



Workforce Development in the Age of Digital

Methodology & Objectives

Goals

- Develop a 360-degree view of the transformation of talent sourcing and training
- Understand ways to develop talent from unconventional sources
- Identify the challenges (perceptual, structural, and otherwise) that stand between the workforce of today and tomorrow
- Evaluate the different perspectives, expectations, and needs when looking at supply and demand sides of the U.S. workforce and labor market

Methodology

	Hiring Managers	School Administrators	Traditional Talent	Unconventional Talent
Screening Criteria	<ul style="list-style-type: none">▪ College degree▪ Hiring Manager at Private Company▪ Over 500 Employees	<ul style="list-style-type: none">▪ College degree▪ School Administrator at Community College	<ul style="list-style-type: none">▪ College Degree▪ Bachelor's, Master's, or Doctorate in STEM field	<ul style="list-style-type: none">▪ Non-STEM degree▪ Interested in pursuing a certificate or credentialed program in STEM
Sample Size	n=109	n=100	n=251	n=250
Data Collection	Online			
Field Dates	Dec – Jan 2019	Dec – Jan 2019	Dec – Jan 2019	Dec – Jan 2019

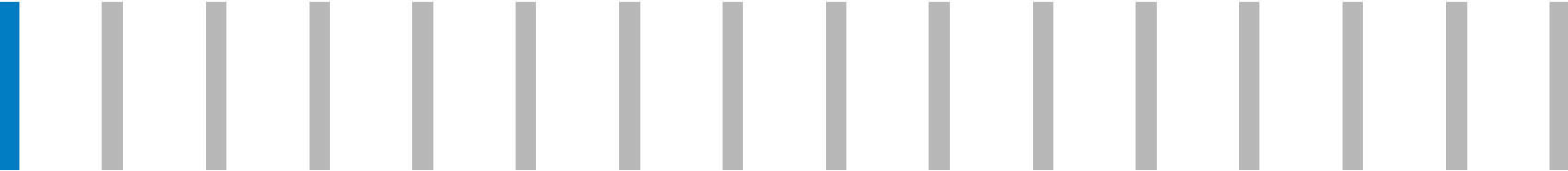
Key Findings

- The workplace is changing rapidly and the workplace ecosystem recognizes the need for new skills to meet the demands of the digital economy
 - There is an expectation the private sector will need to play a bigger role in developing the workforce by providing adaptive, creative training opportunities to develop unconventional candidates
- Digital transformation of the workforce requires more flexibility, adaptability, and creativity
 - Although technical skills are perceived to drive future opportunity, few believe these skills are as important today as non-technical skills such as problem solving, communication, leadership, and social/emotional skills
- There is a disconnect between talent and the private sector regarding the value of intangible skills
 - Social skills, emotional intelligence, leadership, and motivation are all undervalued skillsets among workforce talent
 - Further, students are adjusting to the future workforce's digital needs by enrolling in computer science, but the private sector has indicated they want more well-rounded, adaptive candidates
- Motivations for entering STEM roles differ by Traditional Talent and Unconventional Workers
 - Traditional Talent (STEM majors) are driven by passion to make a difference, however Unconventional Talent view STEM careers as an opportunity to improve their economic standing and develop more skills

Key Findings (continued...)

- Talent recognizes technical skills could create employment barriers in the future, however time and cost barriers prevent many from pursuing further education
 - The private sector is best positioned to alleviate these barriers and needs to develop accessible and flexible development programs for talent who would pursue opportunities with employee subsidies and flexible training opportunities
- Most private companies are not making significant investments in digital and technical training
 - Digital and technical trainings are most often focused on helping workers develop basic digital abilities instead of advanced training
- Training and reskilling of the workforce is viewed as a responsibility of the private sector
 - Responsibility for investing in the workforce lays with private companies and there is strong interest in comprehensive learning programs given their perceived effectiveness
- The perceived impact of AI and automation on the workforce is divided
 - While all groups agree traditional jobs have been displaced as a result of advances in automation/AI, School Administrators and Hiring Managers generally see a universal benefit to this progress; workers are more likely to see themselves as losing out

Workplace of Tomorrow Relies on New Skill Development

A decorative graphic consisting of a series of vertical bars of varying heights and colors. From left to right, there is a tall blue bar, followed by a series of shorter grey bars, and finally a tall grey bar on the far right.

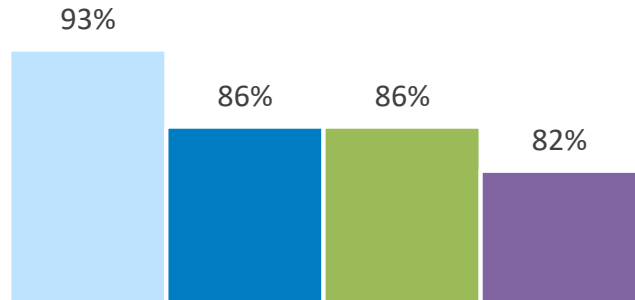
*The **workplace is changing rapidly** and the workplace ecosystem (private sector, higher education, technical & non-technical workers) recognizes the need for reskilling and continuous education to **meet the demands of the digital economy**. There is an expectation the **private sector should play a bigger role in developing the workforce** by providing cutting-edge, creative training opportunities to develop unconventional candidates.*

There is Consensus that Reskilling the Workforce Creates Opportunity

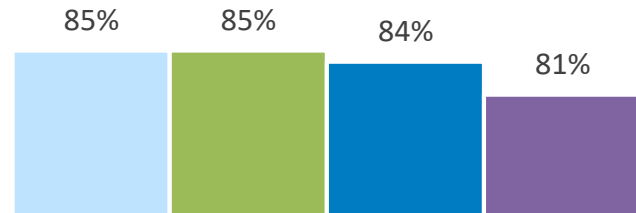
The workplace is rapidly evolving and learning new skills through creative sources will be an essential piece to ensure opportunities for Americans in the future

Workforce Development Attitudinal Statements (% Agree)

It will be increasingly important for candidates to **learn skills in a rapidly evolving environment**



Reskilling and continuous education for existing workers is **needed to ensure American workers can access the opportunities in the future**



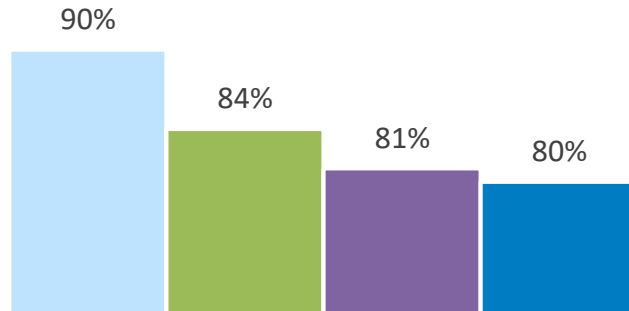
■ Hiring Managers ■ School Administrators ■ Unconventional Talent ■ Traditional Talent

The Digital Economy Creates New Demands of the Private Sector

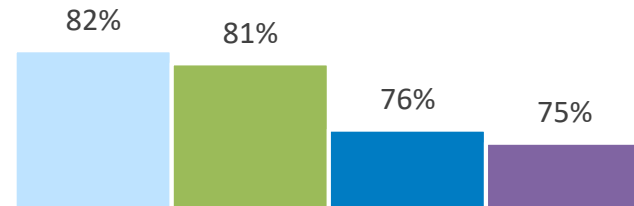
There is an expectation, especially within the private sector, that corporations will need to play a greater role in developing talent to meet the demands of the digital economy

Workforce Development Attitudinal Statements (% Agree)

Workers without formal technical training will need training to learn new skills to **meet the demands of the digital economy**



Corporations must play a greater role in developing unconventional candidates by providing cutting-edge training opportunities to be successful in the future



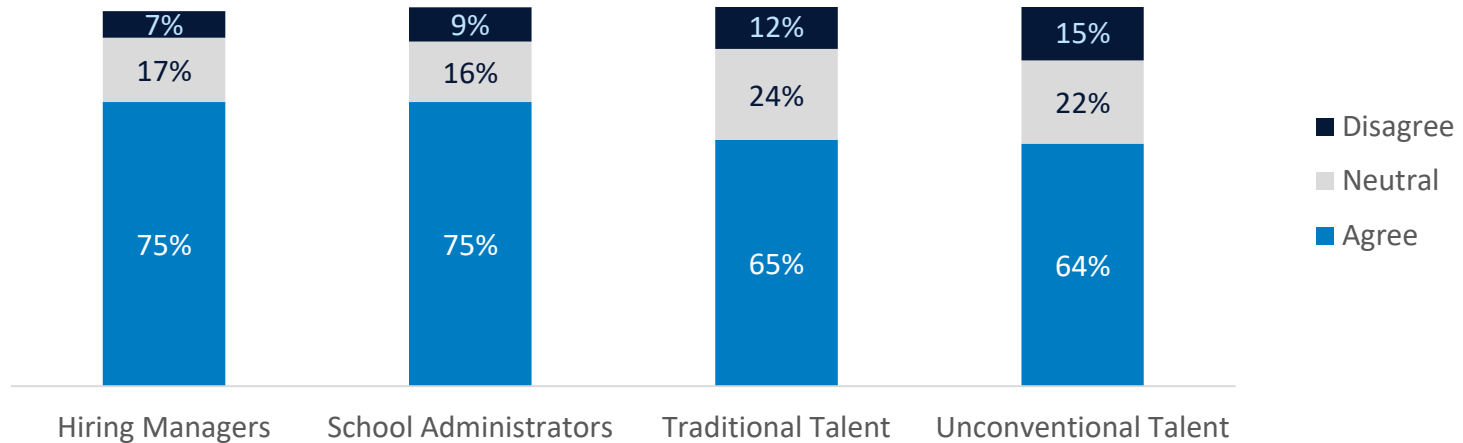
■ Hiring Managers ■ School Administrators ■ Unconventional Talent ■ Traditional Talent

Creative Solutions Will be Needed to Find Adequate Technical Talent

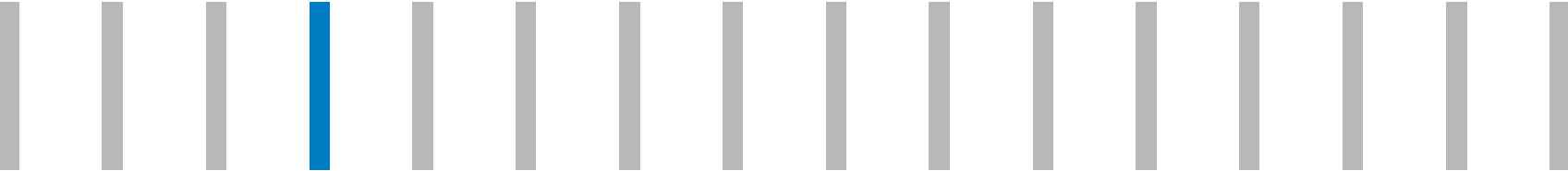
Despite the recognition that there is a need for more digital and technical skills to meet future workplace demand, finding workers today is becoming more difficult

Workforce Development Attitudinal Statement on Digital Skills

Finding workers with adequate digital and technical skills is becoming more difficult.



Adapting to the Digital Transformation of the Workforce



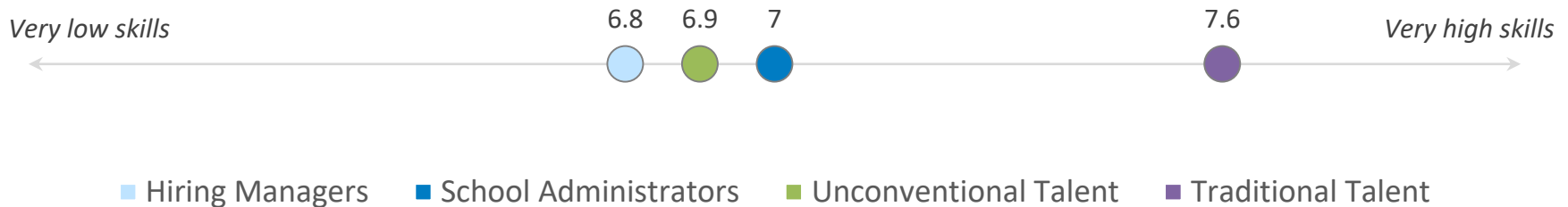
*Current evaluations of workers' and students' **technical and digital skills** are relatively **modest**. Although technical skills will drive opportunity, **few believe these skills are as important today as non-technical skills**. This view states that digital transformation of the workforce requires more **flexibility, adaptability, and creativity**, than hard technical skills.*

*Students are adjusting to the future workforce digital needs by **enrolling in computer science**, but the private sector wants more well-rounded, adaptive candidates. There is a **disconnect between talent and the private sector around the value of intangible skills**.*

Evaluations of Current Technical and Digital Skillsets are Modest

With the exception of Traditional Talent, evaluations of the technical skills of workers today is not particularly high and has opportunity to improve to meet future demand

Average Rating of Digital and Technical Skills (0-10 Scale)

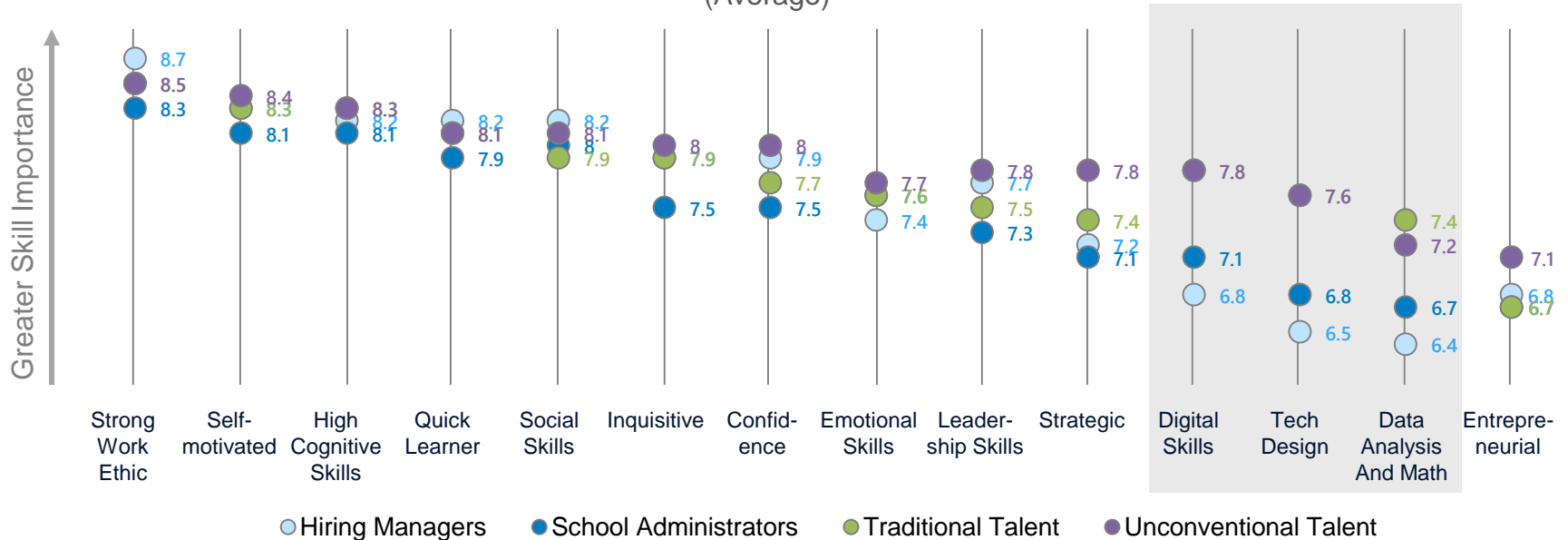


(Hiring Managers) How would you rate the digital or technological skills of the candidates you are hiring to perform the work your company needs today? (School Administrators) How would you rate the digital or technological skills of your students who are entering the workforce today? (Traditional Talent) How would you rate the digital or technological skills of each of the following individuals or groups to address your company's needs today? (Unconventional Talent) How would you rate your current digital or technological skills to address the needs in today's job market?

Technical Skills are Not Most Important to Companies Today

Despite a recognized need to reskill workers to meet the demands of the digital economy, many do not consider technical skills as important as non-technical skills in the workplace today

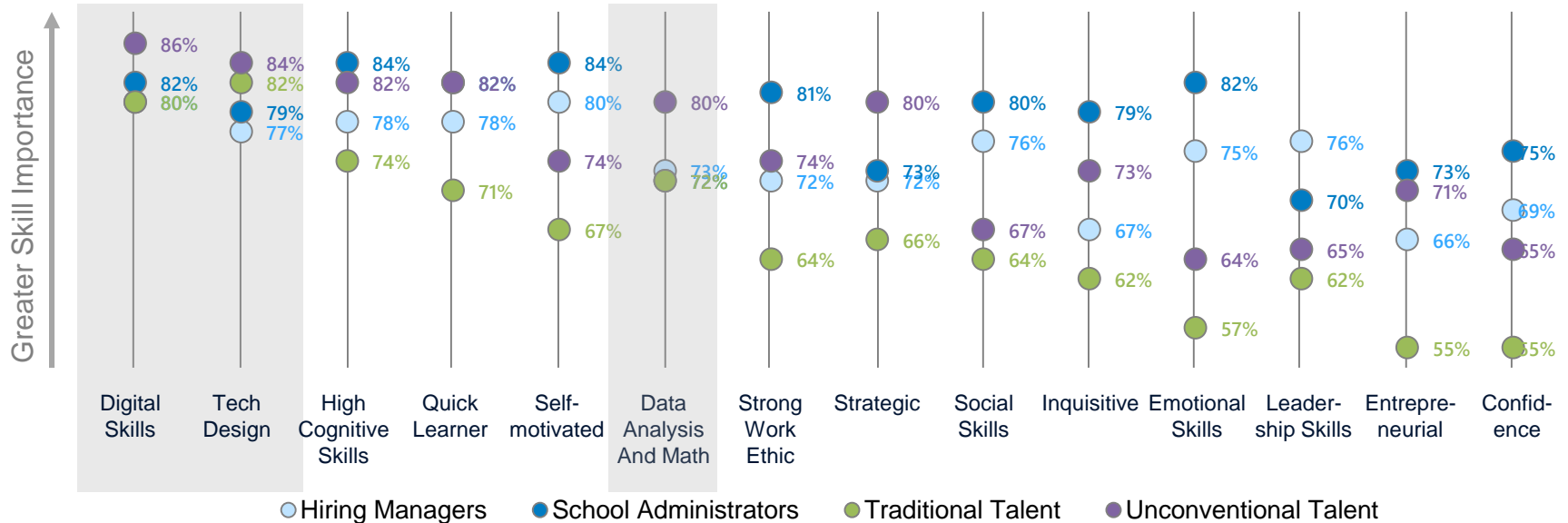
Importance of Specific Skillsets
(Average)



The Expectation is Technical Skills will be More Important in the Future

Although many consider digital and technical skills to be less important than other skillsets, key groups expect the workforce to rely more on technical skills in 10 years

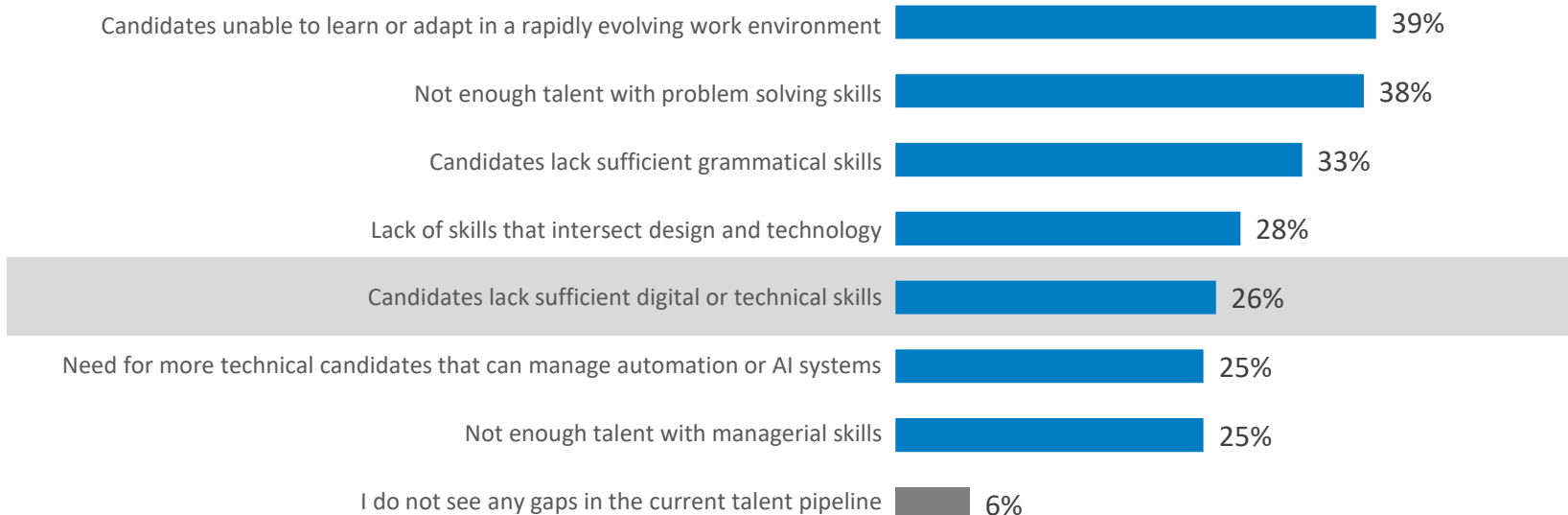
Importance of Specific Skillsets in 10 years
(% More Important)



Digital Transformation of the Workforce Requires More Intangible Skills

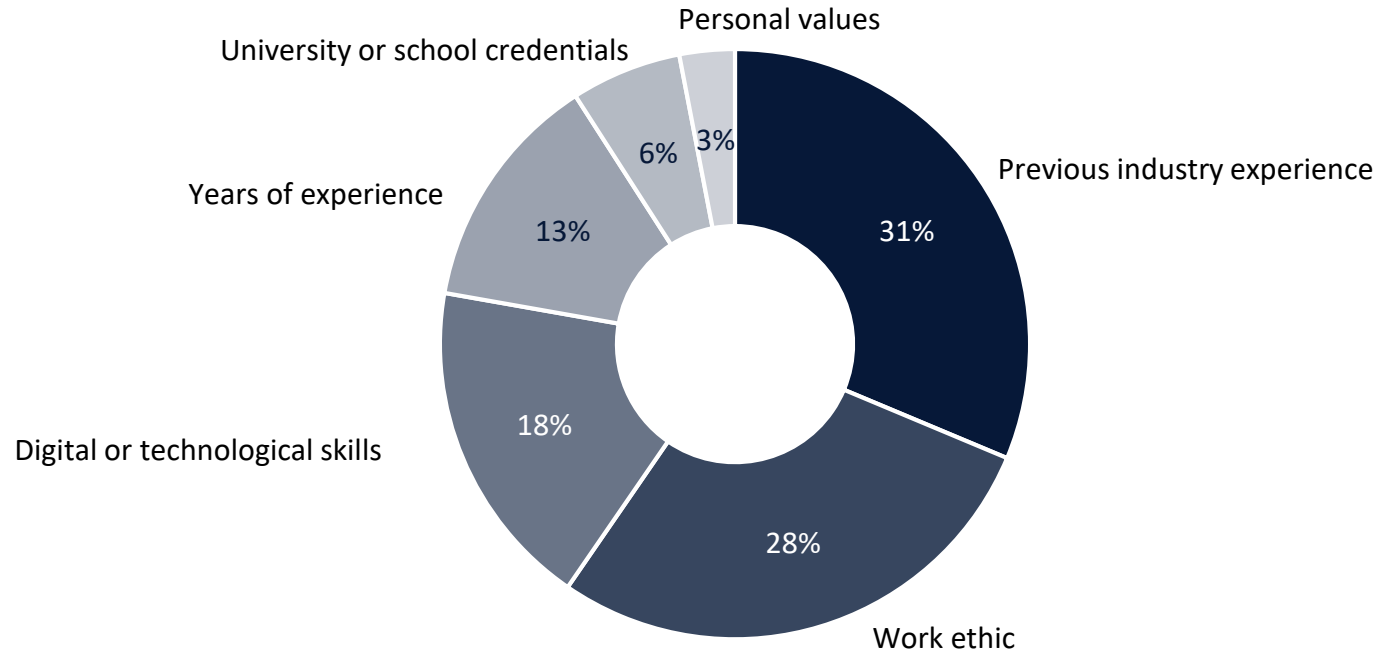
While digital skills may be lacking for private companies, the digital transformation of the workforce requires more flexibility, adaptability, and creativity, rather than hard technical skills

Talent Pipeline Gaps For Private Companies



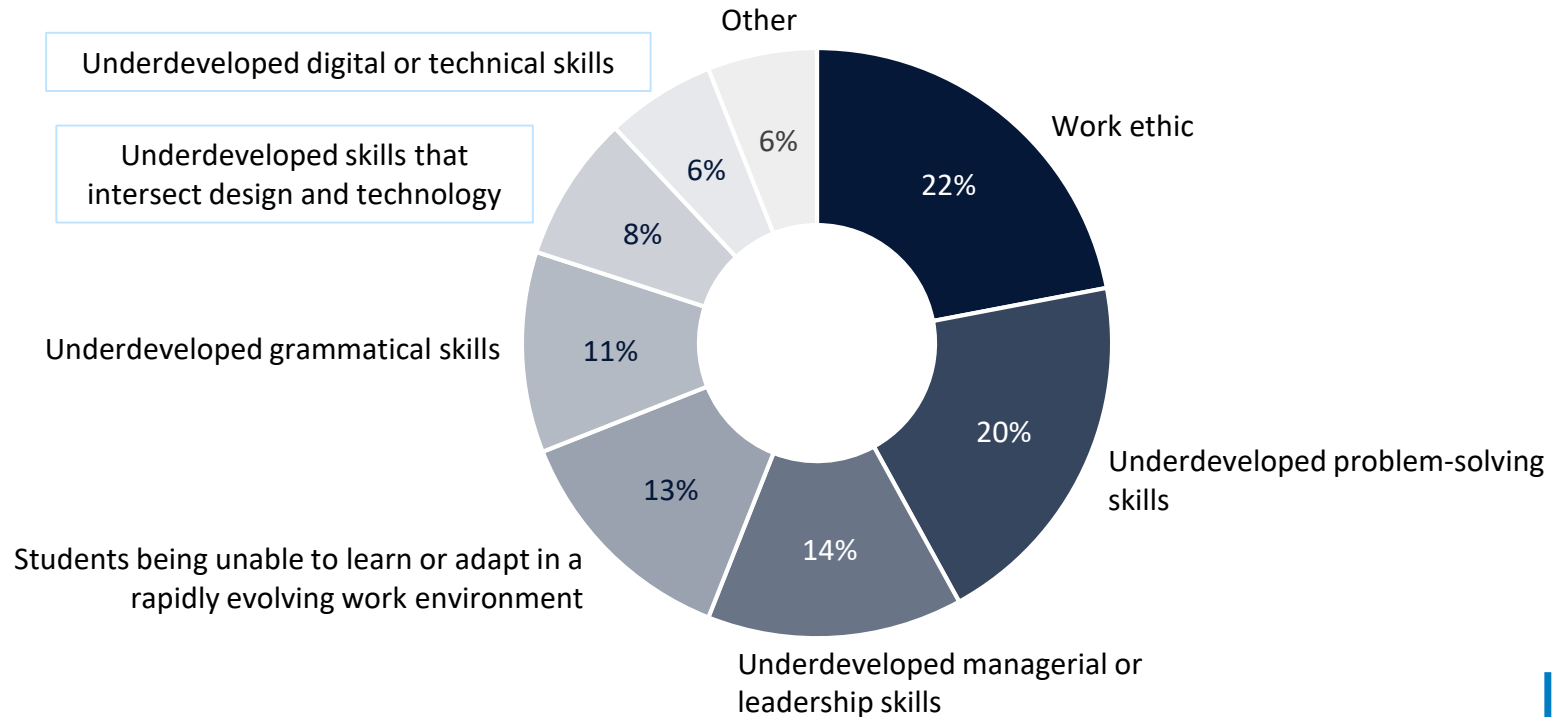
Hiring Managers Prioritize Experience and Work Ethic Over Technical Skills

Previous industry experience and work ethic are most important to Hiring Managers in the private sector, with technical skills ranked as the third most important factor



Lowering Technical Barriers for Students is Not a Priority for Schools

School Administrators believe non-technical skills are the greatest challenge for community college students looking for employment after graduation, not underdeveloped technical skills



The Private Sector Shows a Desire for More Dynamic Young Talent

Most feedback from employers to School Administrators is not about student technical skills, but is focused on concerns over student communication skills, motivation, and drive

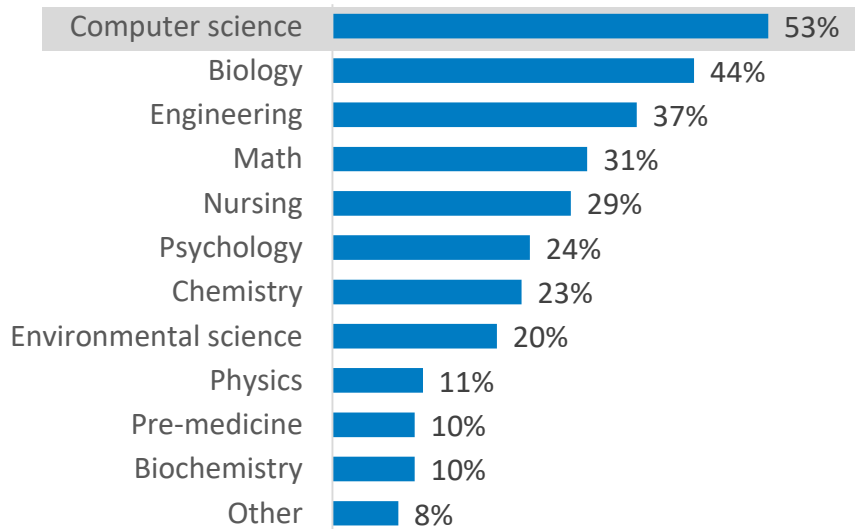
Private Sector Feedback to Community Colleges



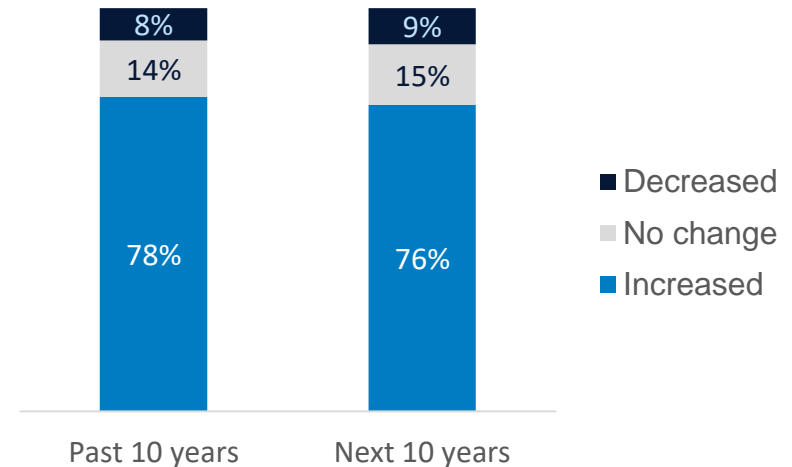
While the Private Sector Prioritizes Adaptability, Students Prepare Digitally

Student enrollment in computer science is expected to increase, however the private sector has demonstrated a desire for more dynamic problem-solvers, not just technical workers

Most Popular Courses



Past and Future Change in Demand For Computer Science

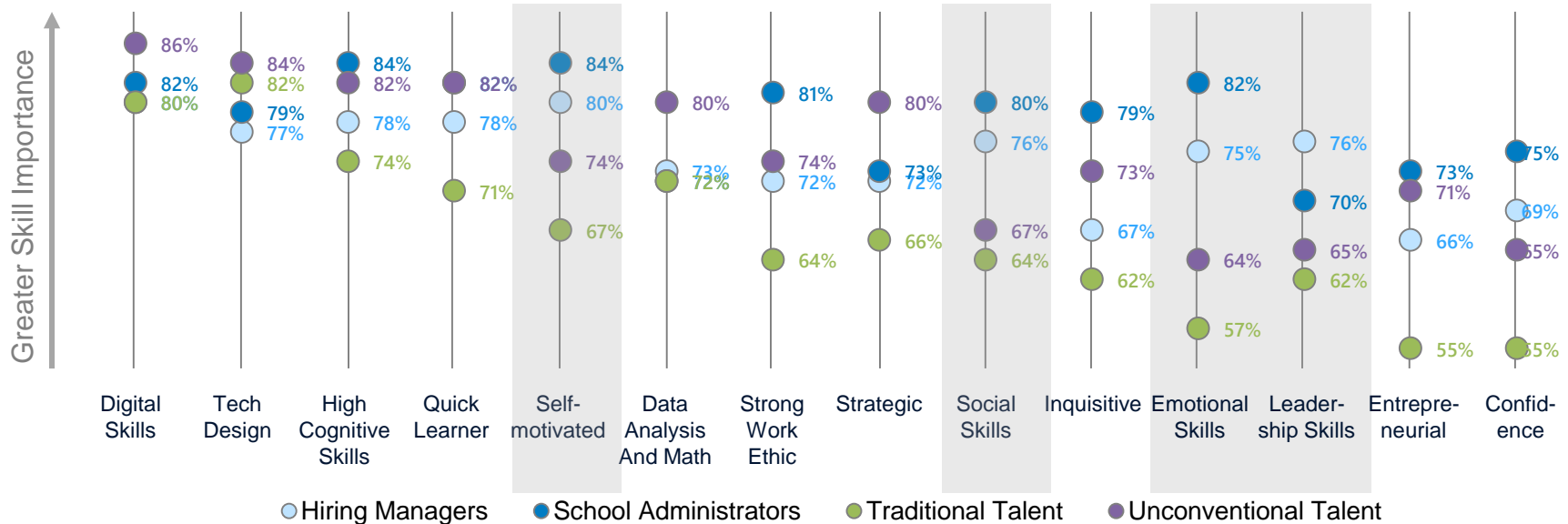


(School Administrators) What are the top 3 most popular science, technology, engineering, or math classes at your community college? Over the past 10 years, how has demand for each of the following classes changed? In the next 10 years, how do you anticipate demand for each of the following classes to change?


Disconnect Exists with Talent on the Emerging Importance of Intangible Skills

Social skills, emotional intelligence, leadership, and motivation are all undervalued by the workforce compared to Hiring Managers and School Administrators

Importance of Specific Skillsets in 10 years
(% More Important)



Driving Interest in STEM Careers

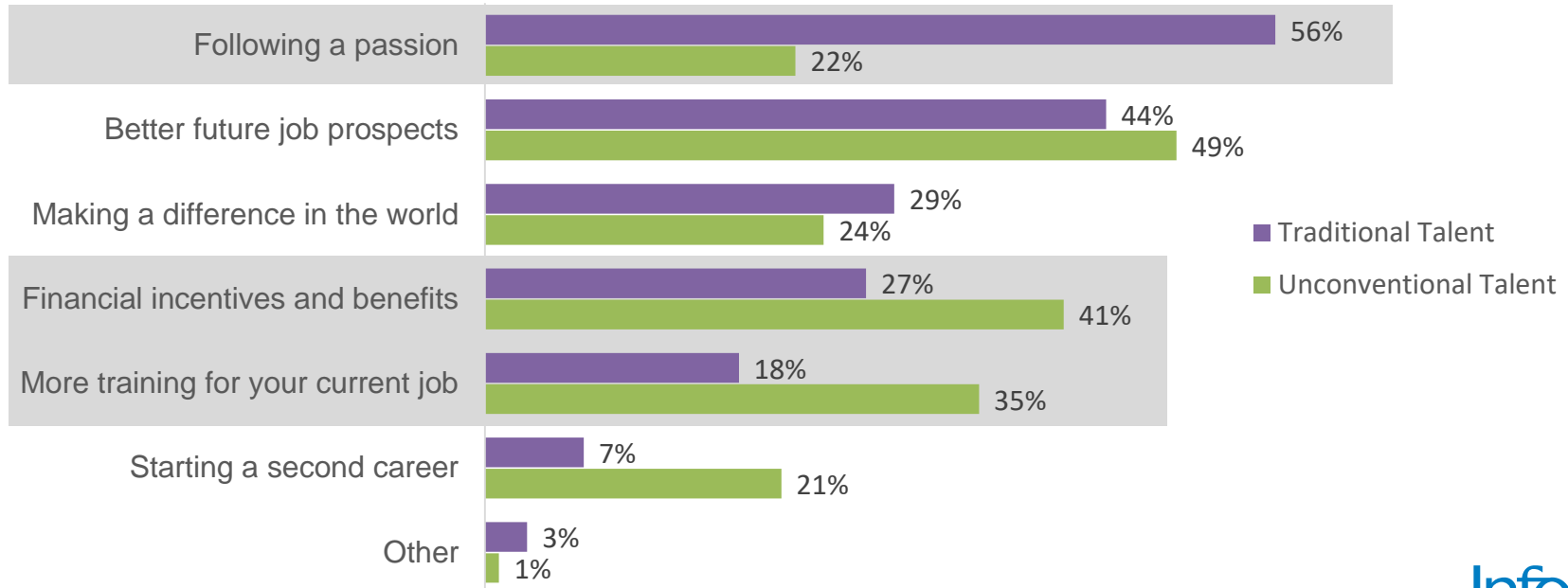


*Understanding the motivations of the workforce will be important for private companies in the future. **Traditional Talent (STEM Majors)** are driven by passion to make a difference, however **Unconventional Talent** view STEM careers as an opportunity to improve their economic standing and develop more skills.*

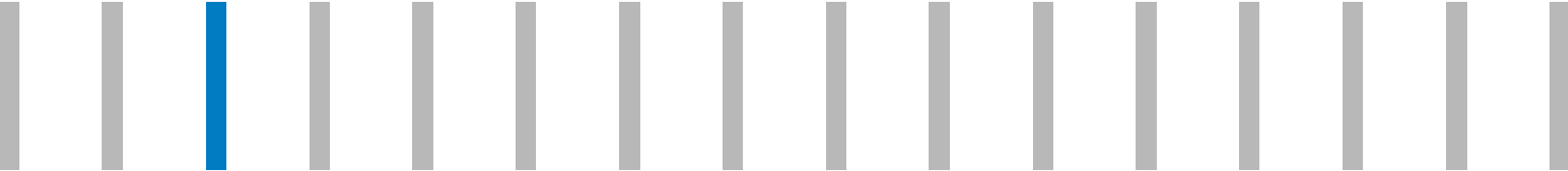
The Workforce has Differing Motivations for Pursuing STEM Careers

Traditional Talent enter a STEM field because they are passion-driven, however Unconventional Talent are instead driven by financial incentives and better job prospects

Driving Interest in STEM Careers



Barriers to STEM Careers

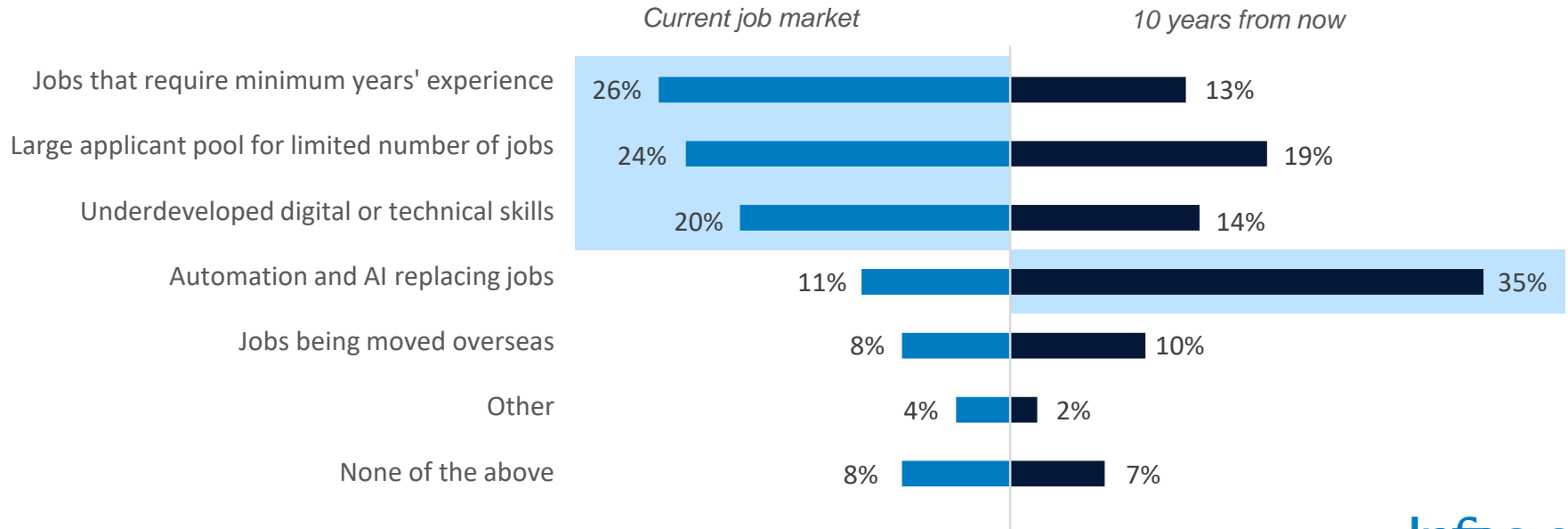


Workers *recognize the emerging impact of AI and automation*, and Unconventional Talent understands this will drive *greater need for technical skills*. Since the *time and cost of specialized training* for technical careers are the greatest barriers for workers to enter STEM careers, *the private sector is best positioned to alleviate these barriers*.

Traditional Talent Expect Automation and AI to Become a Top Barrier

While Traditional Talent consider worker credentials (experience, competition, skills) to be the biggest barriers to employment today, automation and AI are expected to be the future barrier

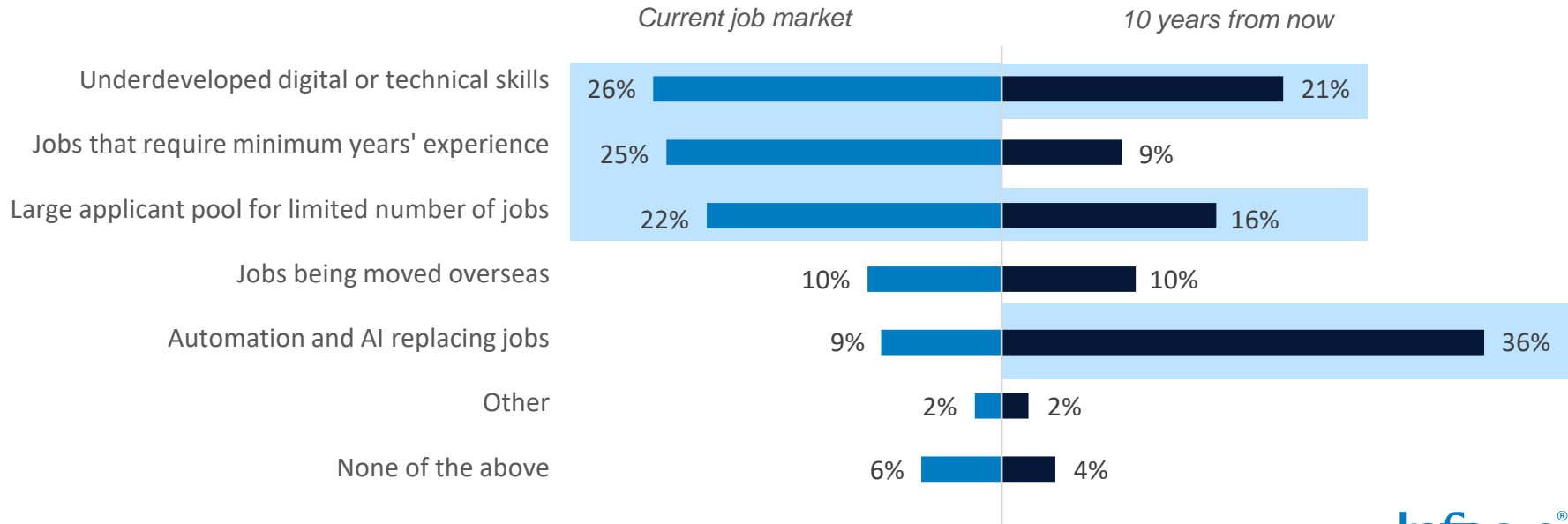
Biggest Barriers to Employment



Unconventional Talent View Both AI and Technical Skills as Future Barriers

Unlike Traditional Talent, Unconventional Talent recognize that the rise of automation and AI will create a greater need to develop technical skills for more employment opportunities

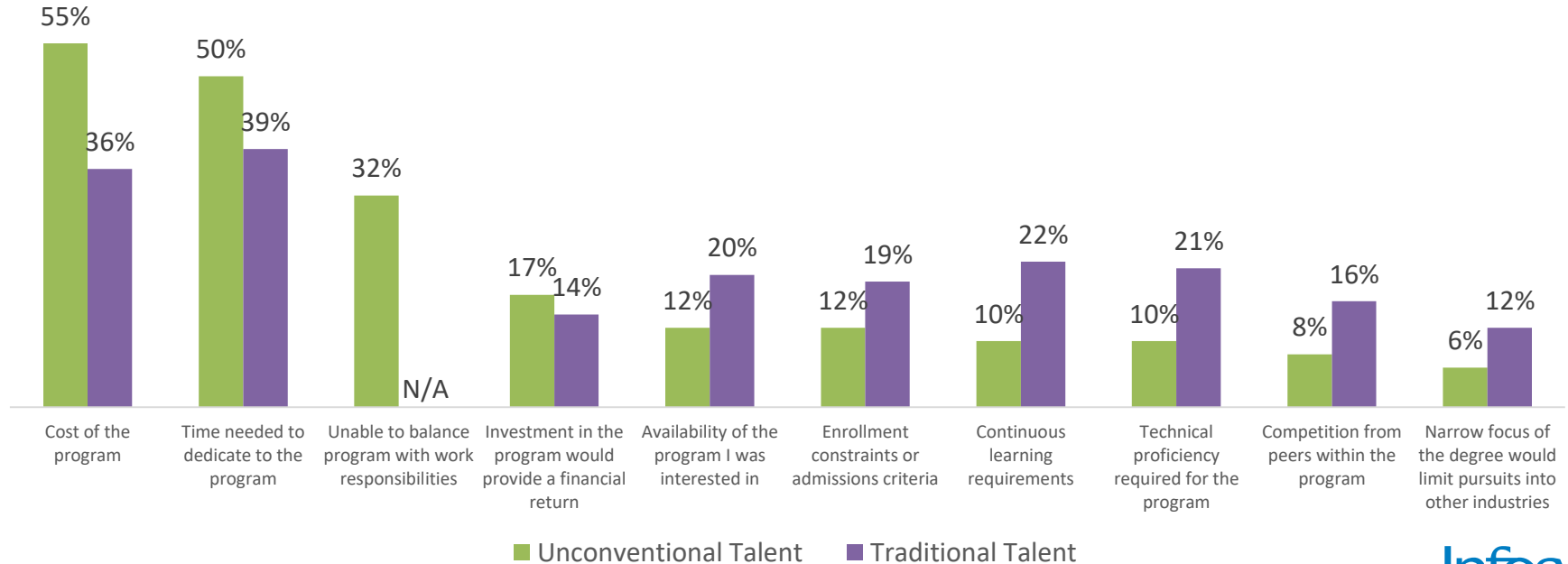
Biggest Barriers to Employment



Lowering Barriers for Talent Requires Accessibility and Flexibility

There is a need to develop accessible and flexible development programs for Unconventional Talent, who view cost, time, and work balance as the biggest challenges to continuing education

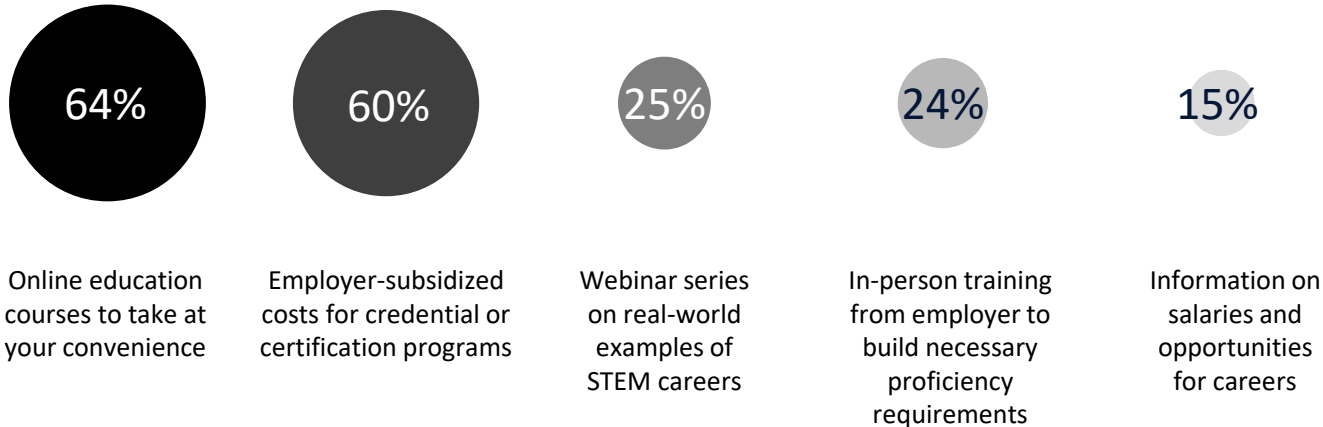
Greatest Challenge For Pursuing STEM Careers



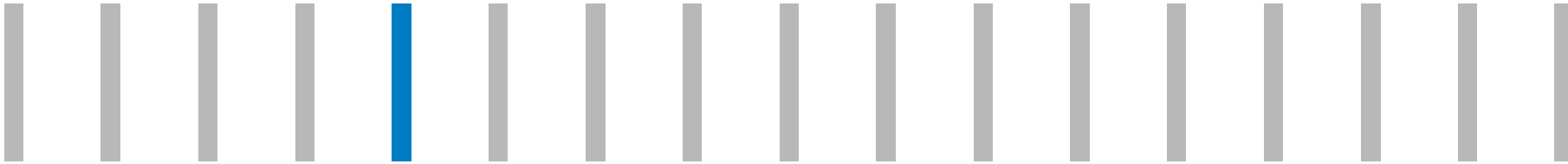
Providing Employer-Subsidized Training Lowers Barriers

The best resources to reduce barriers for Unconventional Talent are online courses and employer-subsidized programs, which provide accessibility and flexibility

Resources to Overcome Barriers



Current Training for Today's Workforce



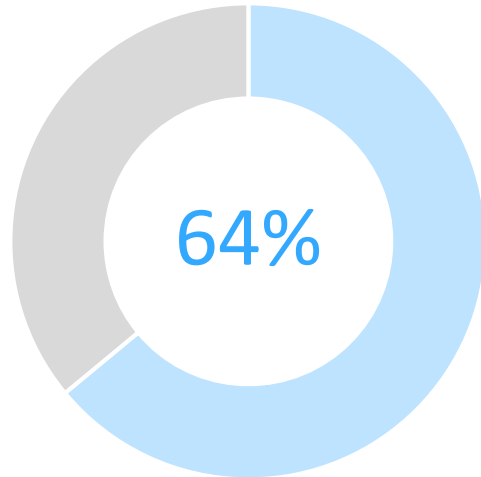
*Most workers are receiving at least **some digital and technical training**. However, these types of training are most often focused on helping workers **develop basic digital abilities instead of advanced training** that could open more opportunities. This is mostly because private companies are **not making significant investments in digital and technical training**.*

Across the Workplace Ecosystem, Digital Training Opportunities are Offered

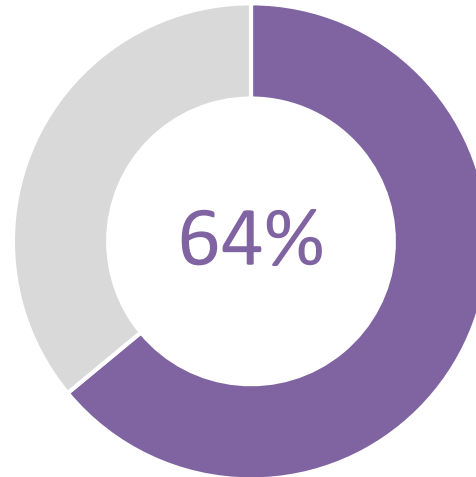
Companies with Traditional and Unconventional Talent are providing training and development opportunities to help address digital and technical needs

Offers Company Training and Development Opportunities
(% Total)

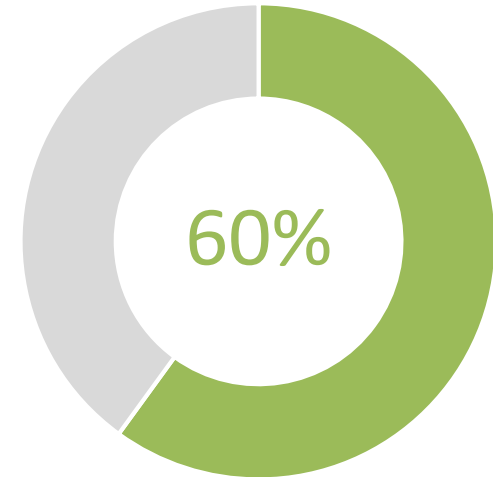
Hiring Managers



Traditional Talent



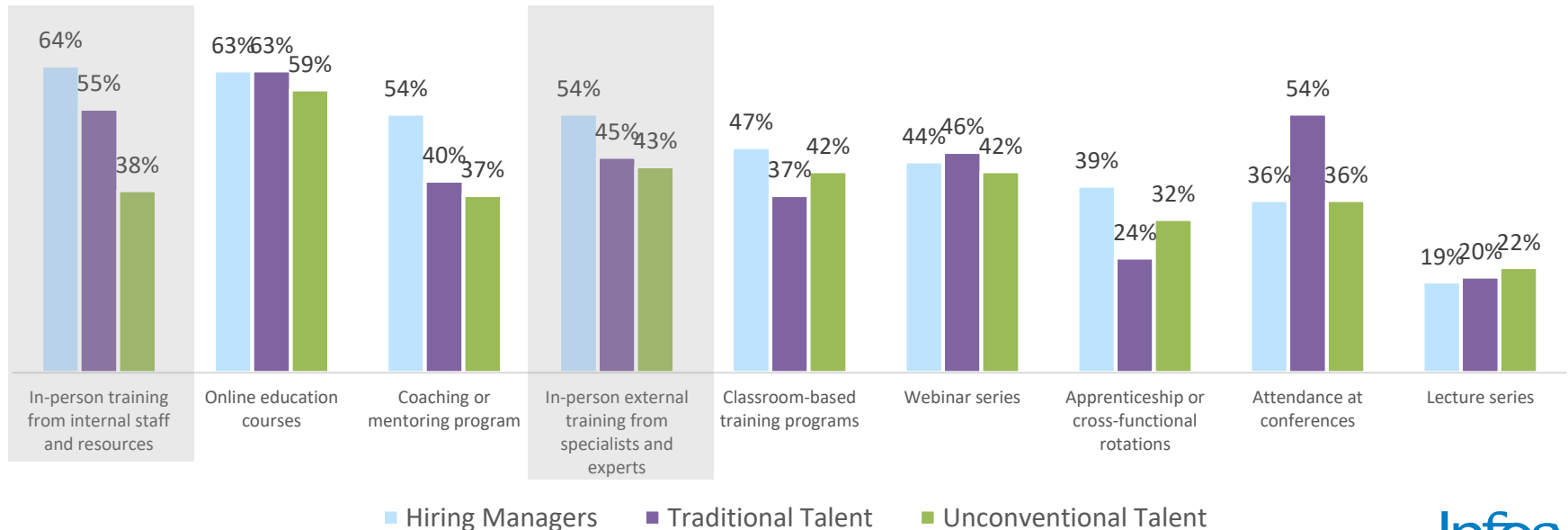
Unconventional Talent



Unconventional Talent Does Not Receive In-Person Training as Often

Although Unconventional Talent receives some training opportunities, fewer are in-person or specialized in comparison to Traditional Talent opportunities

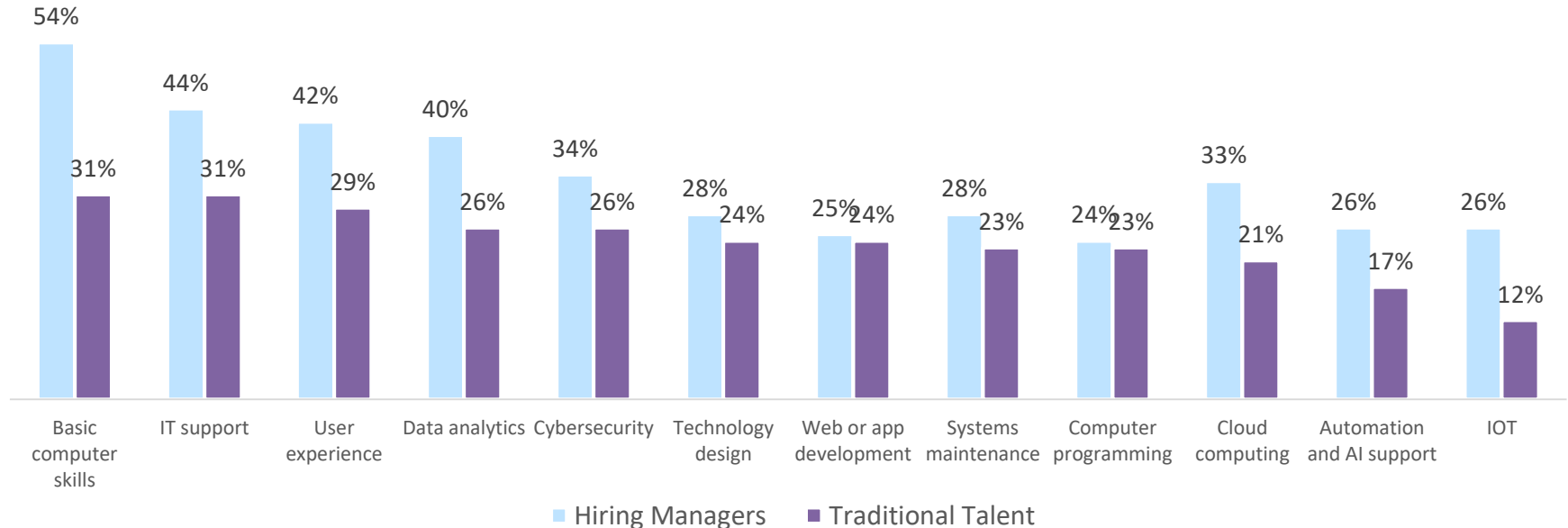
Types of Training Opportunities



Most Digital and Technical Training is Not Advanced

Most training offered by companies helps workers meet a minimum threshold of digital ability; fewer are receiving training in advanced technical skills to help drive future opportunities

Specific Topics of Digital and Technical Training



Companies are Not Making Large Investments into Digital Training

Hiring Managers indicate there is relatively limited investment towards technical training, again highlighting that the depth of digital training offered is relatively shallow

Median Monetary and Hourly Investment for
Digital & Technical Training

\$1,000

per employee per year
for training and
developing digital or
technological skills

40 hours

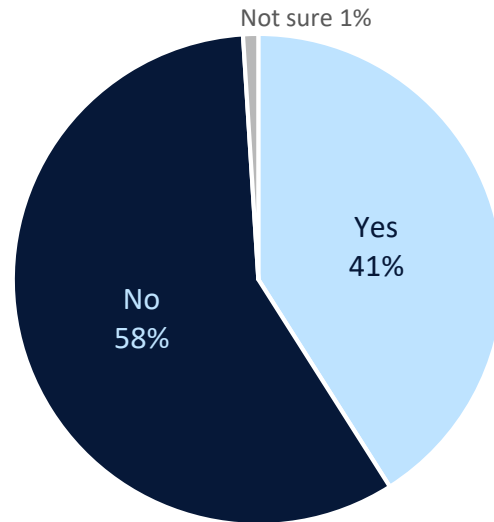
per employee per year are
dedicated to training and
development for digital
and technological skills

(Hiring Managers) On average, how much money does your company invest on each employee per year for training and developing digital or technical skills? | On average, how many hours per employee are dedicated to training and development for digital or technological skills?; MEDIAN FIGURES ARE PRESENTED


Educational Partnerships are Underutilized and Present Opportunity

Most companies do not have formal educational partnerships, demonstrating an opportunity for companies to create programs that both benefit workers and attract talent

Educational Partnerships with Universities & Community Colleges



Training the Workplace of Tomorrow

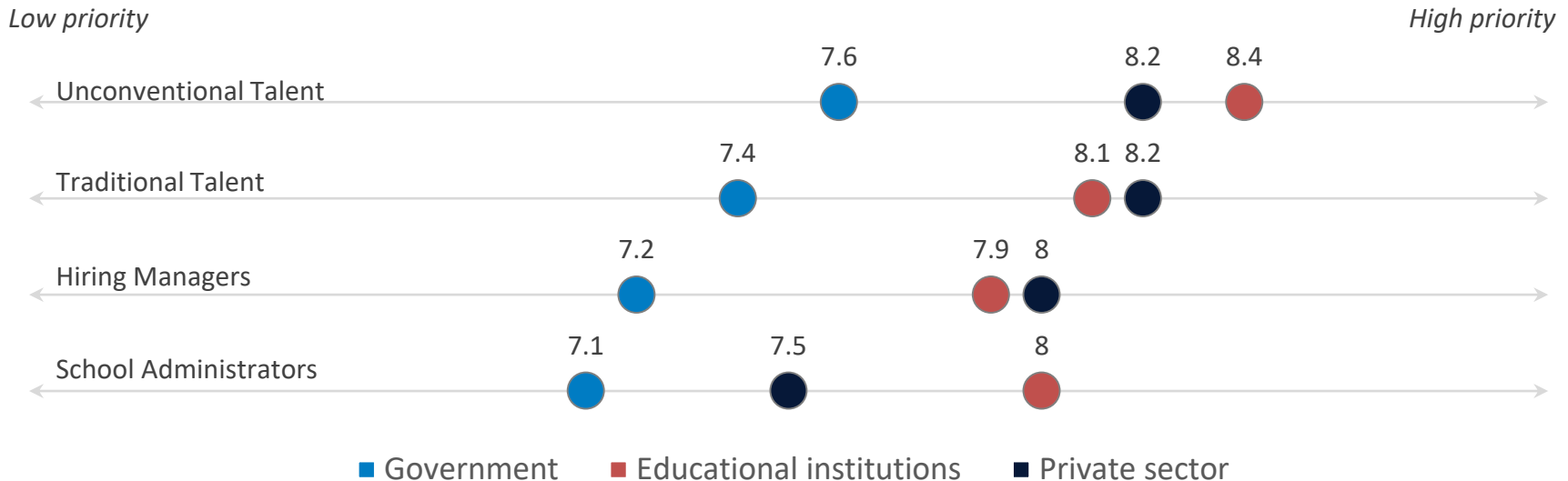


*Training and reskilling of the workforce is viewed as **a priority for the private sector** to address. Investment in comprehensive learning programs **garners strong support among the workforce based on their effectiveness** at training employees in new technologies. There is also acknowledgement that training the workforce of tomorrow **doesn't just benefit companies, but regional economies as well.***

Training the Workforce of Tomorrow is a Private Sector Responsibility

Though the workplace ecosystem believes educational institutions are responsible for reskilling, many consider it a top responsibility of the private sector to spearhead

Priority of Reskilling and Training American Workers
(0-10 Scale)



(All Audiences) For the U.S. to remain the global leader in innovation, how much of a priority is the reskilling and training of American workers in science, technology, engineering, and math for each of the following groups? For each, please select a response between 0-10, where 0 is Low Priority and 10 is Top Priority.

Private Companies Can Leverage Interest in Intensive Learning Programs

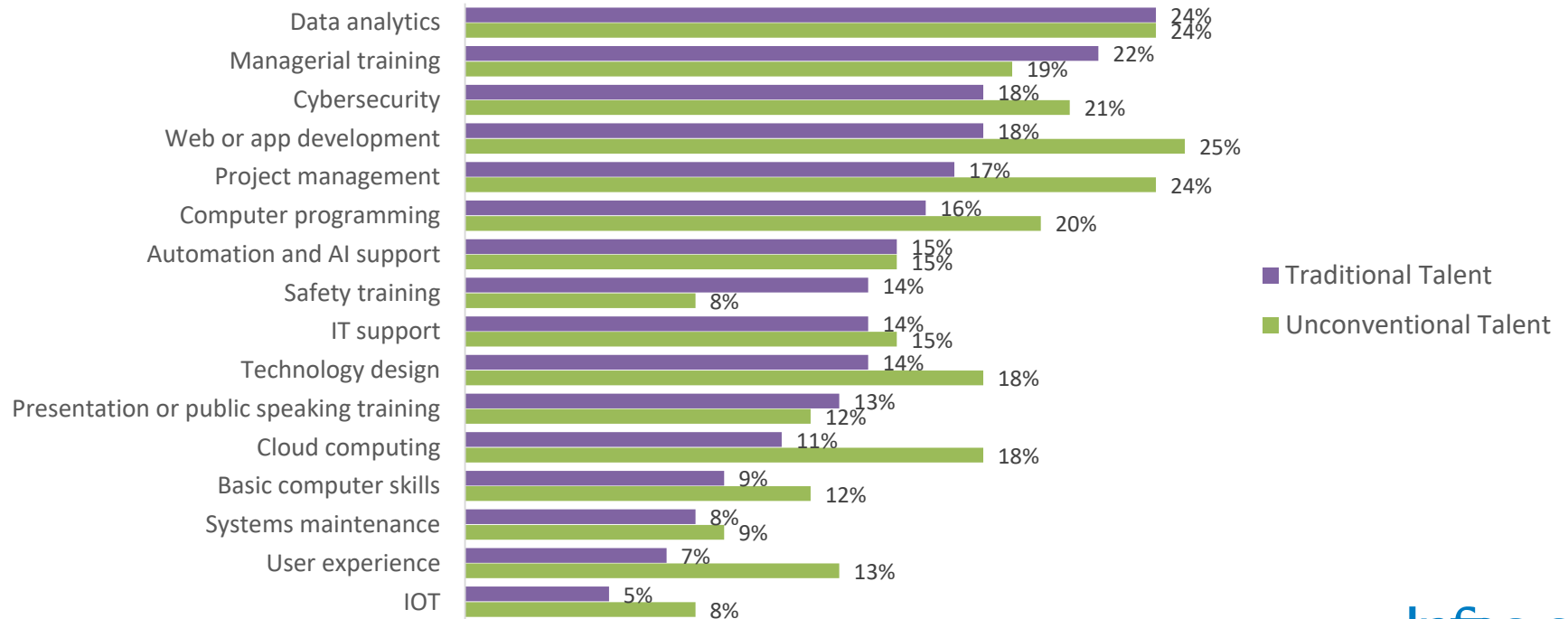
For private companies to reskill the workforce, there is strong interest in comprehensive, in-person training programs

Interest in Comprehensive Training Opportunities



Unconventional Talent Show Strong Drive in Developing Advanced Skills

Interest among Unconventional Talent in specific technical training offerings is highest for web development/programming and data analytics

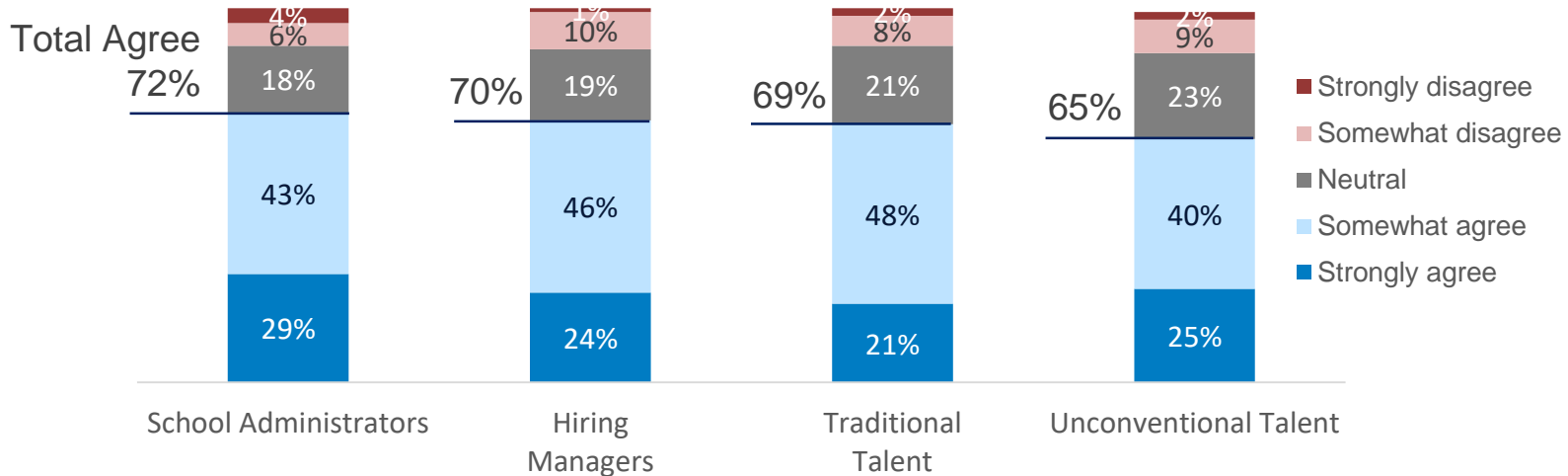


Groups Recognize the Direct Economic Benefits of Reskilling Workers

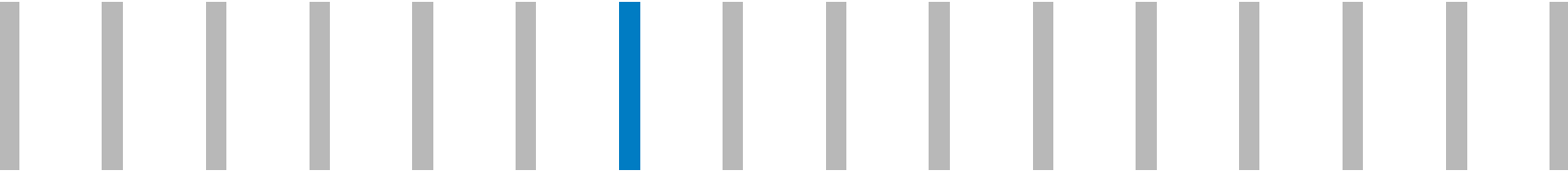
Training the workplace of tomorrow doesn't just impact companies directly, but the entire regional economy where the companies are based

Workforce Development Attitudinal Statement on Training

Training displaced workers without formal technical training can jumpstart regional economies



Impact of AI & Automation



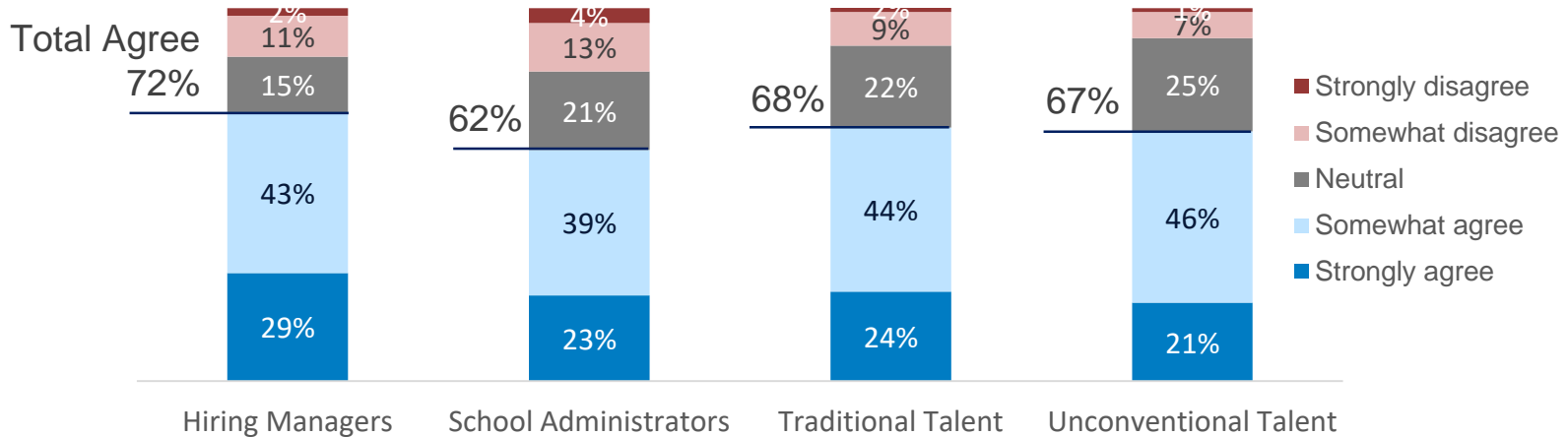
*The perceived **impact of AI and automation on the workforce is divided**. While groups agree traditional jobs have been displaced as a result of advances, School Administrators and Hiring Managers **generally see a universal benefit in automation and AI advances**. Workers, especially Unconventional Workers, are **more divided and are more likely to see themselves as losing out**.*

The Workplace Ecosystem Recognizes Jobs are Lost to Automation & AI

Workers, private companies, and schools agree traditional jobs are being displaced, but agreement is relatively tepid

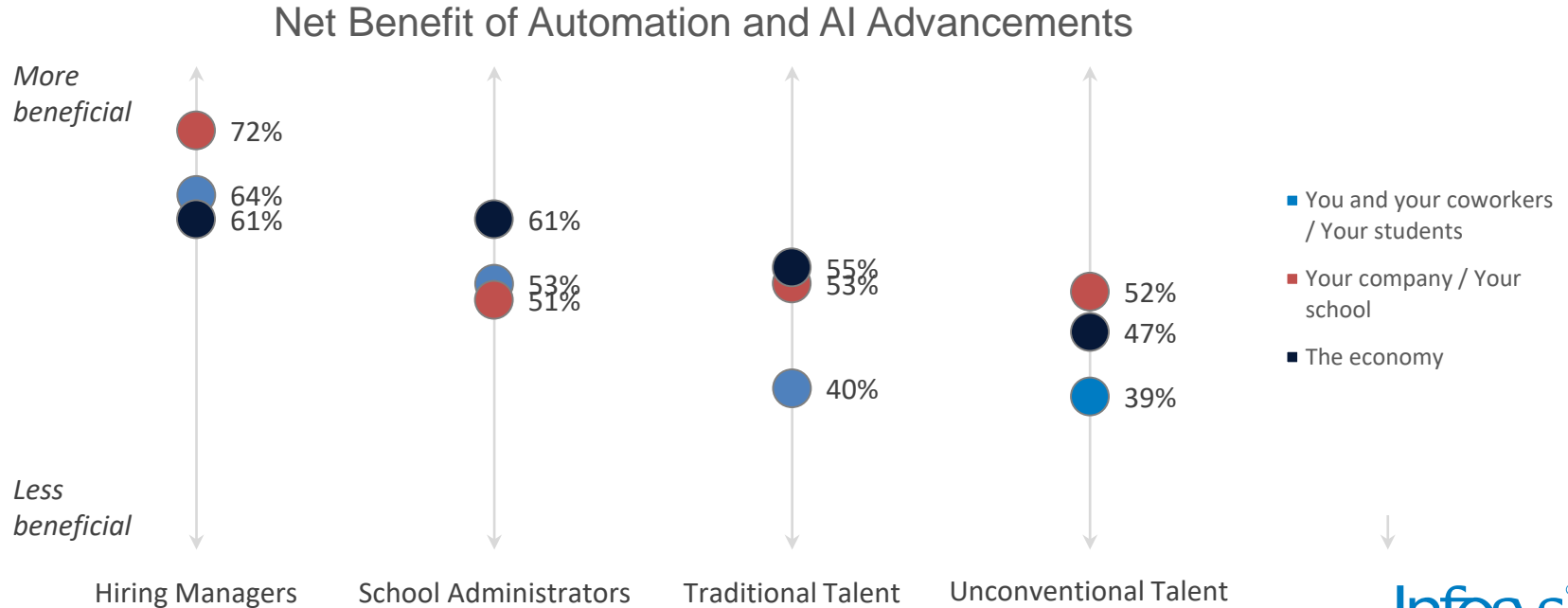
Workforce Development Attitudinal Statement on Automation

Traditional jobs are being displaced because of advances in automation and AI



Companies Need to Help Guide Workers into an AI-Enabled Economy

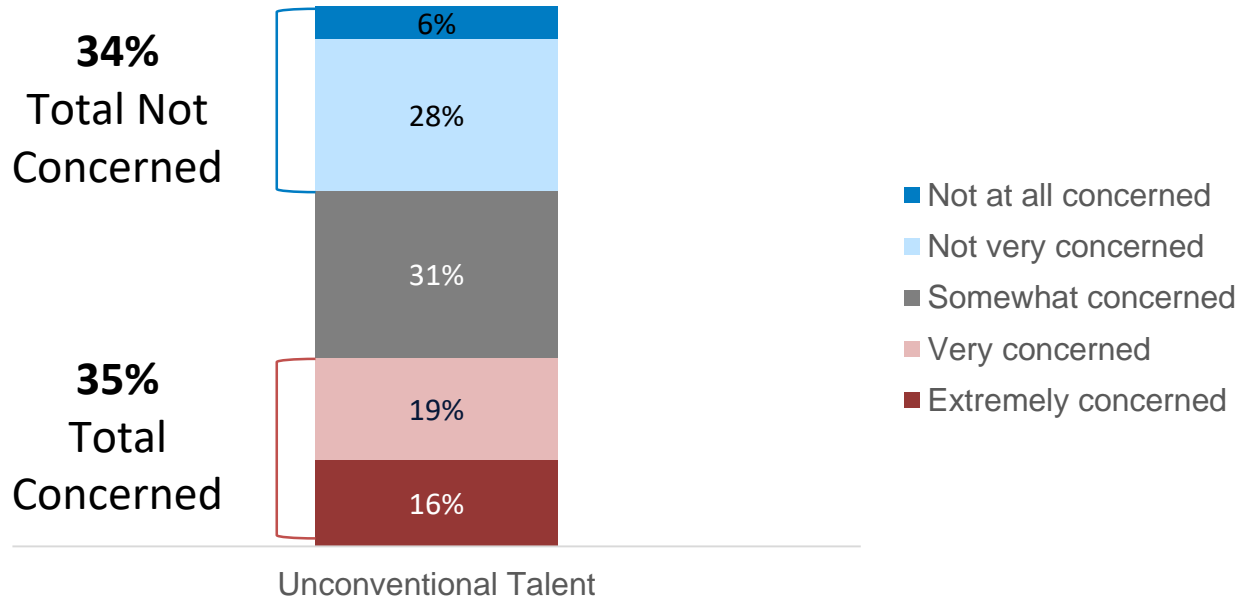
School Administrators and Hiring Managers see a universal benefit in automation and AI, but workers are divided and are more likely to see themselves as losing out with advances in AI



Automation/AI is Particularly Concerning for Unconventional Talent

Concern that automation and AI will replace jobs is relatively high among Unconventional Talent, highlighting the responsibility of companies to provide guidance and solutions for workers

Concern of Automation and AI Replacing Jobs



Schools Do Not Believe Students Have Been Negatively Impacted by AI Yet

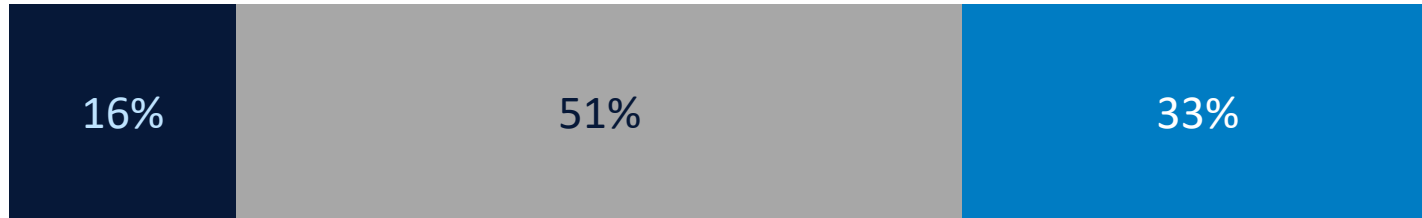
The negative impact of AI or automation advancements have not been felt by School Administrators; if anything, they feel automation has helped find job opportunities

Impact of Automation and AI on Student Job Opportunities

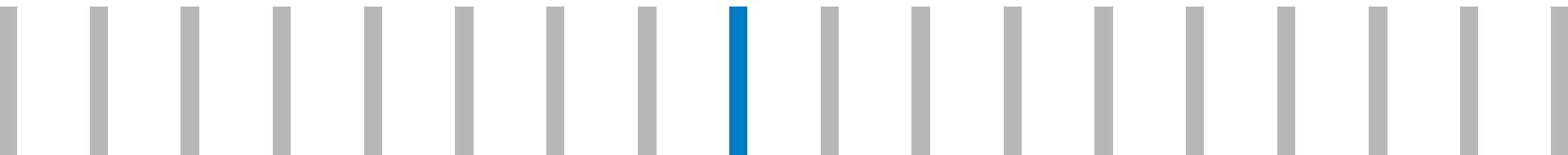
Have made it harder to find job opportunities and careers

No impact

Has made it easier to find job opportunities and careers



Gender Diversity in the STEM Workforce

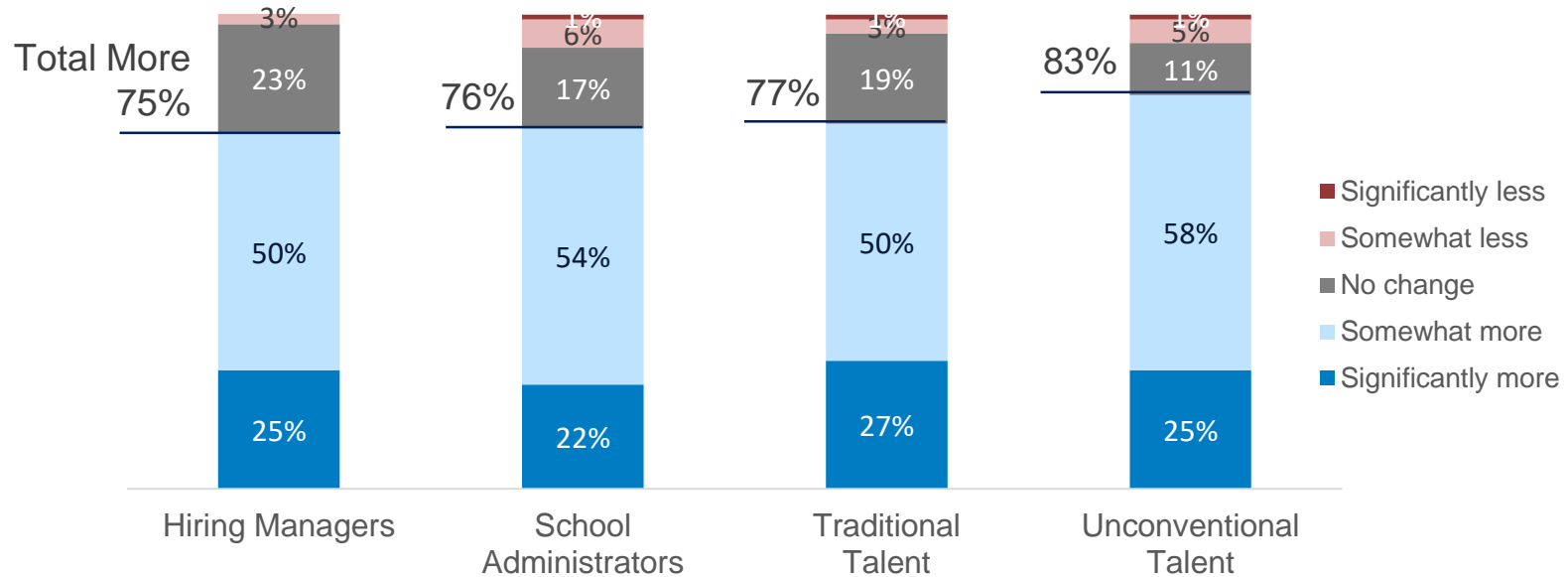


*Across the workforce ecosystem, groups have noticed **more gender diversity in STEM careers and coursework**. Improvement of gender diversity over the past 10 years has not necessarily been the result of proactive measures taken in the private sector or at community colleges.*

Significant Growth in Women Representation in STEM has been Noticed

Commonly across the workforce ecosystem, groups have noticed an increase in women representation in the sciences; this has been recognized by both men and women equally

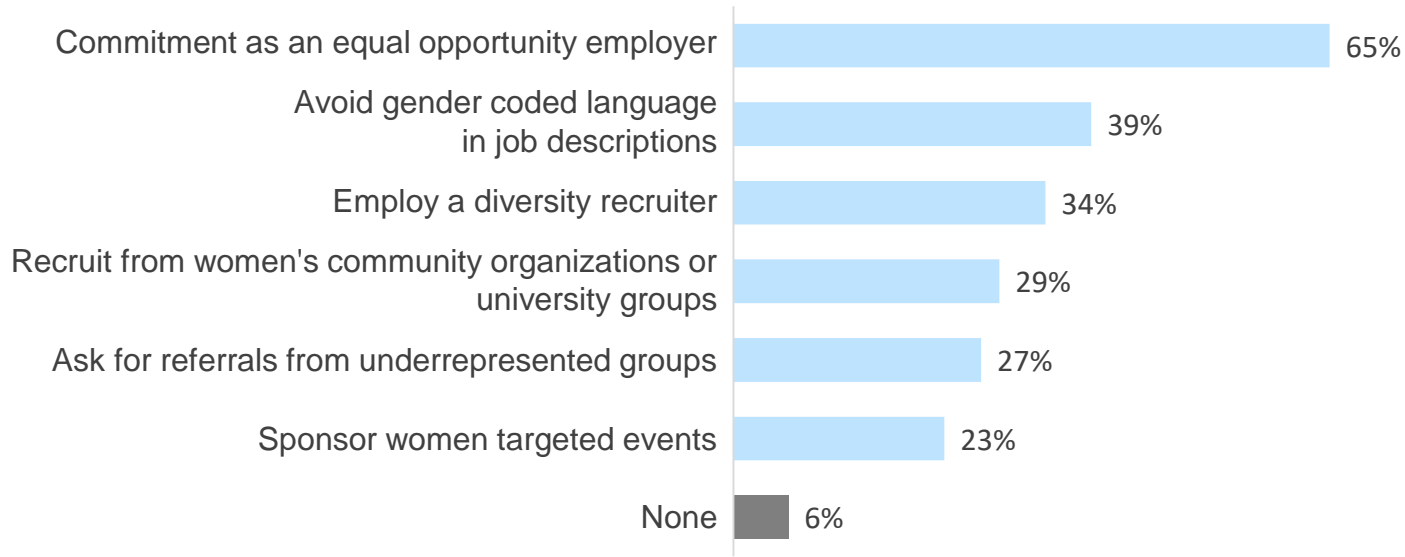
Change in Women Involved in STEM Career in Last 10 years



Gender Diversity Initiatives Have Remained Mostly Broad

Outside a commitment to being an “equal opportunity employer” to improve gender diversity, fewer companies are doing targeted activities to involve more women in STEM careers

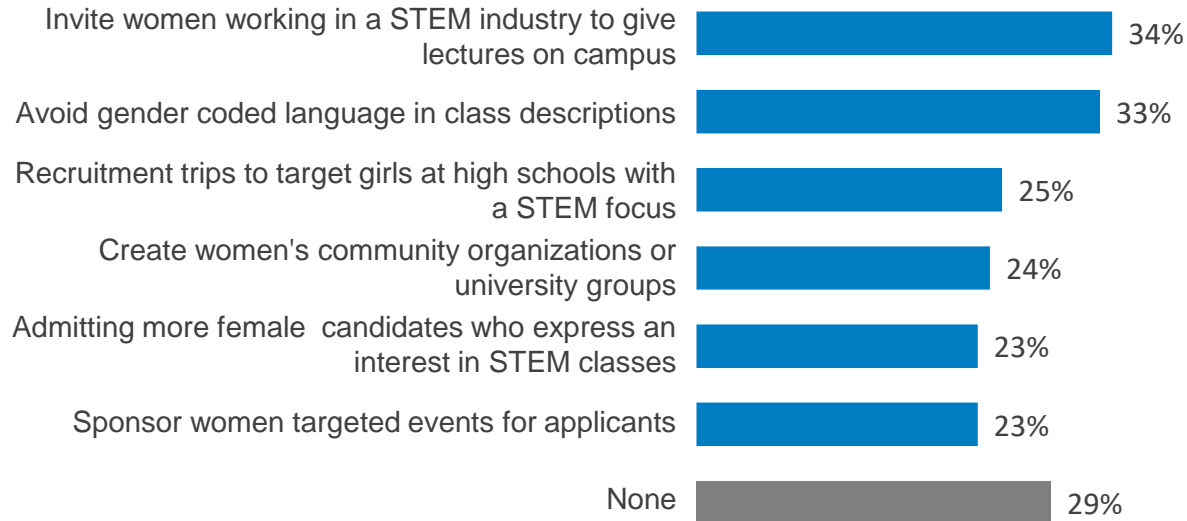
Activities to Improve Gender Diversity in Private Sector



Community Colleges are Also Not Active in Promoting Gender Diversity

Similar to the private sector, community colleges are not proactively finding initiatives to increase more women representation in STEM courses

Activities to Improve Gender Diversity in Community Colleges





THANK YOU