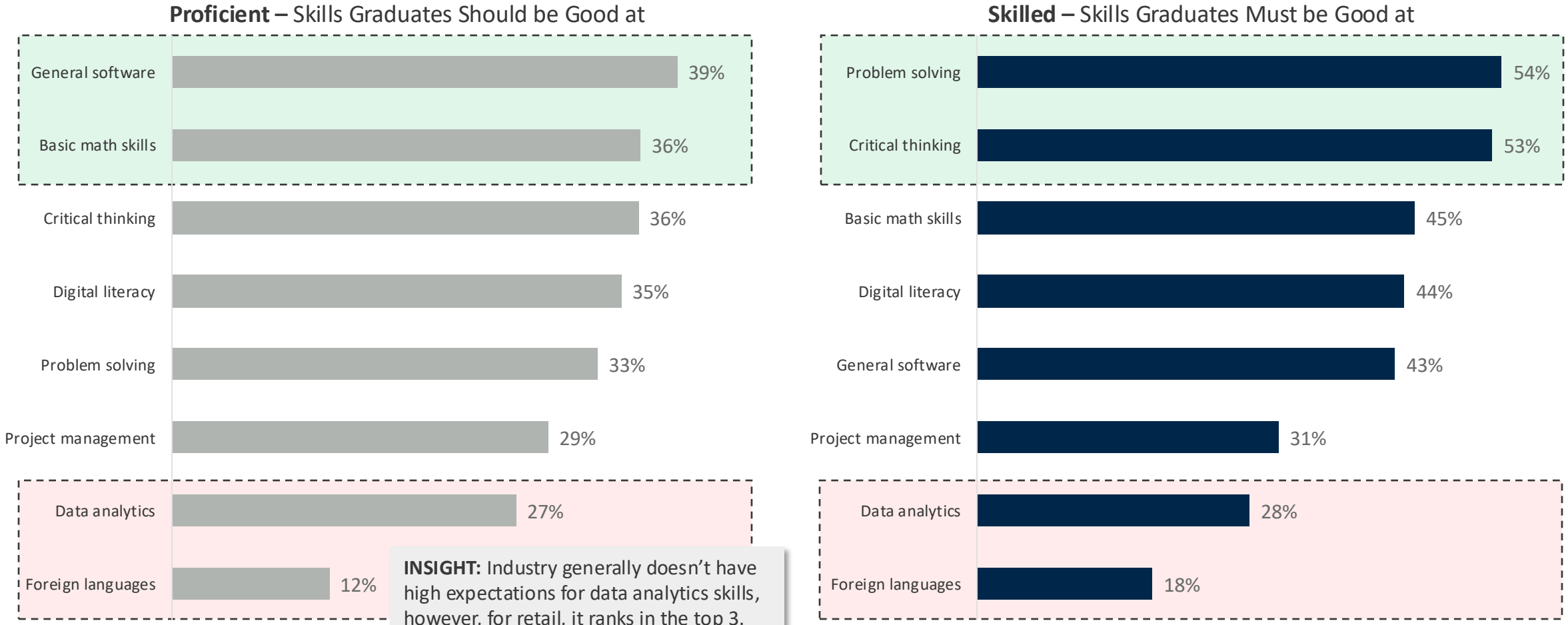

*Q1: Which of the following best describes the industry in which you work?*
*Q2&37: Approximately how many employees does your organization have? How long have you been in your current industry?*
*Q36&36County: What best describes your seniority level in your organization? In which Utah county is your organization located?*

# *Graduate Skill Expectations*

Cicero

# Industry expects students to be skilled at problem solving and critical thinking most of all, while they expect graduates to at least be proficient in general software and mathematics.

**Industry Technical Skill Expectations**
All industries
*n = 603*

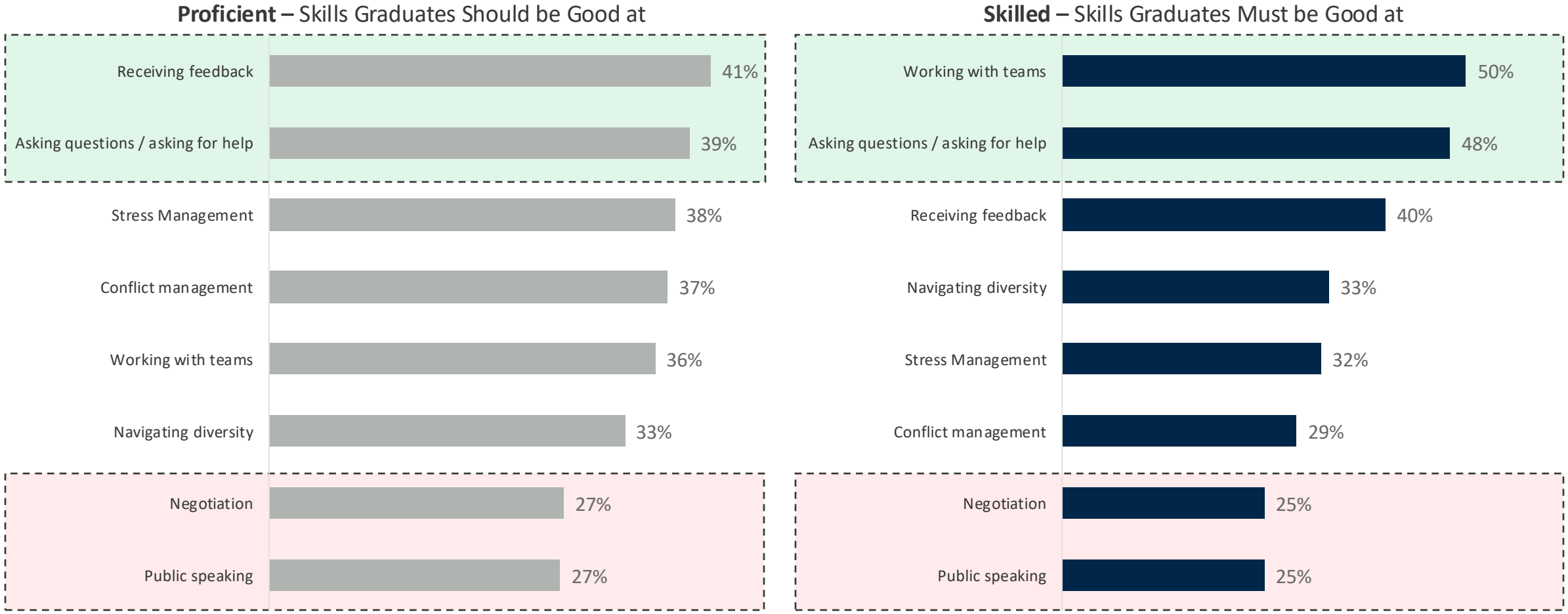



**INSIGHT:** Industry generally doesn't have high expectations for data analytics skills, however, for retail, it ranks in the top 3.

*Q7: For each of the following skill sets, what is the minimum level of proficiency that you expect recent graduates to have when they start work at your organization?*

# Industry has high expectations for students to be able to ask questions, ask for help, and work with teams; additionally important is the ability to receive feedback

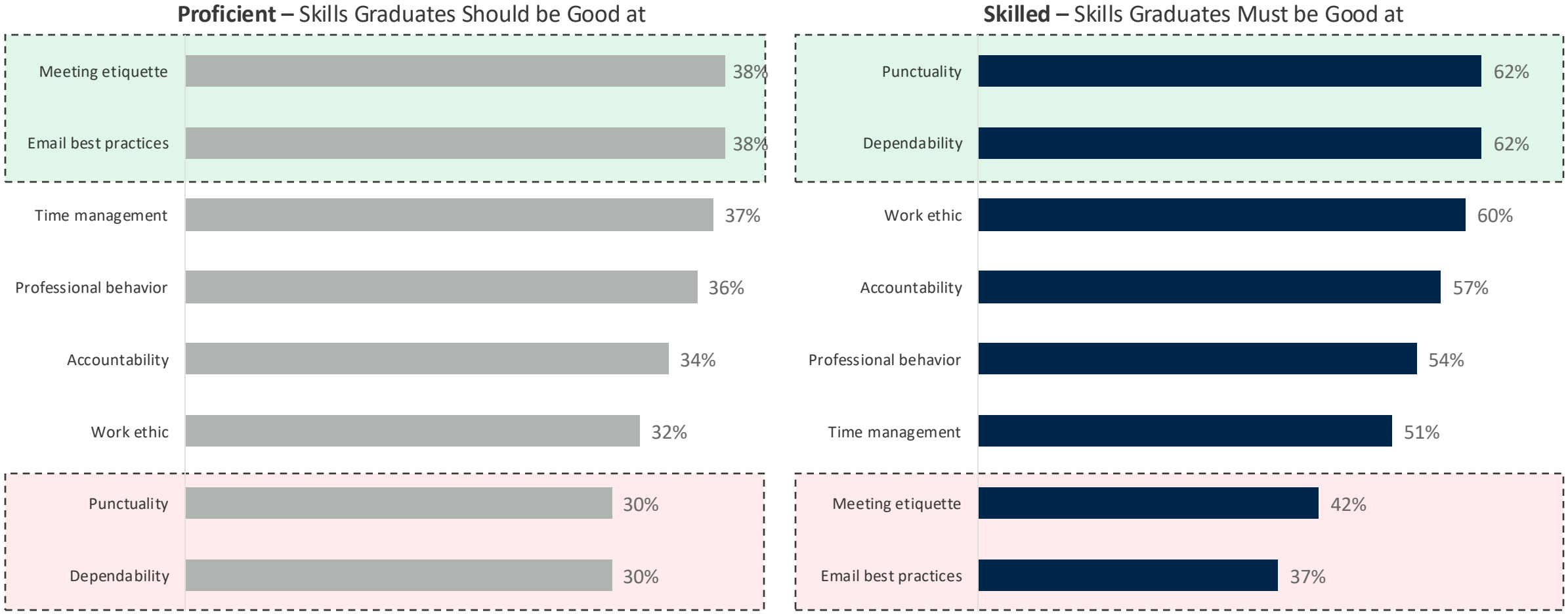
**Industry Personal Skill Expectations**
All industries
*n = 603*




*Q7: For each of the following skill sets, what is the minimum level of proficiency that you expect recent graduates to have when they start work at your organization?*

# Industry is most concerned with the reliability of recent graduates, expecting them to show up on time and follow-through on commitments.

**Industry Business Skill Expectations**
All industries
*n = 603*




*Q7: For each of the following skill sets, what is the minimum level of proficiency that you expect recent graduates to have when they start work at your organization?*

*Graduate Skill Evaluations*

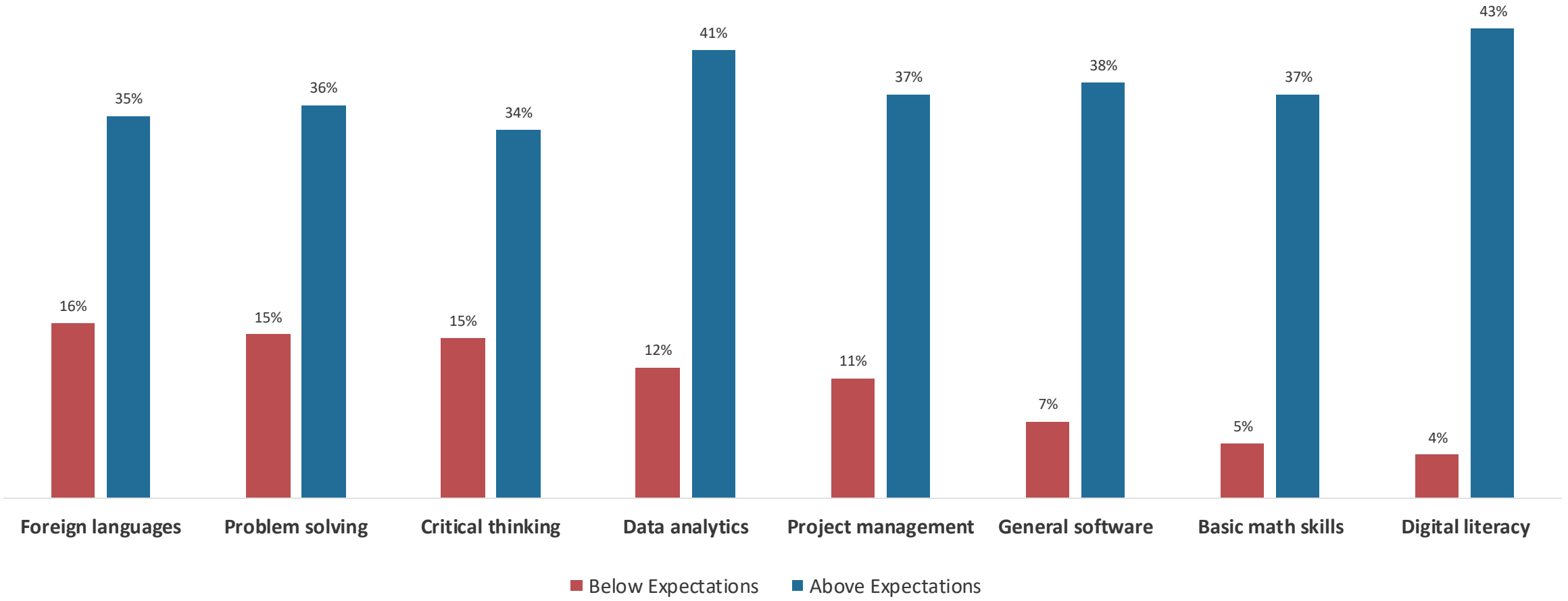
Cicero

# Graduates' ability to problem solve, think critically, and speak foreign languages were reported as the largest technical skill gaps among recent graduates entering the workforce.

**Recent Graduate Technical Skills; Above and Below Expectations**

All industries

*2024: n = 603*



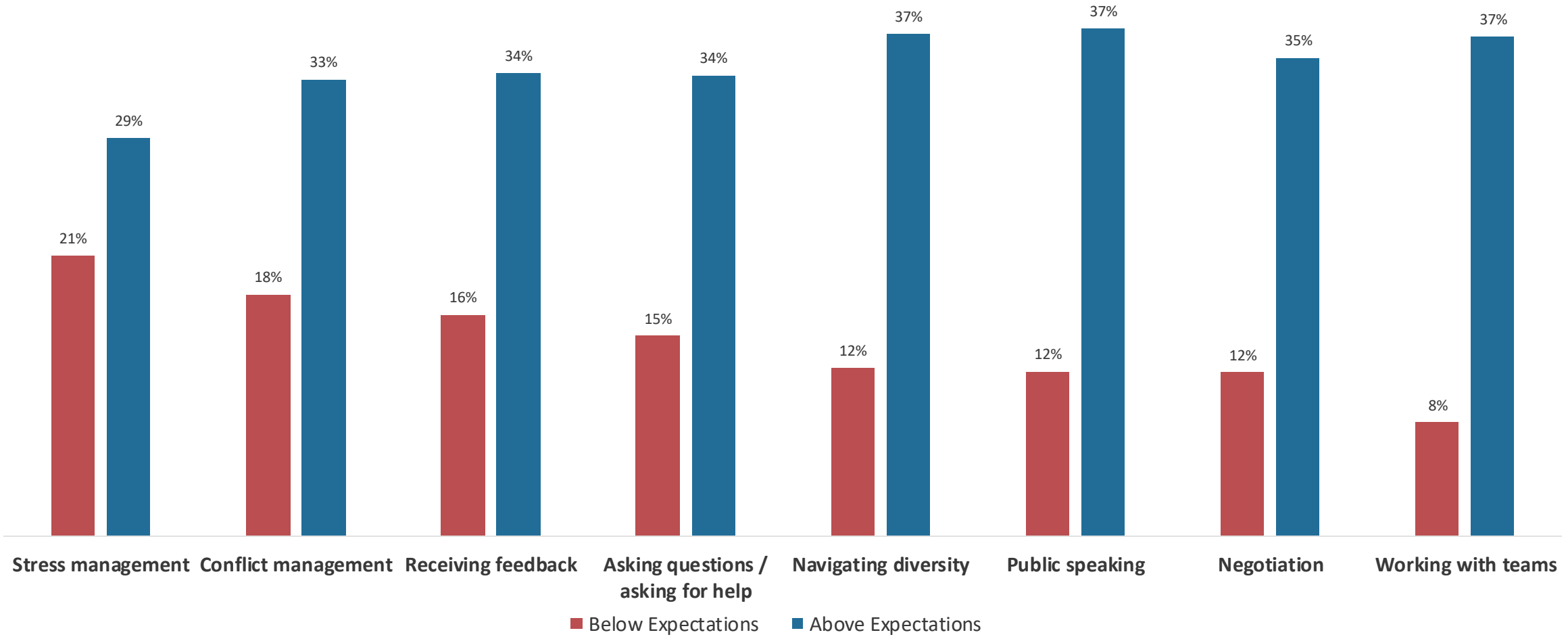

*Refer to subsequent slides for data sources*

# Graduates' ability to manage stress, conflict, and to receive feedback were reported as the largest personal skill gaps among recent graduates entering the workforce.

**Recent Graduate Personal Skills; Above and Below Expectations**

All industries

*2024: n = 603*




Cicero

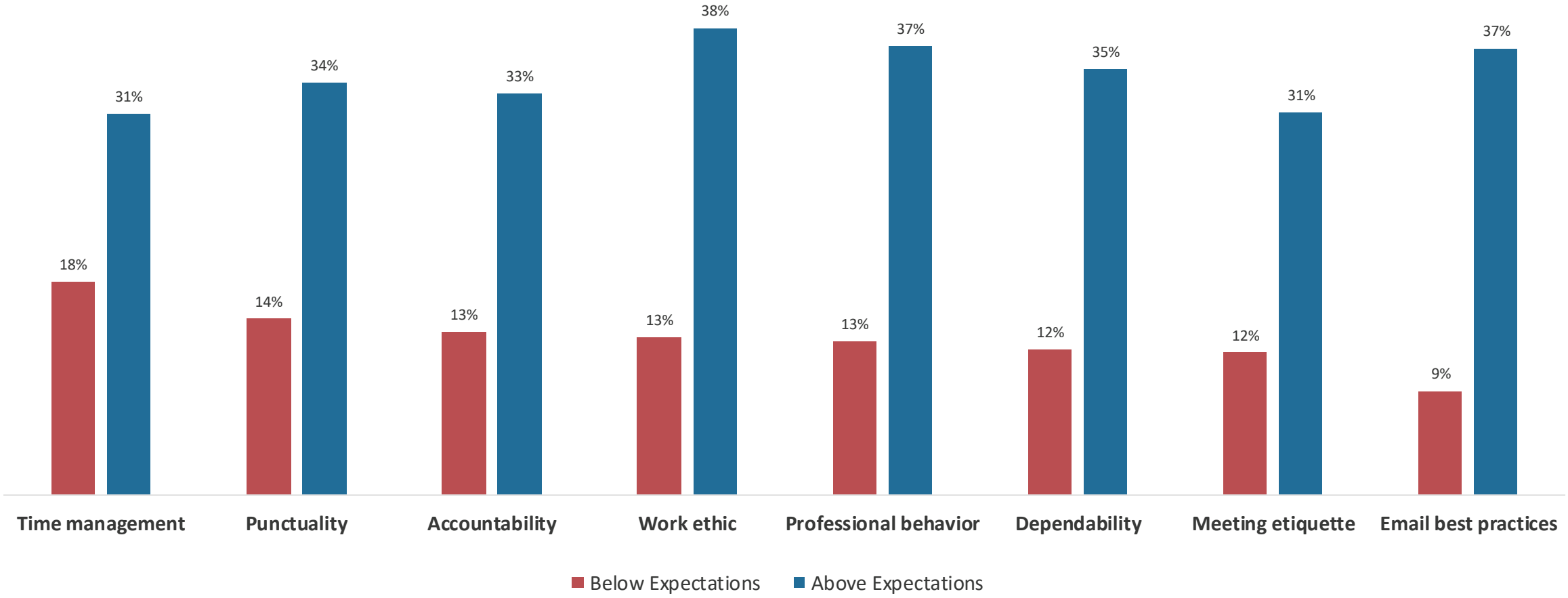
*Refer to subsequent slides for data sources*

# Graduates' ability to manage their time and be punctual and accountable were reported as the largest business skill gaps among recent graduates entering the workforce.

**Recent Graduate Business Skills; Above and Below Expectations**

All industries

*2024: n = 603*




Cicero

*Refer to subsequent slides for data sources*

# *Future Skill Trends*

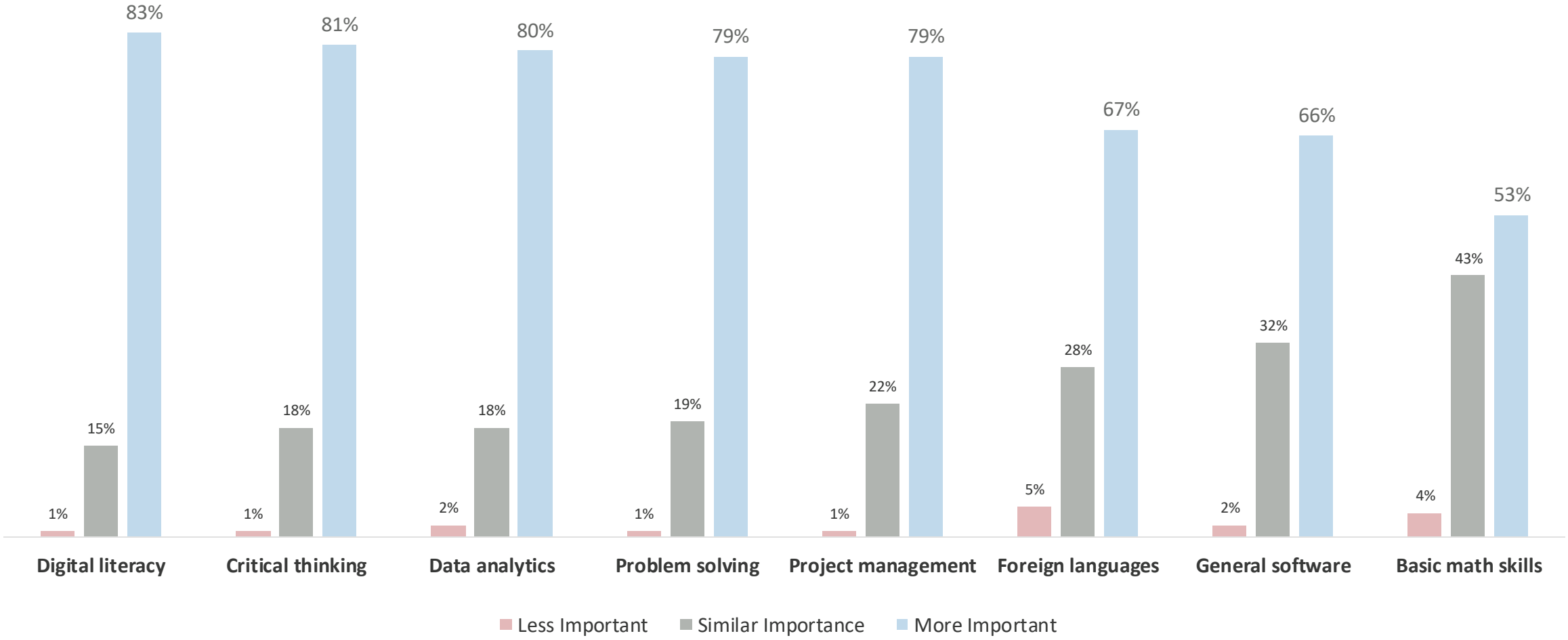
Cicero

# Graduates' ability to be digitally literate, think critically, and perform data analytics will be both relevant and increasingly important in the future workforce.

**Recent Graduate Technical Skills; Greater or Lesser Importance**

All industries

*2024: n = 603*



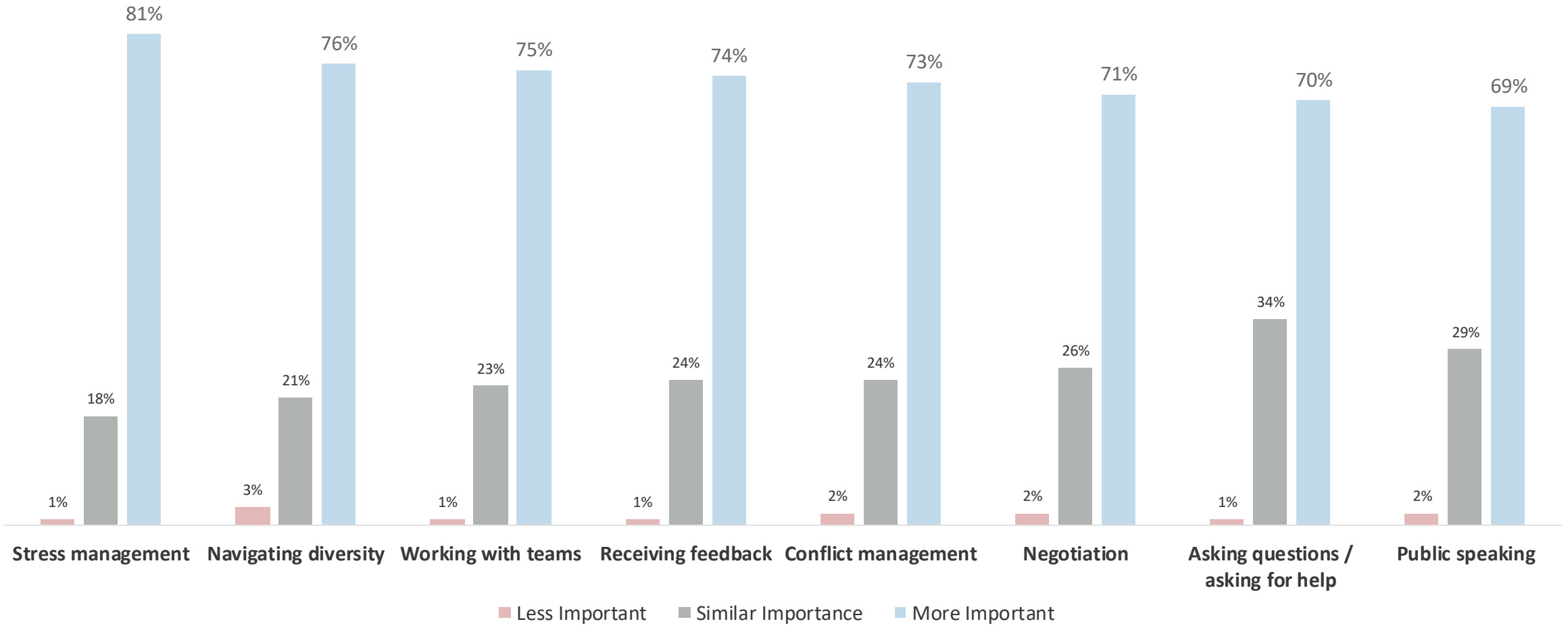

*Refer to subsequent slides for data sources*

# Graduates' ability to manage stress, navigate diversity, and work with teams will be both relevant and increasingly important in the future workforce.

**Recent Graduate Personal Skills; Greater or Lesser Importance**

All industries

*2024: n = 603*



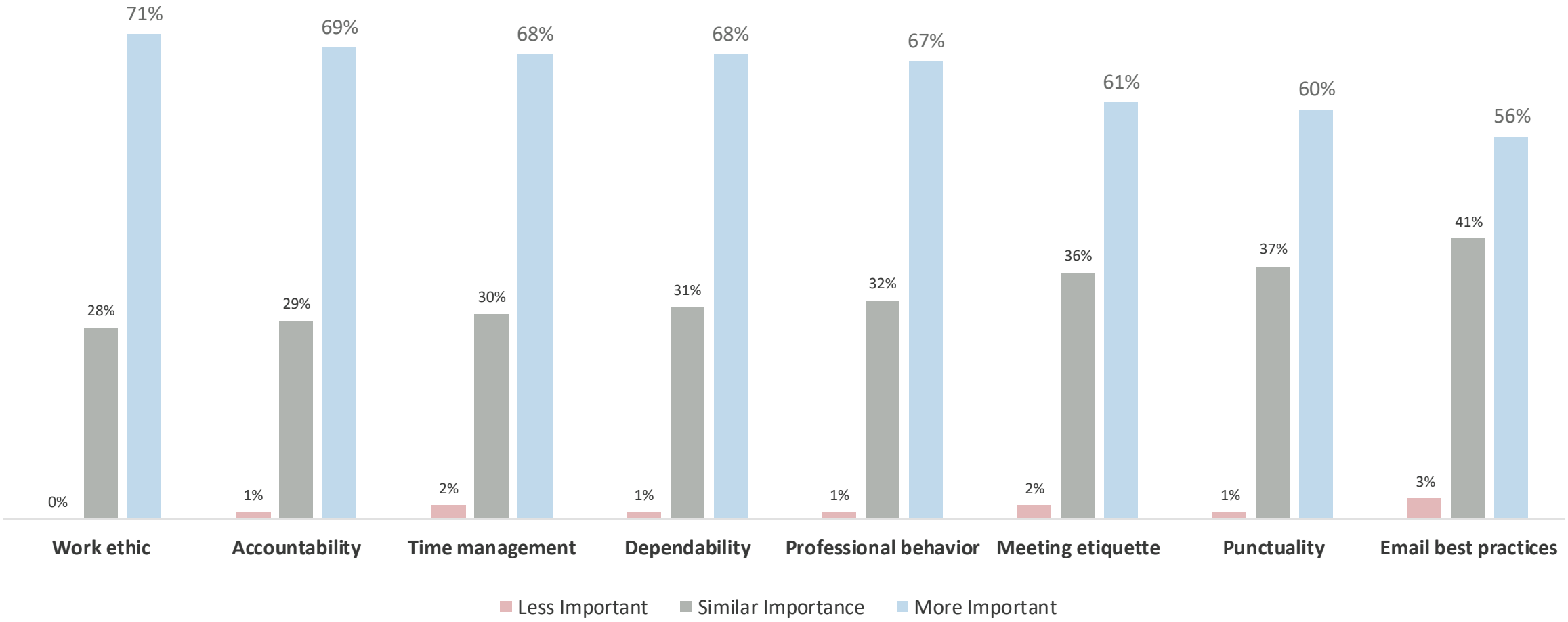

*Refer to subsequent slides for data sources*

# Graduates' ability to work hard, be accountable, and manage time will be both relevant and increasingly important in the future workforce.

**Recent Graduate Business Skills; Greater or Lesser Importance**

All industries

*2024: n = 603*




*Refer to subsequent slides for data sources*

*Industry Skill Breakdowns*

*Aerospace*

Cicero

# Aerospace finds recent graduates are not well prepared for half of the technical skills needed for work in their industry, particularly CAD, which is a top expectation of industry.

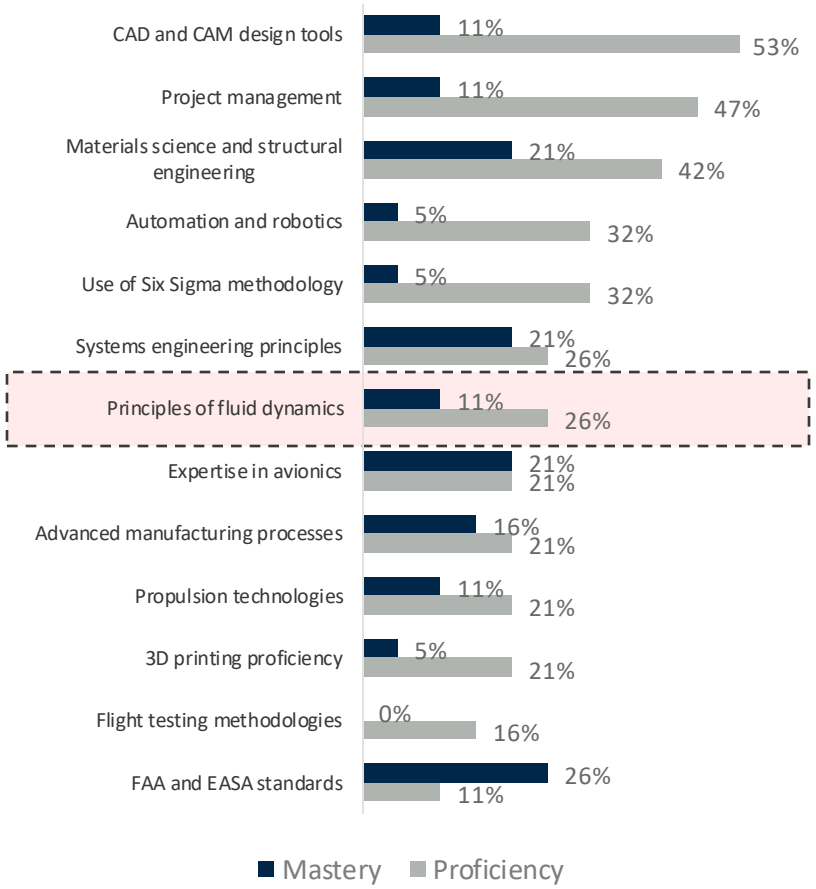
## Skill Expectations, Evaluations and Future Needs

Aerospace

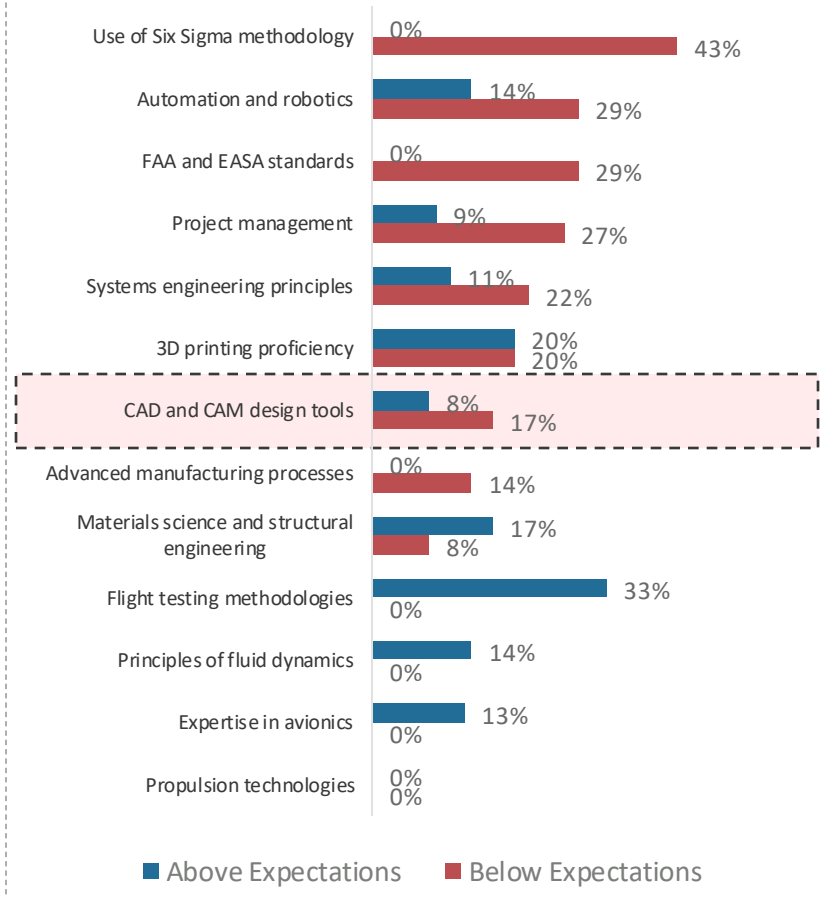
*n = 19*

**INSIGHT:** Aerospace has generally lower expectations and greater dissatisfaction than other industries.

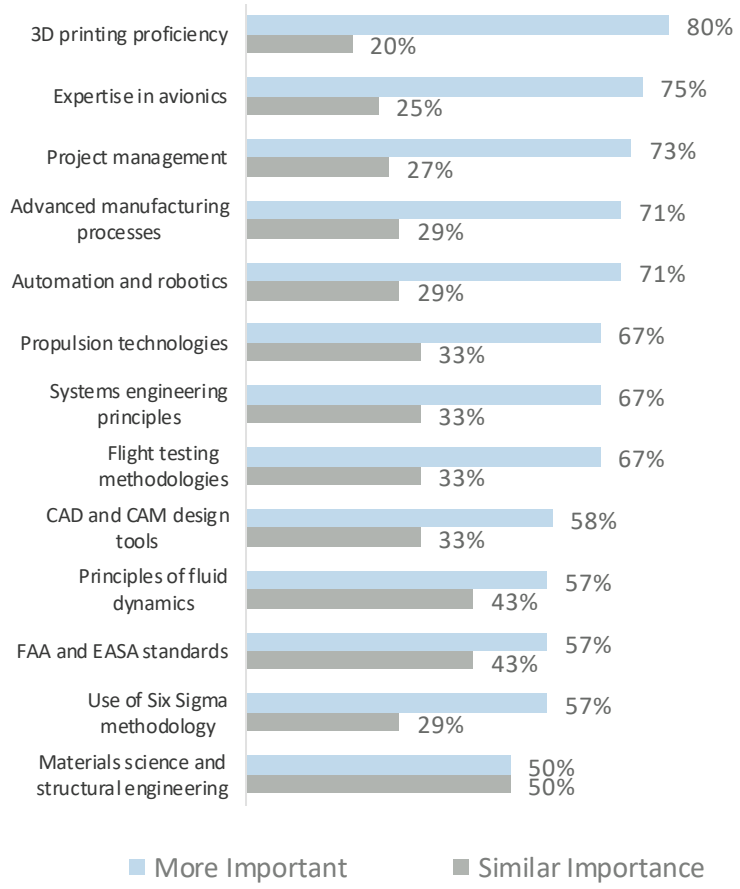
### Expectations for Graduates




### Evaluation of Graduate's Skills




### Future Skill Needs of Graduates

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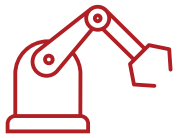
*Q32 - You indicated previously that the following skills are valuable to your industry. Compared to today, how important do you believe these skills will be for your industry 5 years from now?*



*Advanced Manufacturing*

Cicero

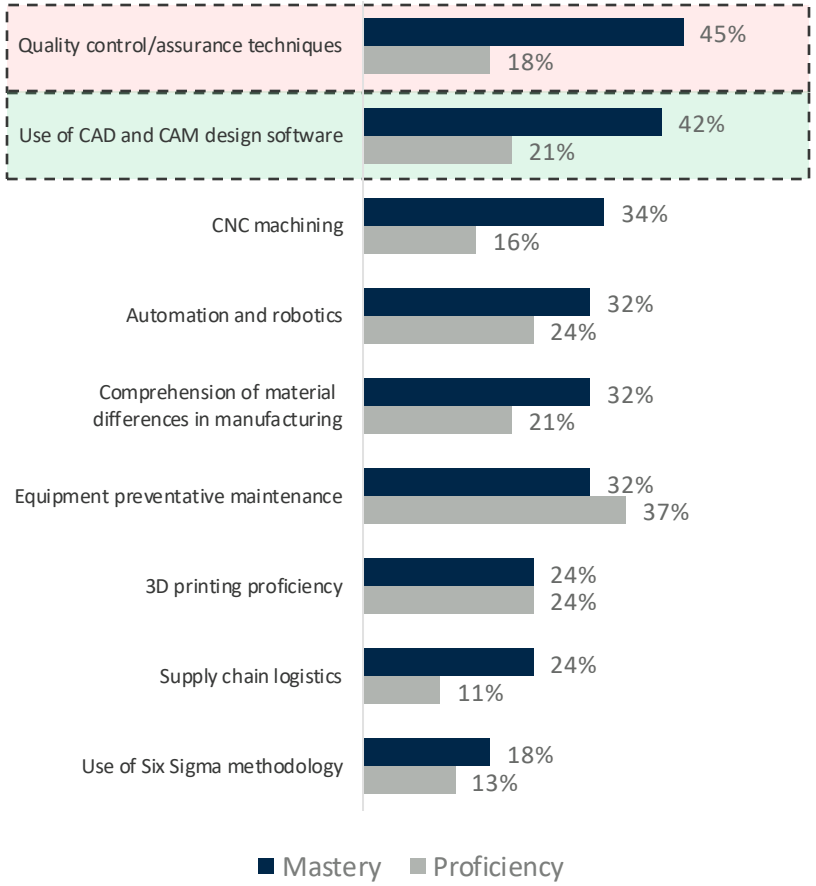
# Advanced manufacturing expect graduates skilled in quality control (QC) techniques and CAD design software, however while graduates excel at CAD, they fall short with QC techniques.

## Skill Expectations, Evaluations and Future Needs

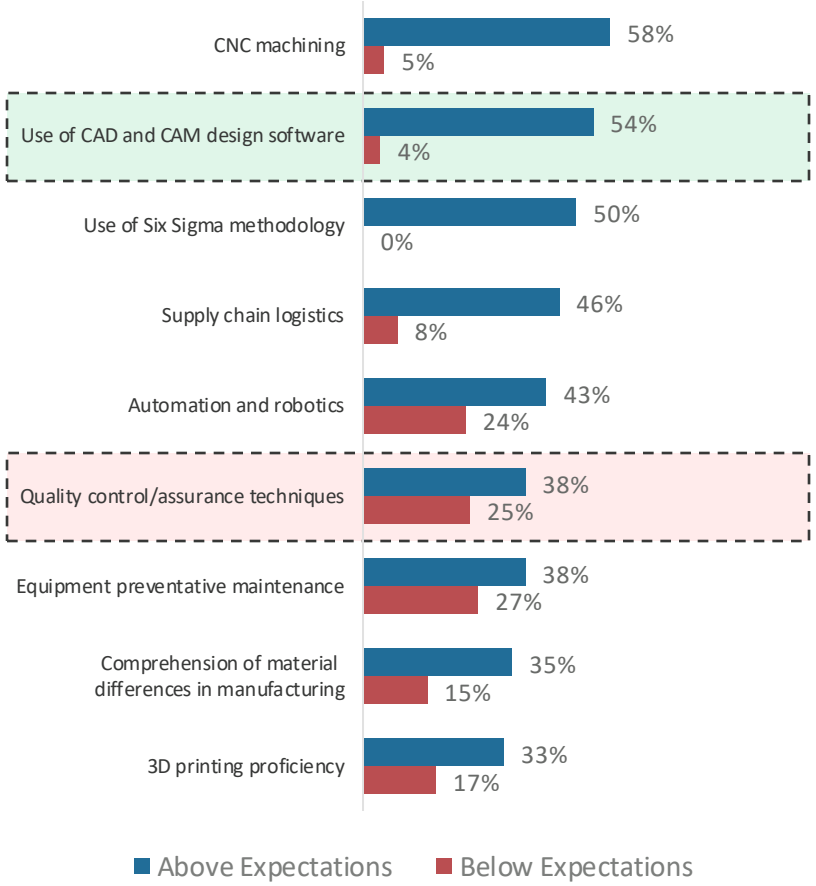
Advanced Manufacturing

*n = 38*

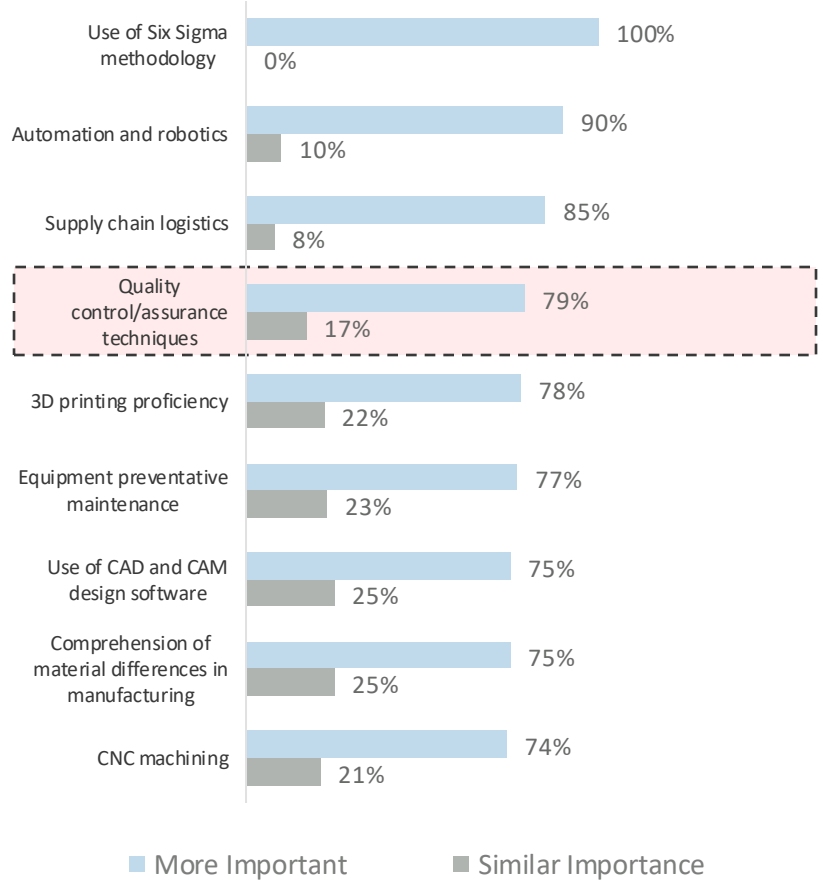
### Expectations for Graduates




### Evaluation of Graduate's Skills




### Future Skill Needs of Graduates

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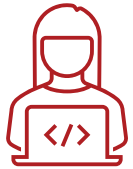


*Computer Sciences*

Cicero

# The computer sciences find graduates are overperforming on efficient data structures and algorithm, which although not a top priority currently, is forecast to grow in importance.

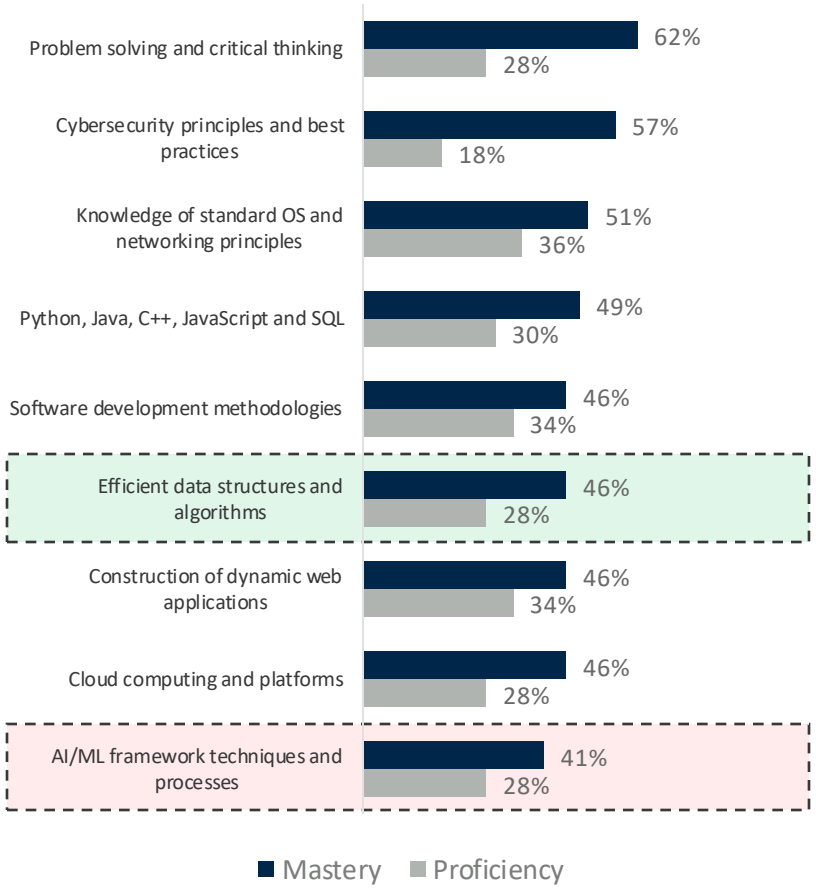
## Skill Expectations, Evaluations and Future Needs

Computer Sciences

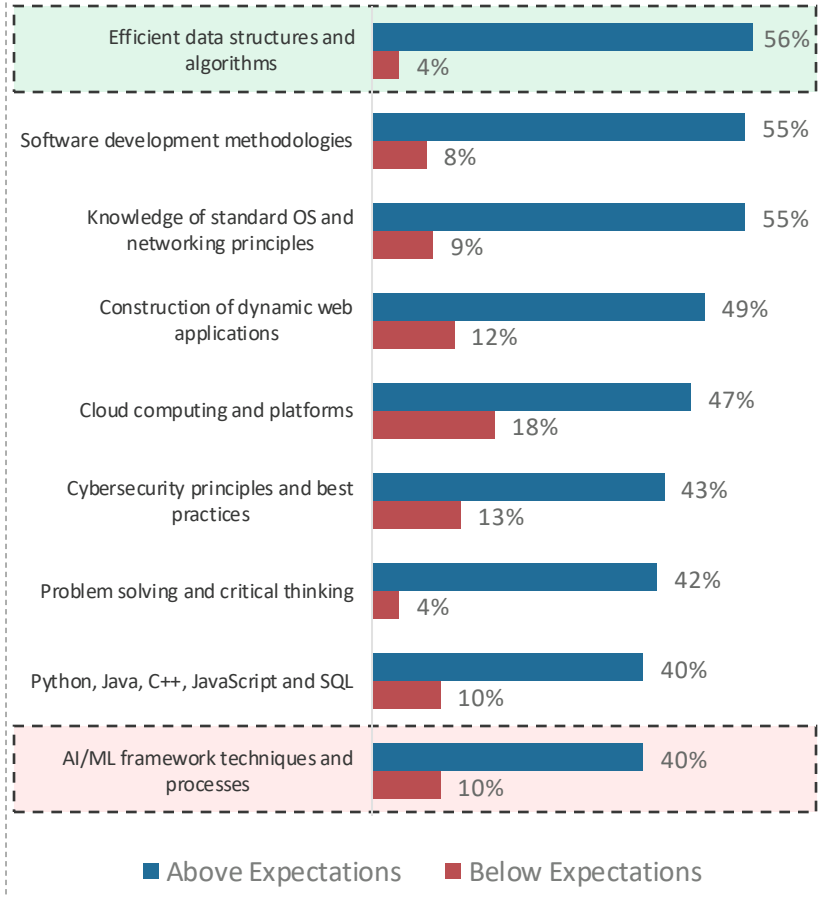
*n = 61*

**INSIGHT:** AI/ML frameworks and techniques are not a major expectation of industry today, but it is anticipated to be a huge area of need in the future and today's graduates are not prepared.

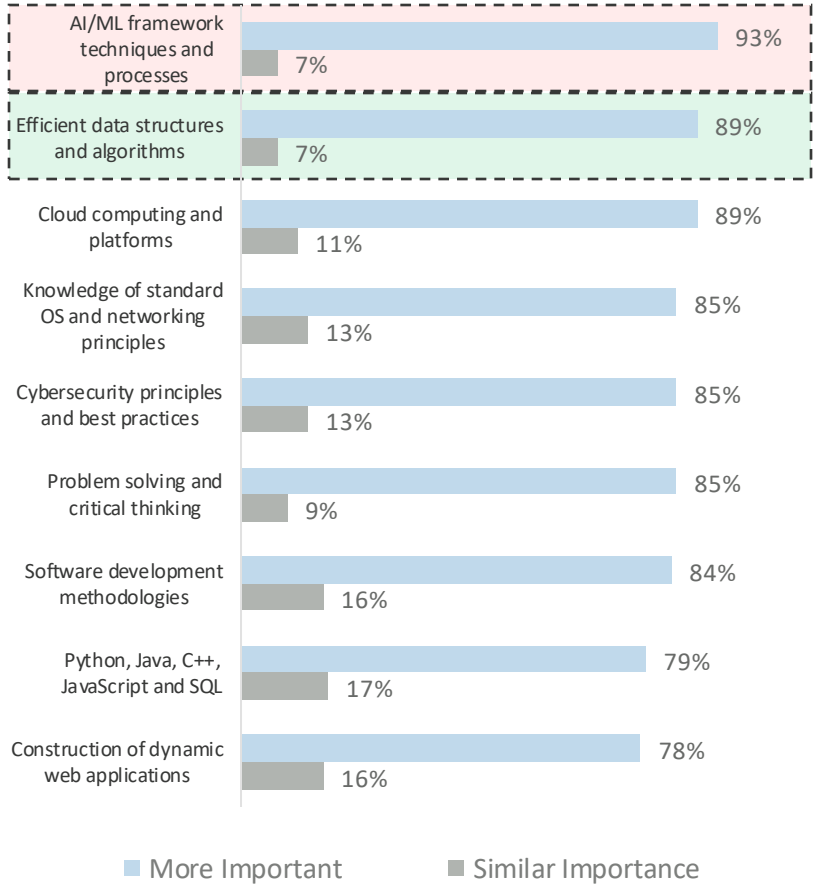
### Expectations for Graduates




### Evaluation of Graduate's Skills




### Future Skill Needs of Graduates

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*Construction*

Cicero

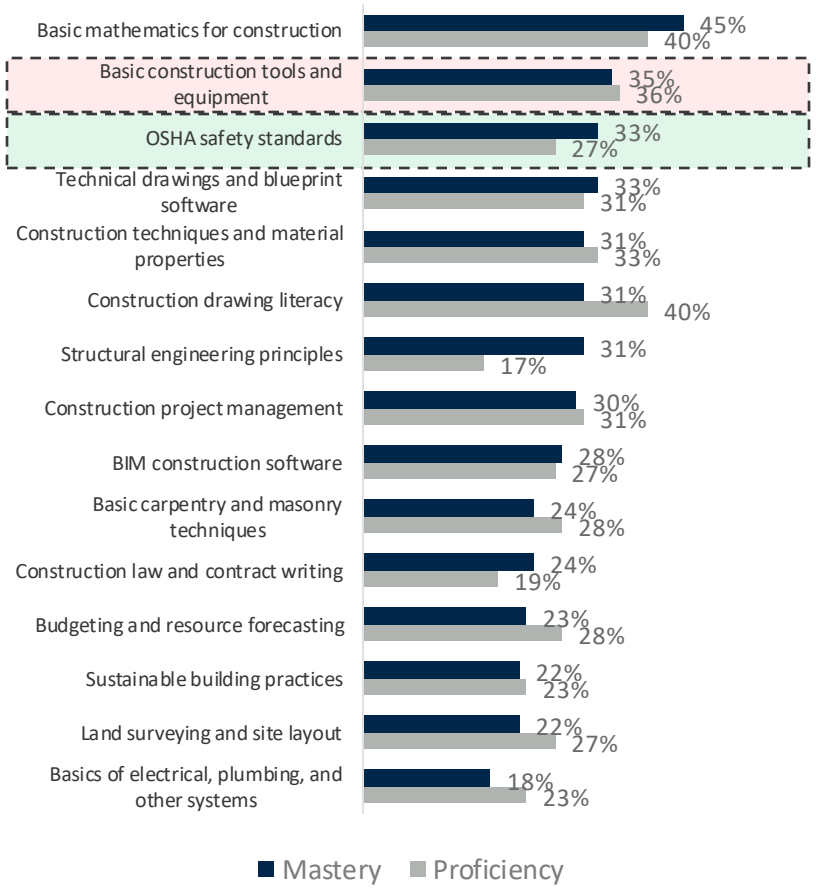
# The construction industry is not satisfied with recent graduates' skills in basic construction tools, a top expectation of industry, but do feel graduates are skilled in OSHA safety standards.

## Skill Expectations, Evaluations and Future Needs

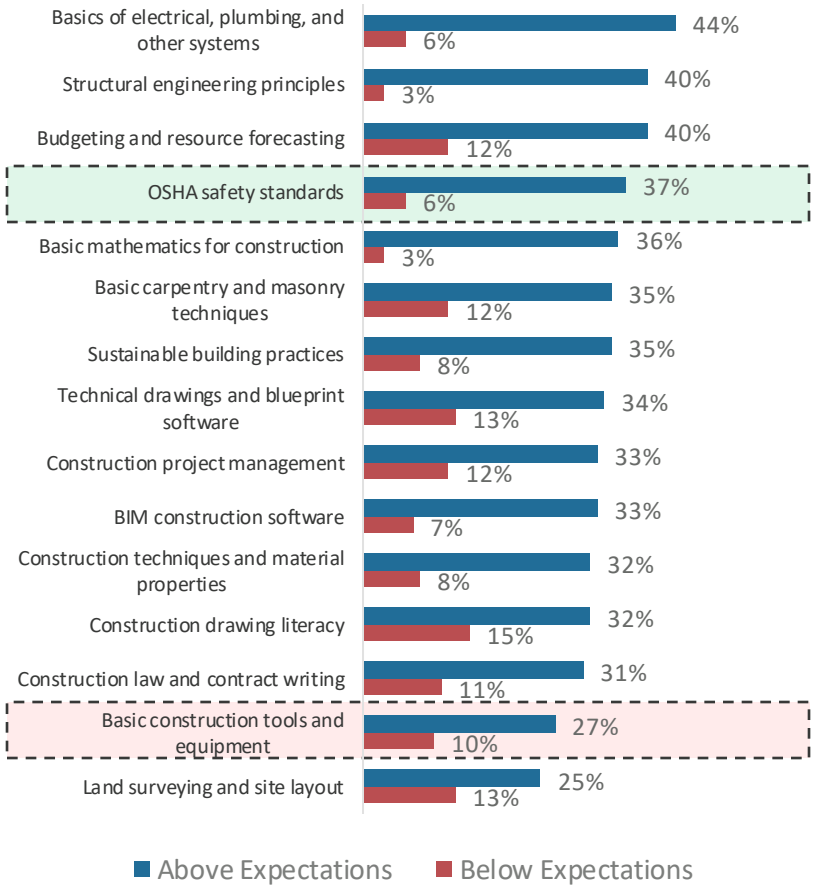
Construction

*n = 83*

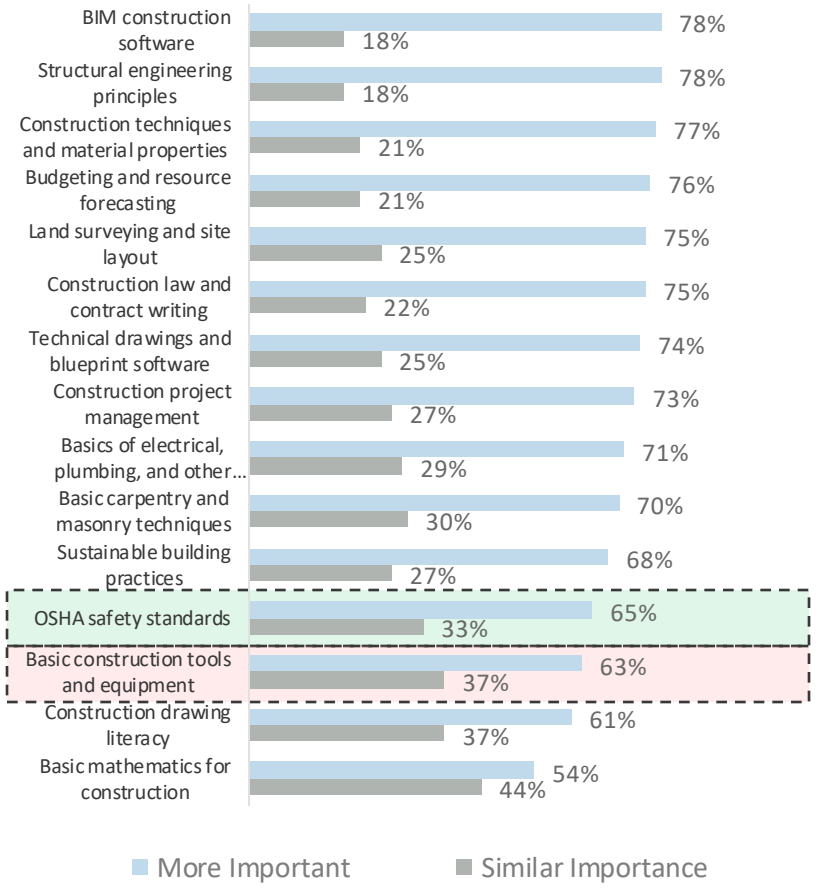
### Expectations for Graduates




### Evaluation of Graduate's Skills




### Future Skill Needs of Graduates

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*Energy*

Cicero

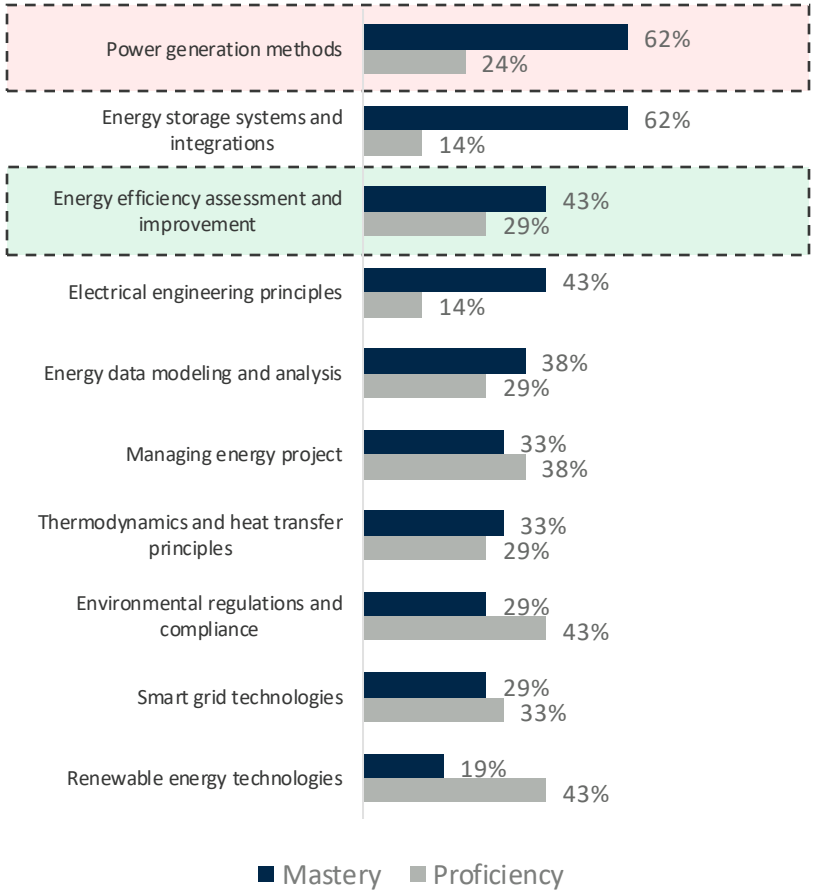
# The energy industry has high expectations for graduates in power generation methods, yet they evaluate graduates to be least prepared with these skills on average.

## Skill Expectations, Evaluations and Future Needs

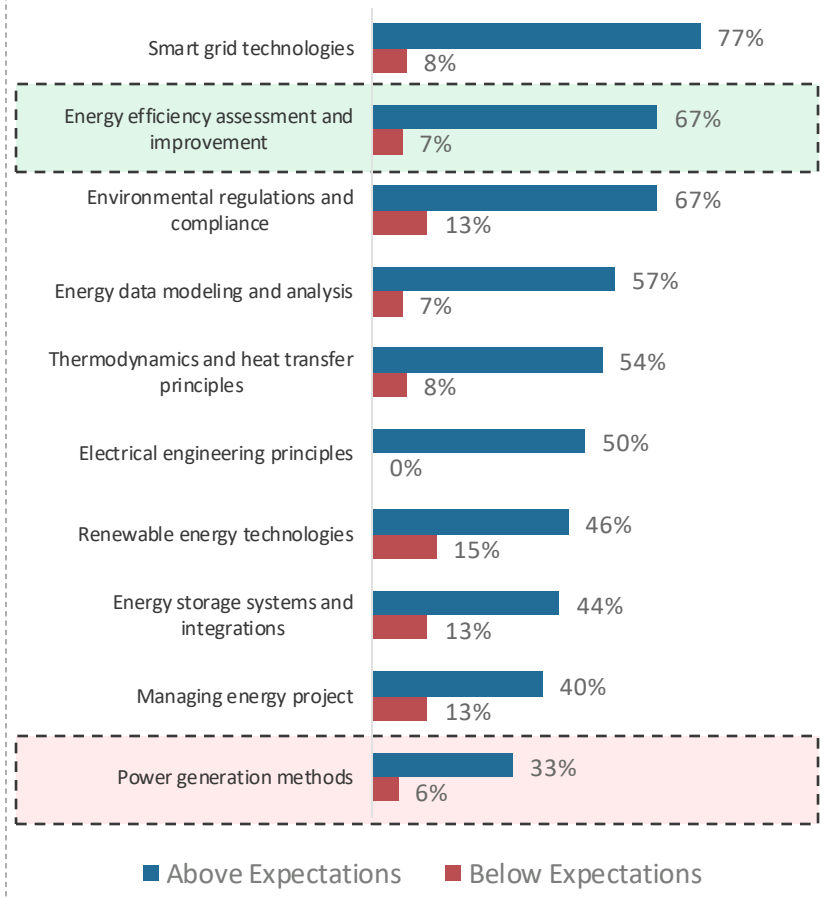
Energy

*n = 21*

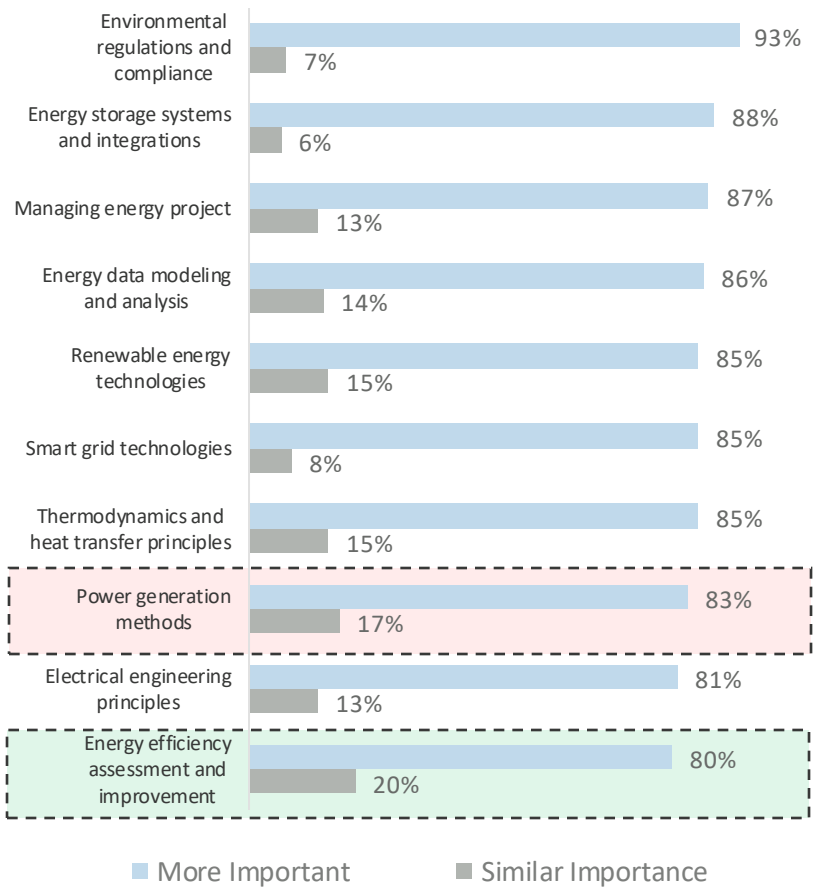
### Expectations for Graduates




### Evaluation of Graduate's Skills




### Future Skill Needs of Graduates

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*Financial Services*

Cicero

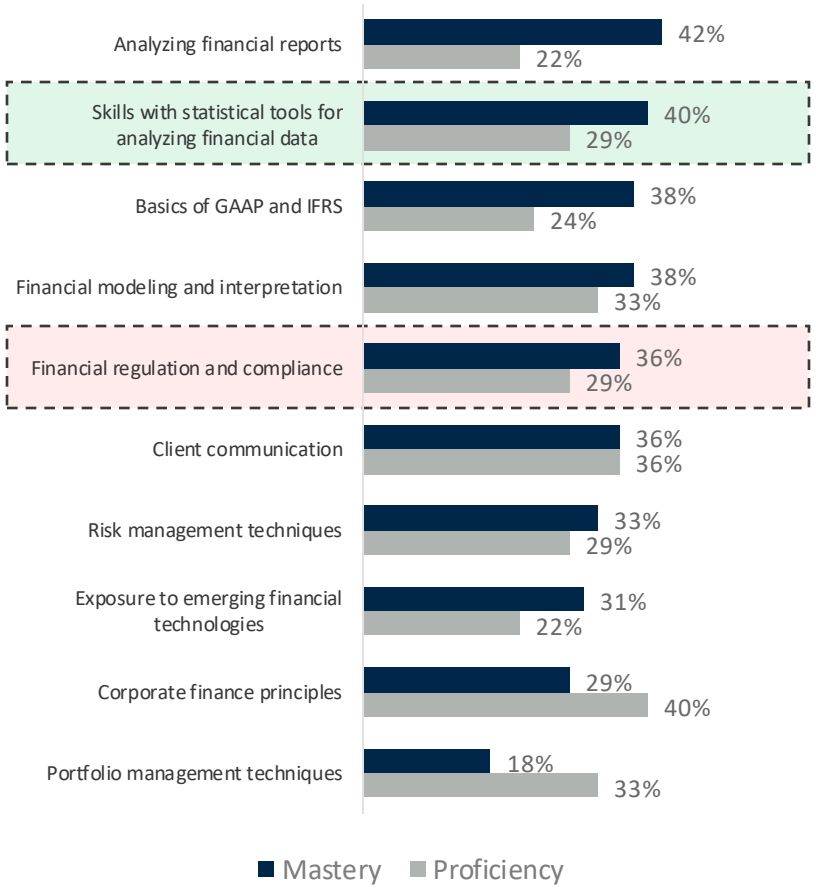
# The financial services industry reports recent graduates are not deficient in their financial regulation and compliance skills, a top need for the future of the workforce in finance.

## Skill Expectations, Evaluations and Future Needs

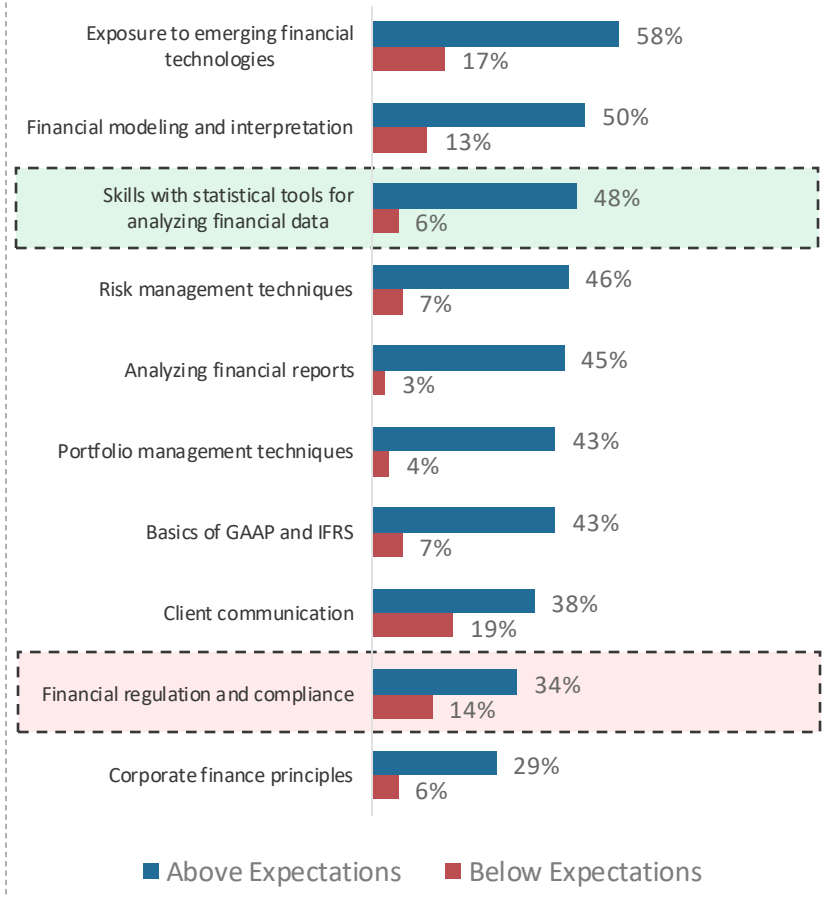
Financial Services

*n = 45*

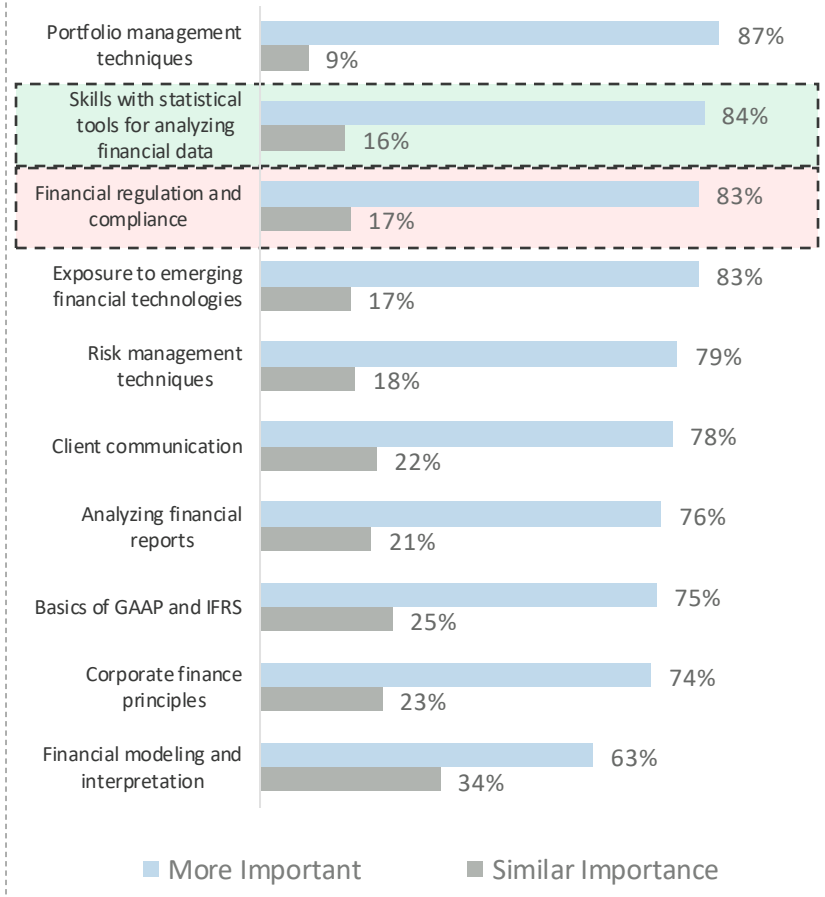
### Expectations for Graduates




### Evaluation of Graduate's Skills




### Future Skill Needs of Graduates

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*Healthcare*

Cicero

# Healthcare expect graduates to be skilled in empathy, but many fall short; however, they excel in essential clinical skills, which is a top 3 concern for the industry.

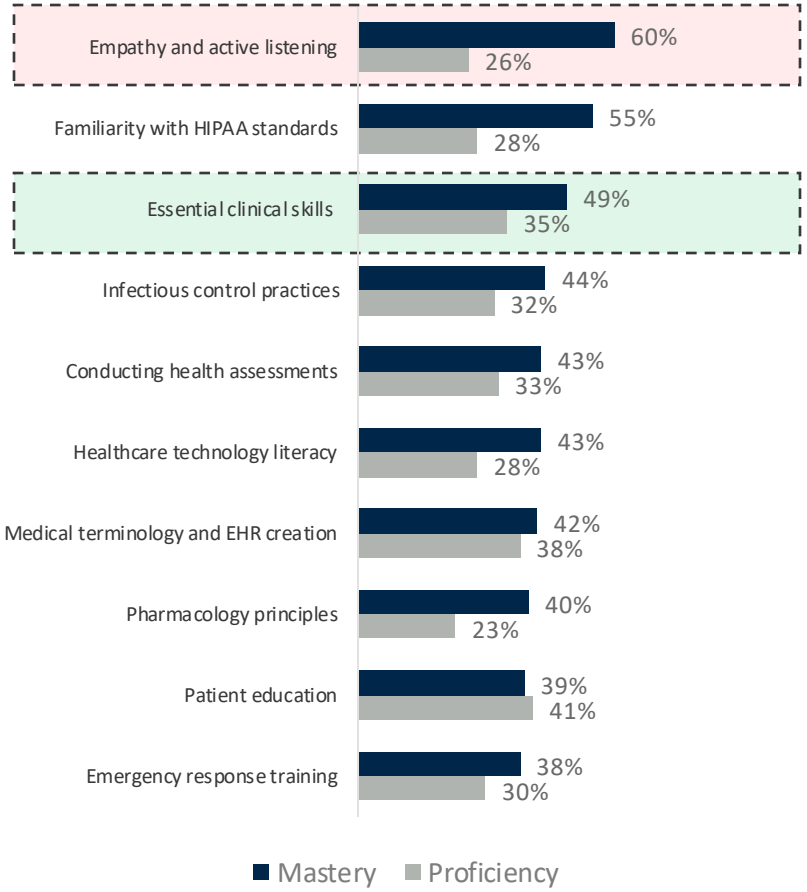
## Healthcare Skill Expectations, Evaluations and Future Needs

Healthcare

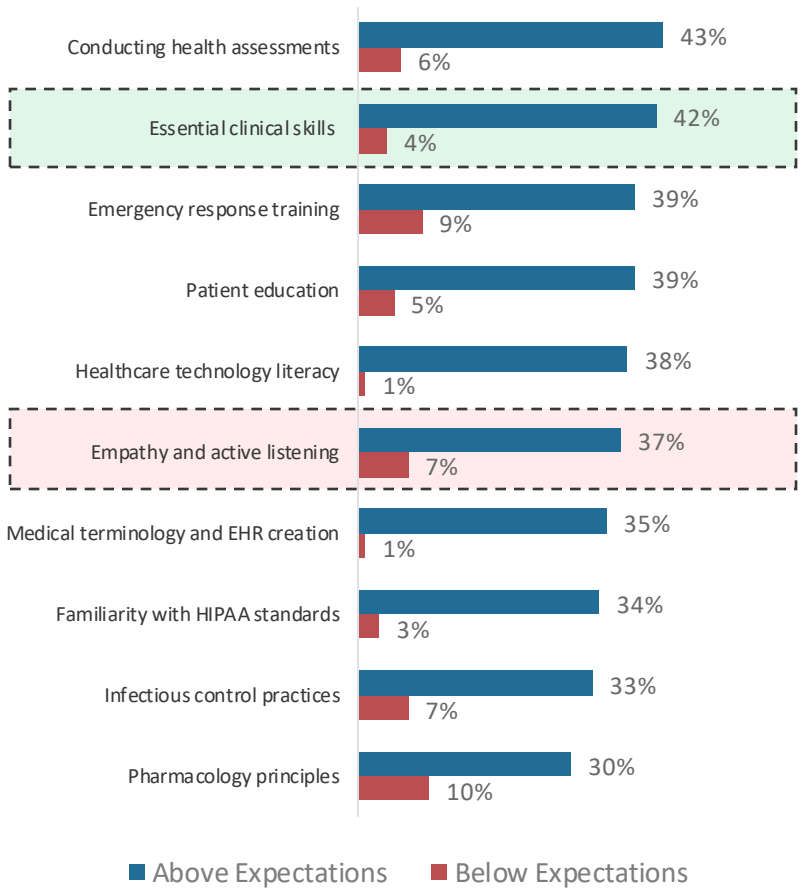
*n = 125*

**INSIGHT:** In interviews, healthcare is generally satisfied with graduates' technical skills, reflected in the positive data on skills like in health assessments and clinical skills.

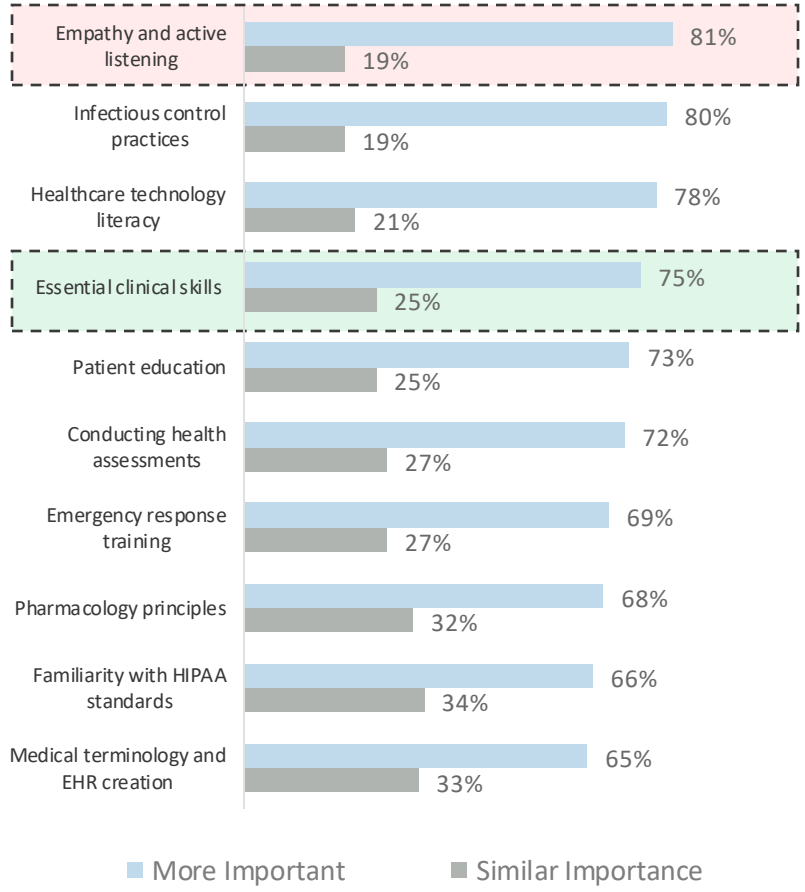
### Expectations for Graduates




### Evaluation of Graduate's Skills




### Future Skill Needs of Graduates

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*Hospitality/Tourism*

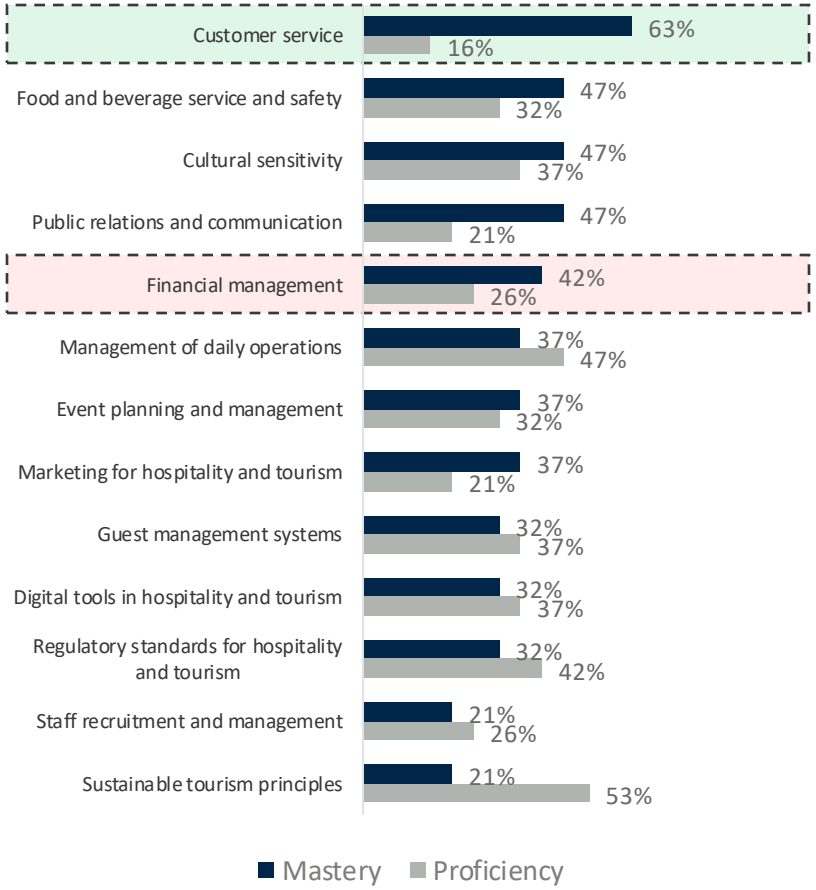
# The hospitality industry is pleased with graduates' skills in customer service; however, they anticipate a growing need for financial management, a key skill deficit in current graduates.

## Skill Expectations, Evaluations and Future Needs

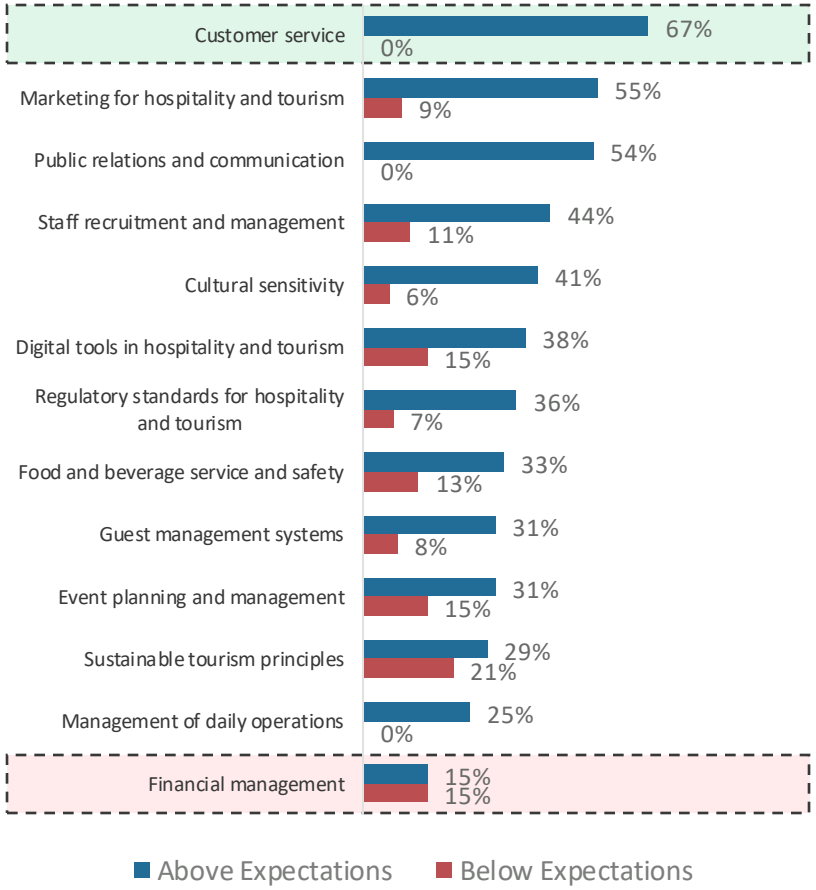
Hospitality/Tourism

*n = 19*

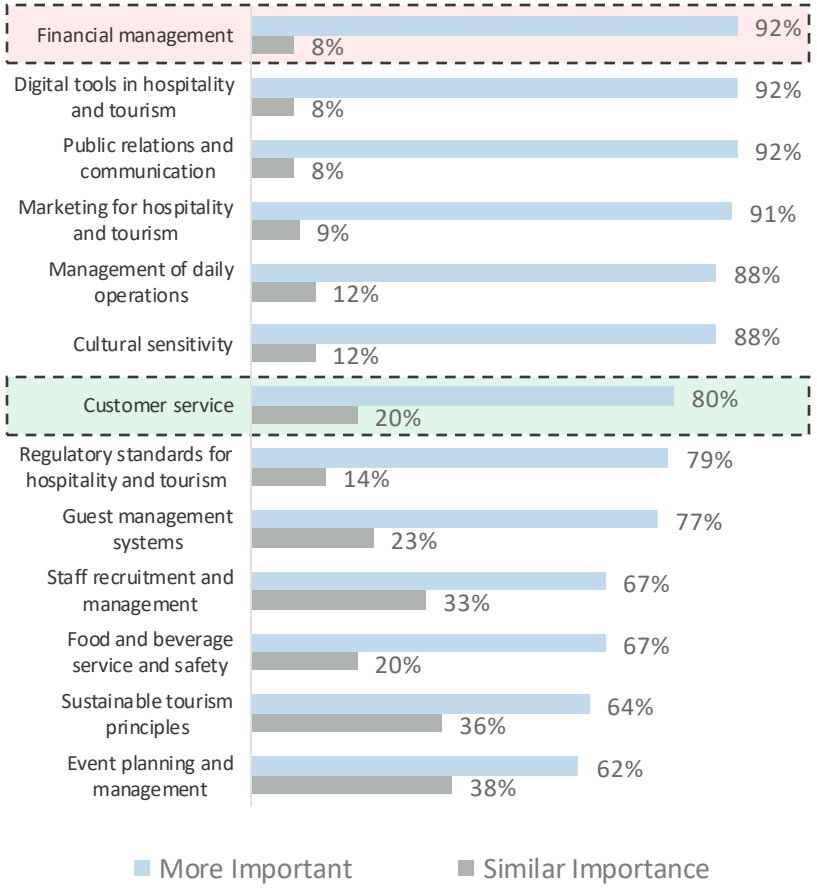
### Expectations for Graduates




### Evaluation of Graduate's Skills




### Future Skill Needs of Graduates

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*Life Sciences*

Cicero

# The life sciences are pleased with graduates' abilities in PCR/DNA and protein extraction, but somewhat dissatisfied with their other technical skills, most especially lab safety.

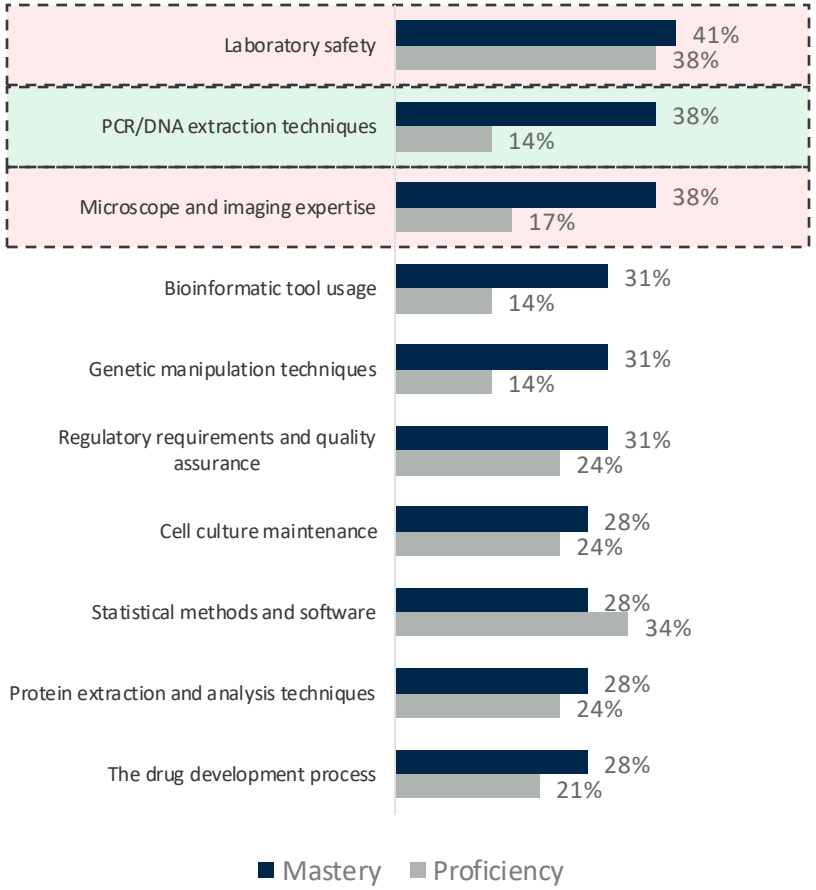
## Skill Expectations, Evaluations and Future Needs

Life Sciences

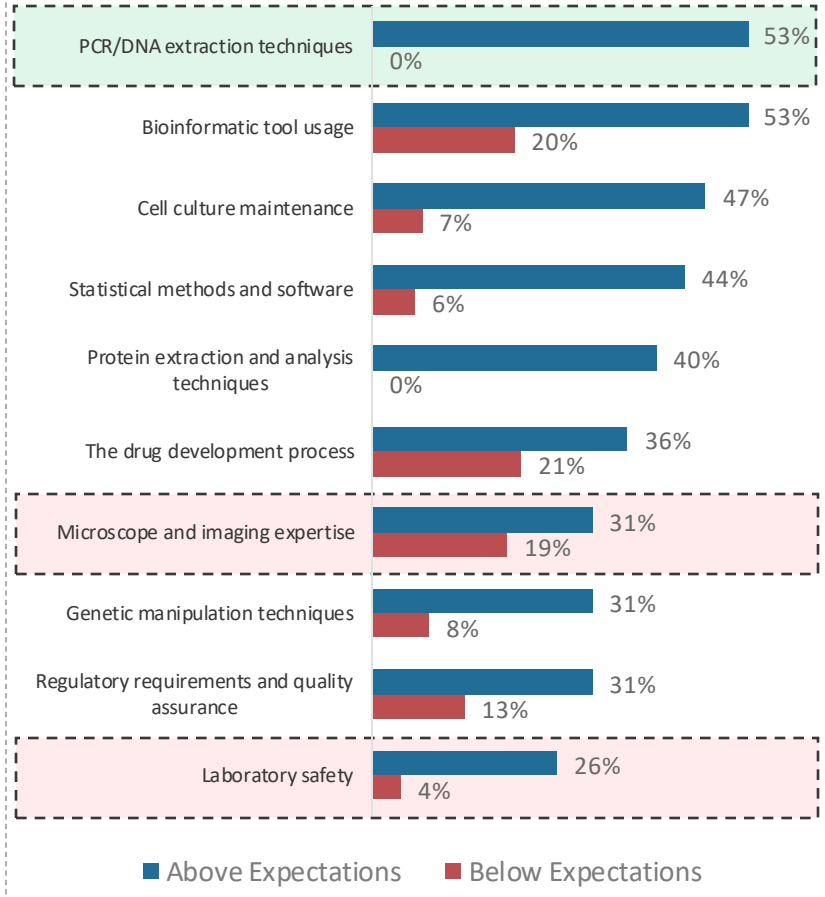
*n = 29*

**INSIGHT:** Skills like PCR/DNA extraction appear more role dependent as the industry either expects graduates to be skilled or inexperienced.

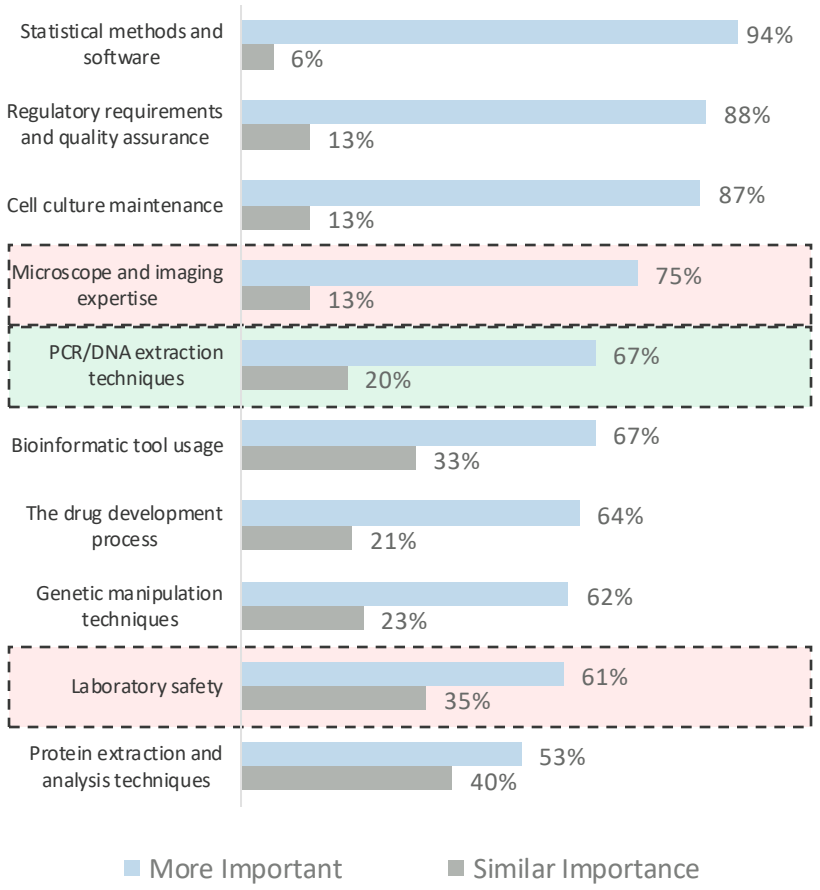
### Expectations for Graduates




### Evaluation of Graduate's Skills




### Future Skill Needs of Graduates

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*Retail*

Cicero

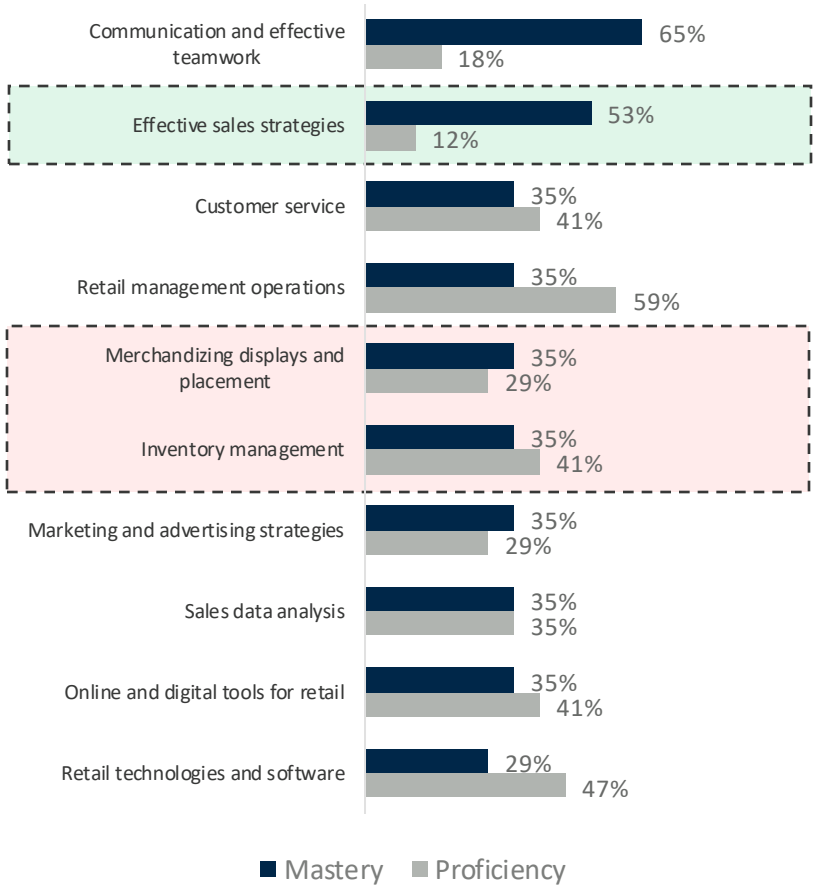
# The retail industry feel graduates do not meet their expectations for skills in inventory management and merchandizing; central to the future, however, will be skills in retail software

## Skill Expectations, Evaluations and Future Needs

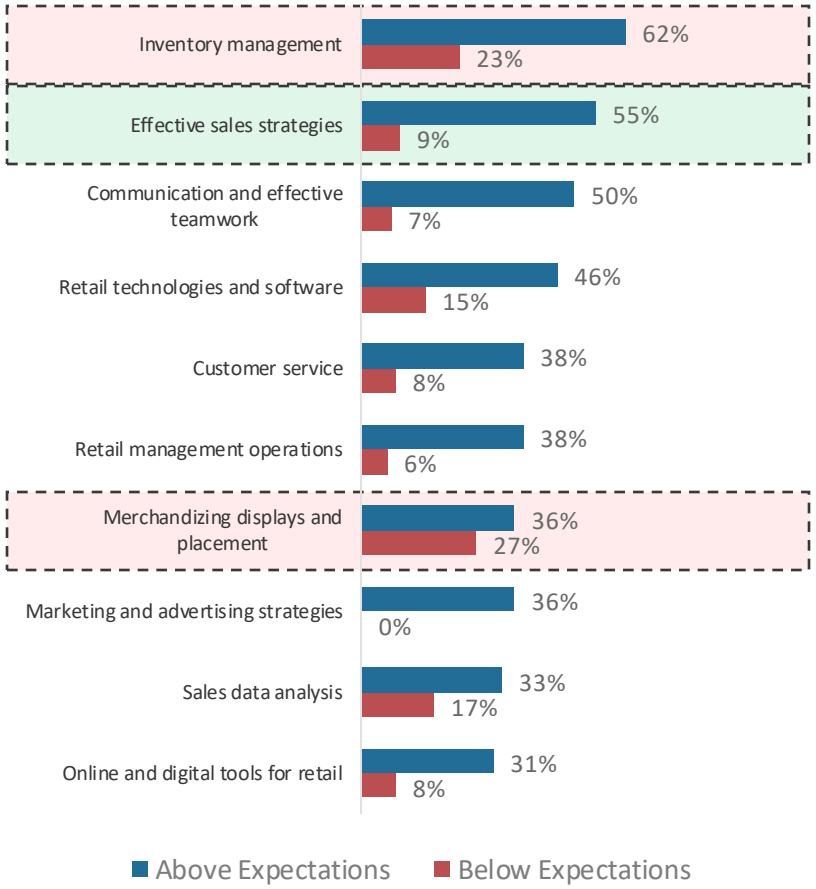
Retail

*n = 17*

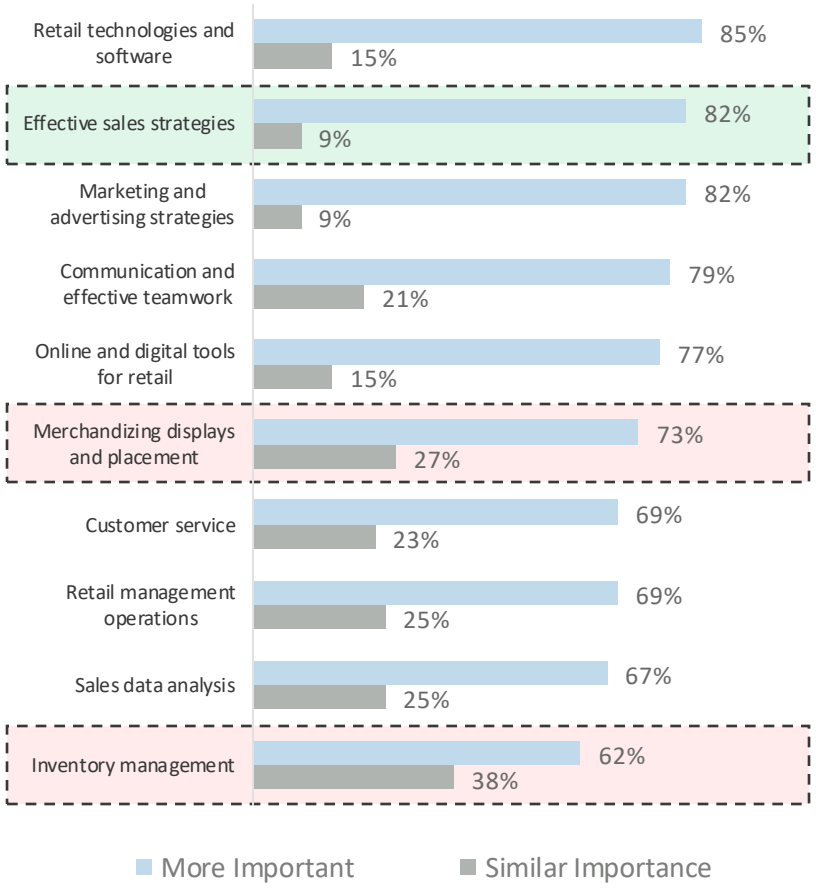
### Expectations for Graduates




### Evaluation of Graduate's Skills




### Future Skill Needs of Graduates

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*Transportation*

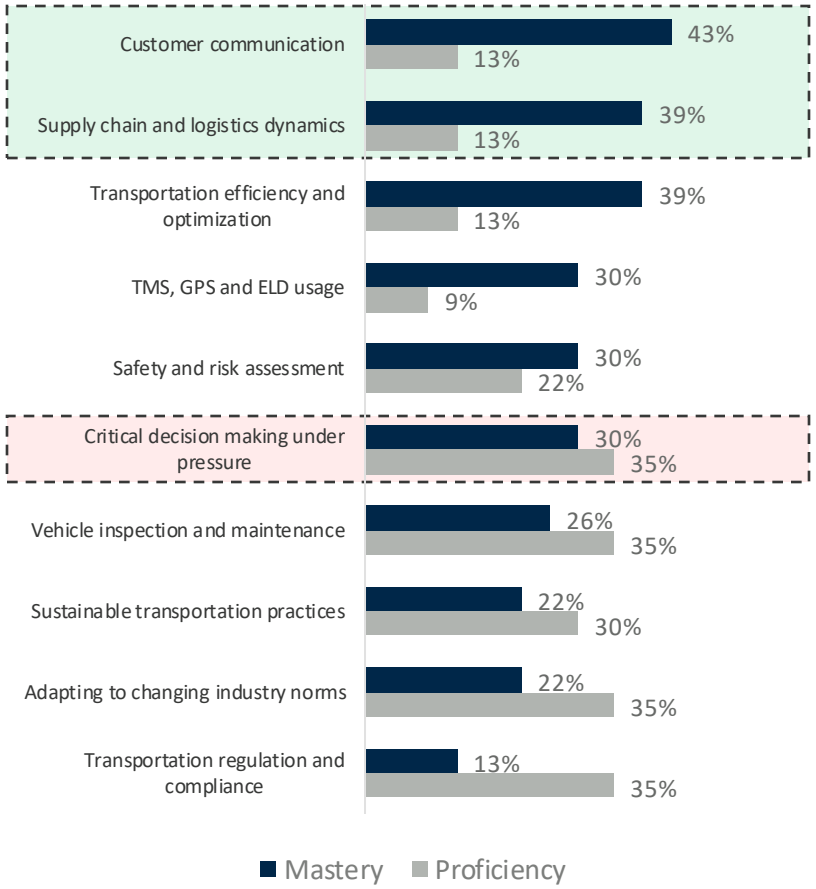
# The transportation industry are satisfied with graduates' skills in customer communication and supply chain logistics but are not fully satisfied by their critical decision-making under pressure.

## Skill Expectations, Evaluations and Future Needs

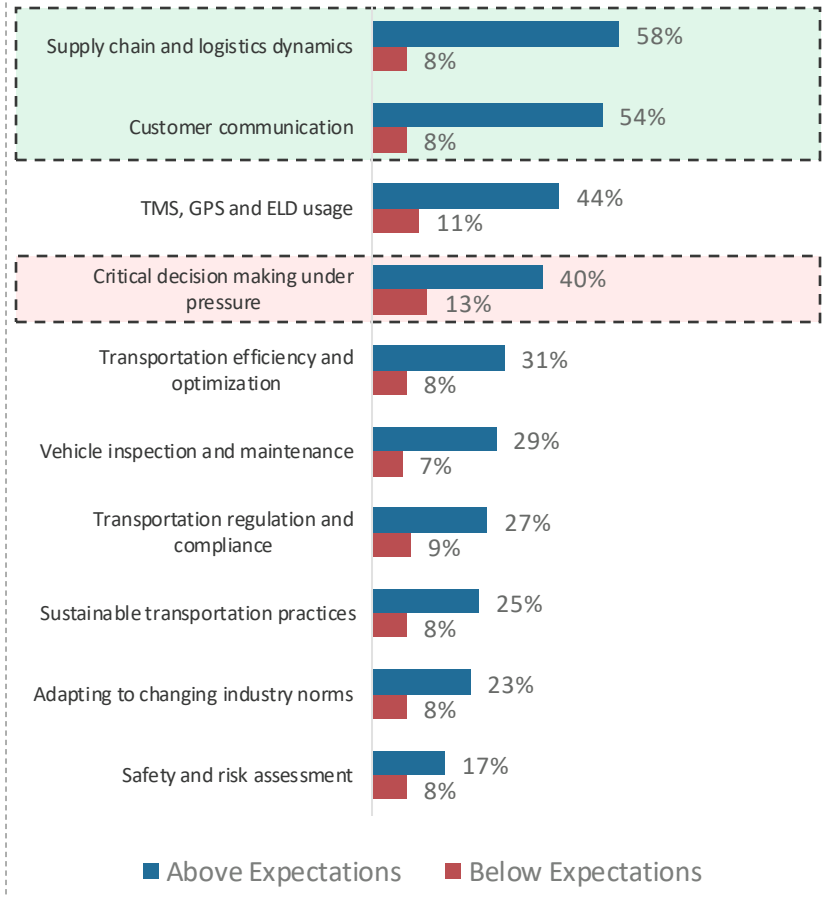
Transportation

*n = 23*

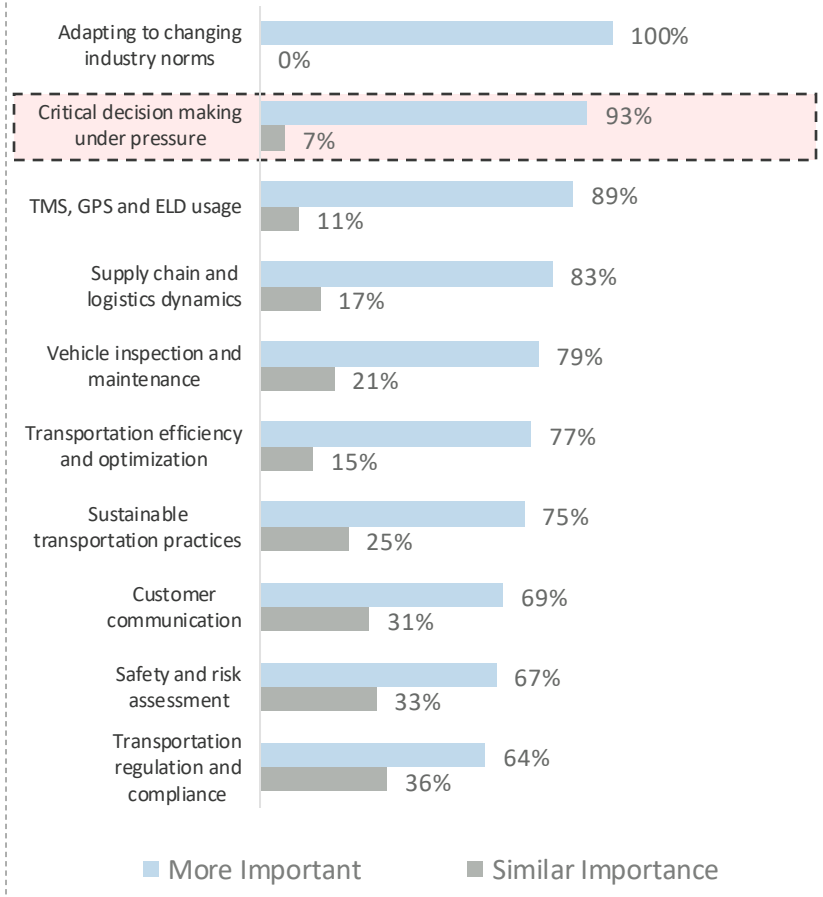
### Expectations for Graduates




### Evaluation of Graduate's Skills




### Future Skill Needs of Graduates

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