

REPORT

The State of

Data & AI Literacy

2024



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Introduction

Generative AI has ushered in a paradigm shift, requiring us to reassess the skills needed to succeed in today's AI-driven world. Leaders across the globe are now questioning whether their workforce is equipped to capitalize on this wave of new technology.

In last year's [State of Data Literacy 2023 Report](#), we surveyed leaders in the US and the UK about the increasing demand for data literacy skills on their teams. This year, we build on that foundation—surveying 550+ leaders in the US and the UK and broadening our perspective to include AI literacy. To add to their perspectives, we have collected insights from industry thought leaders and DataCamp for Business customers on many of the themes and trends covered in this report and those for the decades to come.

Keep reading and discover

- What AI literacy is, and how it intersects with data literacy
- The essential data and AI skills leaders are looking to grow in their teams
- Five rules for upskilling and reskilling in the AI era
- Why data and AI literacy can act as safeguards for humanity's most pressing threats



SECTION 1

From Data Literacy to AI Literacy

In this first section, we delve into one of the key concepts at the heart of this report—AI literacy—and its intersection with data literacy. We explore what these competencies entail, their significance to organizations, and the dynamics behind the data and AI skill gaps.

In the 2023 edition of the State of Data Literacy Report, we explored the critical role of data literacy within organizations and society at large. We defined data literacy as **the ability to read, write, analyze, communicate, and reason with data**, a skill set enabling individuals and organizations to make informed, data-driven decisions.

Since then, the technology landscape has been turned on its head. Generative AI is reshaping industries and business models, and, more importantly, the skills landscape. Fundamentally, it has challenged our conception of data literacy, introducing a new dimension to the competencies required in today's (and tomorrow's) workforce.

In the past 12 months alone, the [usage of tools like ChatGPT at work has doubled](#). With that comes increased focus on the skills agenda. According to Microsoft, [82% of leaders say their employees will need new skills to be prepared for the growth of AI](#).

This brings us to the concept of AI literacy, which we define as **the ability to effectively, ethically, and responsibly understand, utilize, and guide AI systems**.



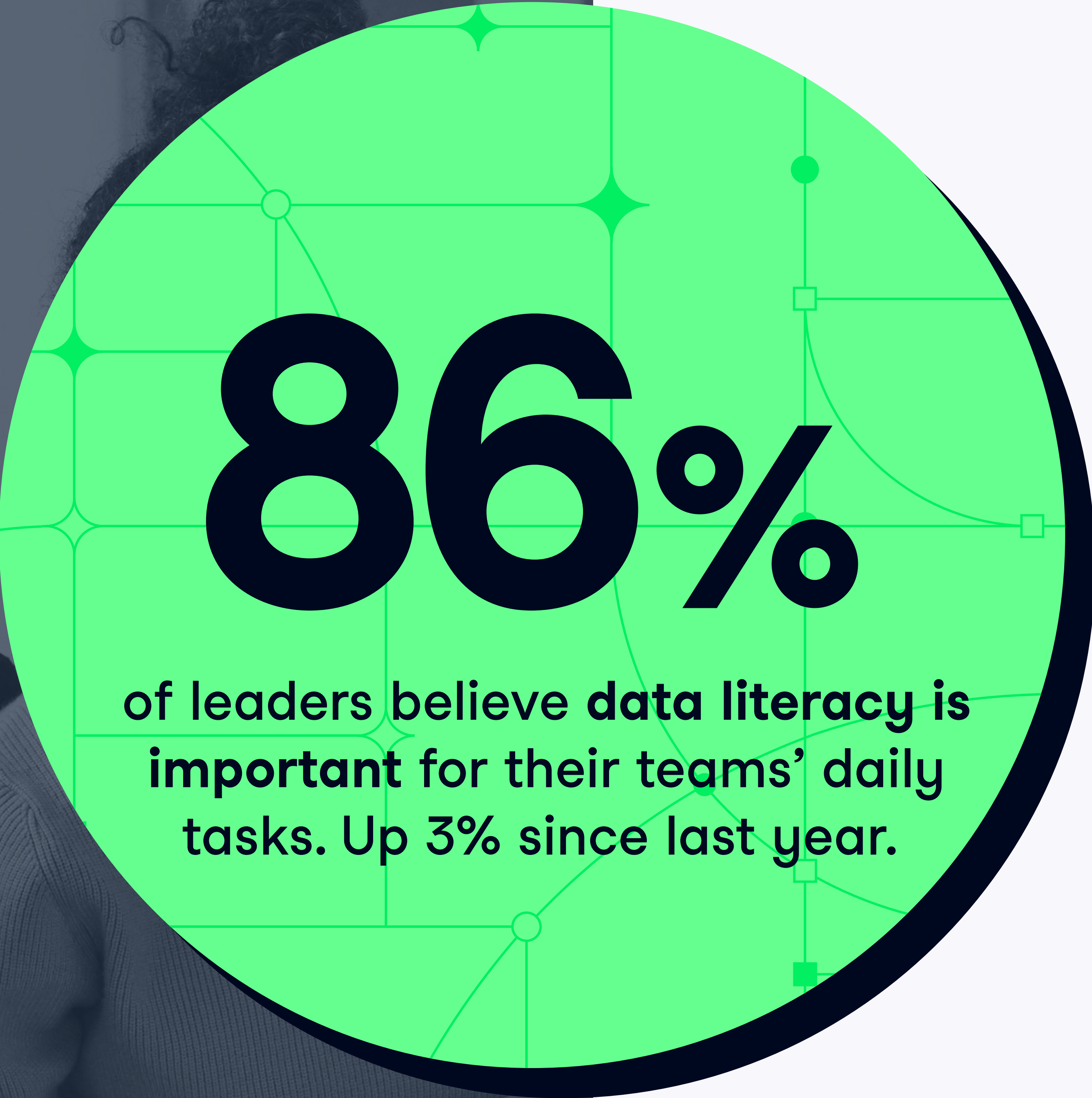
Data Literacy

is the ability to read, write, analyze, communicate, and reason with data



AI Literacy

is the ability to effectively, ethically, and responsibly understand, utilize, and guide AI systems



86%

of leaders believe **data literacy is important** for their teams' daily tasks. Up 3% since last year.



62%

of leaders believe **AI literacy is important** for their teams' daily tasks.

Despite the rapid advancements in AI, the importance of data literacy for organizations remains paramount. In last year's report, we saw firsthand how leaders value data literacy skills, with 83% of leaders across the US and UK pointing to data literacy as being important for their teams' day-to-day tasks. Today, **86% of leaders believe data literacy is important for their teams' day-to-day tasks.** Moreover, **62% of leaders believe AI literacy is now important for their teams' day-to-day tasks.** The discrepancy in importance between data and AI literacy should come as no surprise, as generative AI tools and systems have yet to be fully embedded in organizations' daily workflows.

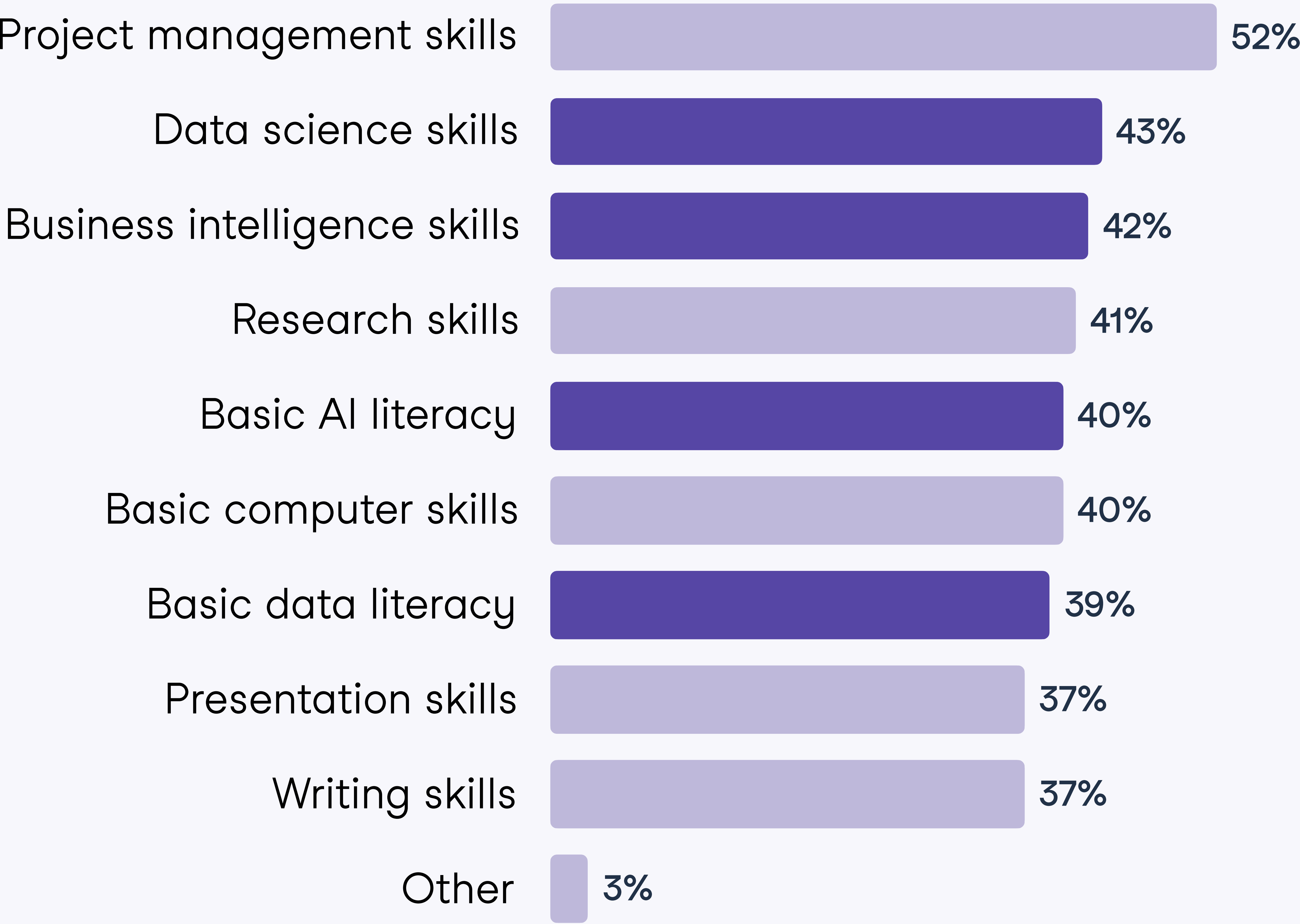
We also surveyed leaders about the growing importance of data and AI skills over the last five years. This same question was posed to leaders in 2023, and the results showed a clear trend: **every key data-related skill has seen an increase in importance.** Our latest research reveals

that **43% of leaders in the US and UK feel data science skills have become significantly more important over the last five years, up from 37% of leaders in 2023.** Similarly, **42% of leaders feel that business intelligence skills have become more important, slightly up from 41% in 2023.** The perceived importance of **basic data literacy skills** has also jumped, with **39% of leaders** highlighting its growth, compared to 30% in 2023. Additionally, **40% of leaders now identify AI literacy** as a crucially growing skill, a question that was not included in the 2023 report.

It is important to note that the fastest-growing data skill over the past year has been basic data literacy skills. The pace of innovation is rendering data skills a must-have, and is becoming an integral aspect of almost every role within the organization. As DataCamp for Business customer [Taylor Anderson](#), Global Director Insights Capabilities at Colgate-Palmolive, puts it: "Data touches all of us, and analytics is an imperative of Colgate's transformation."

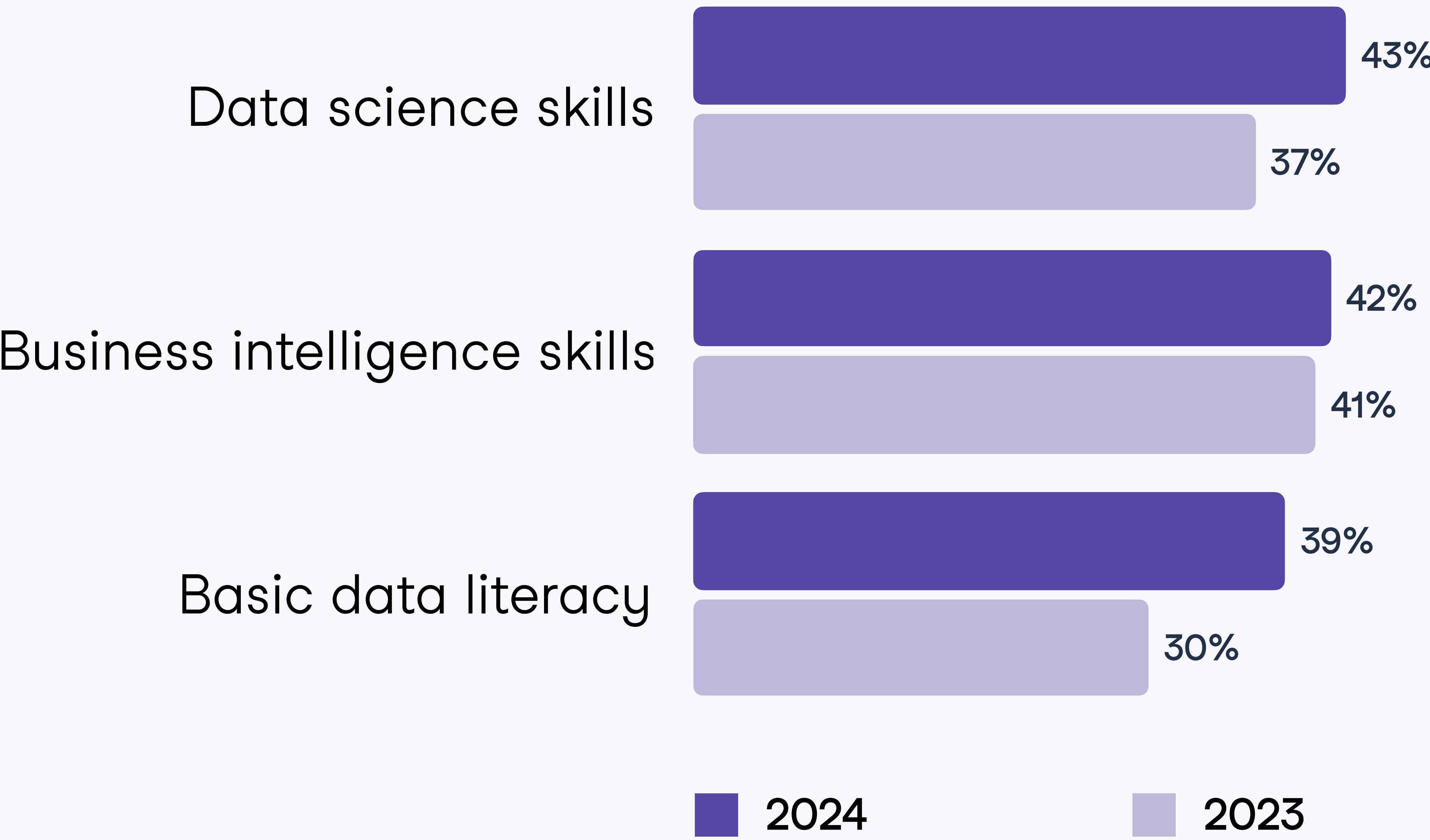
Four of the top seven fastest-growing skills were data and AI skills

Question asked: “In the past five years, which skills have grown most important for your team (or department)? Rank by order of importance.”



Data skills have grown more in importance for leaders in the past 12 months

Question asked: “In the past five years, which skills have grown most important for your team (or department)? Rank by order of importance.”



“

Data touches all of us, and analytics is an imperative of Colgate’s transformation.”



Taylor Anderson
Global Director Insights Capabilities
Colgate-Palmolive

 Read Case Study

Data & AI skills remain at the heart of improved business performance



In the previous section, we highlighted the growing importance of data and AI skills across the board. We wanted to further understand the underlying reasons behind this increased importance, focusing on the repercussions leaders face from not having adequate data and AI skills on their teams. We first focused on data skills. Our research uncovered three categories of risk:

- **Poor decision-making:** At the forefront, inaccurate (42%) and slow (38%) decision-making emerged as the biggest risks leaders face, highlighting just how important data is for modern decision-making processes and the overall success of a business.
- **Inability to catch up with the competition:** The data also pointed to significant competitive risks, including the threat of lagging in innovation (30%) and struggling to keep pace with broader competition (23%). Additionally, the risks extend to decreased productivity (36%), which can stall progress and efficiency.

Poor customer experience (25%) and the failure to meet team or departmental targets (24%) further emphasize the critical importance of data skills in securing a strong market position and driving organizational success.

- **Poor employee experience:** Lastly, leaders were also concerned about employee outcomes, with increased rates of burnout and turnover (17%) and overall poor employee experiences (15%) being top risks from not developing adequate data skills.

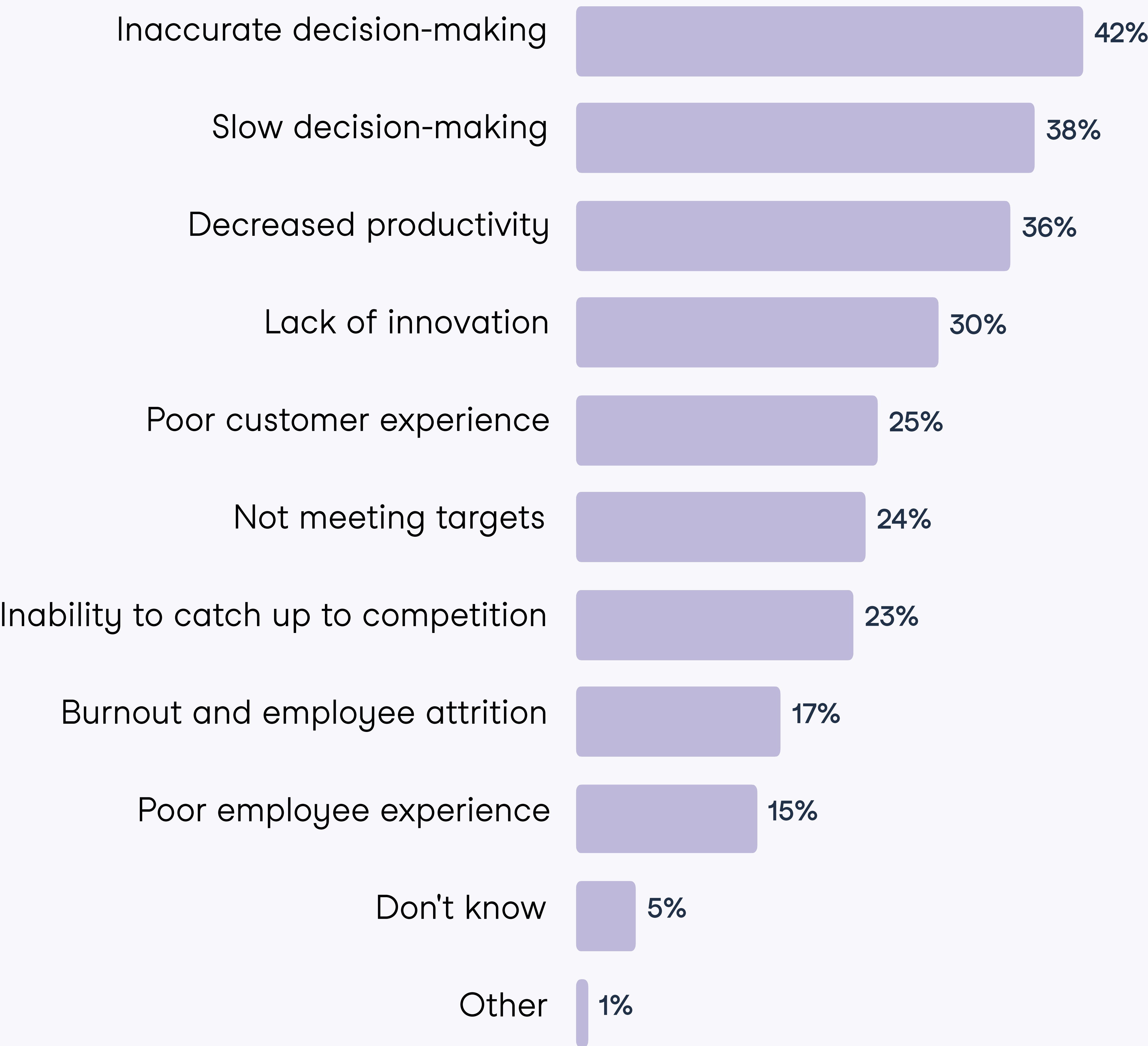
Turning the question on its head shows a similar pattern. When asked about the benefits employees with adequate data skills bring to the table, 57% of leaders reported that these individuals make faster and more accurate decisions over those with insufficient data skills, have a stronger capacity for innovation (47%), deliver enhanced customer experiences (41%), possess increased resilience (31%), have higher retention rates (31%), and are more engaged (30%).

The data tells a different story when focusing on AI skills. Leaders perceive the largest risks associated with a lack of AI literacy to be a deficit in innovation (36%), reduced productivity (31%), and an inability to keep pace with competitors (30%). Other concerns include inaccurate decision-making (25%), slow decision-making (22%), unmet team or departmental targets (18%), poor customer experience (18%), burnout and attrition (18%), and subpar employee experience (16%).

Reflecting the high value placed on data and AI literacy, there's been a notable rise in leaders willing to pay a premium for employees with these skills. In 2023, 66% of leaders were prepared to offer higher pay for data literacy, a figure that has climbed to 72% today. Of these, 80% are ready to offer at least 10% extra, and 40% would pay 20% or more. While fewer leaders (60%) are inclined to pay a premium for AI skills compared to data literacy, those who do are prepared to offer even higher premiums. Among these, 85% would pay at least an extra 10%, and 46% are willing to increase salaries by a minimum of 20%.

Leaders face a variety of risks if they do not build their workforce’s data skills

Question asked: “What risks is your department or team facing if your people do not have adequate data skills?”



The value placed on existing employees with adequate data skills shows a similar story

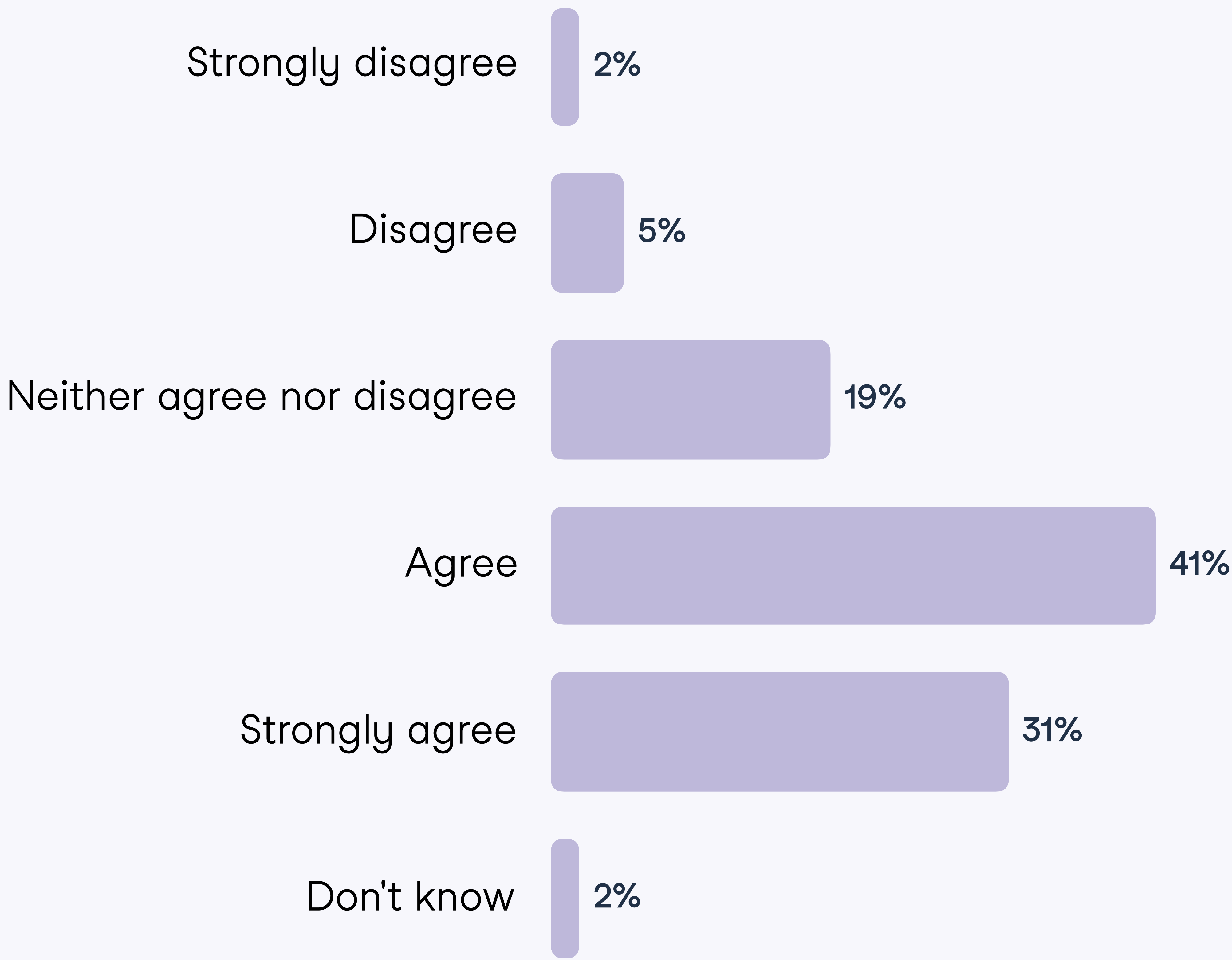
Question asked: “What value do data-literate employees provide over those with insufficient data skills?”



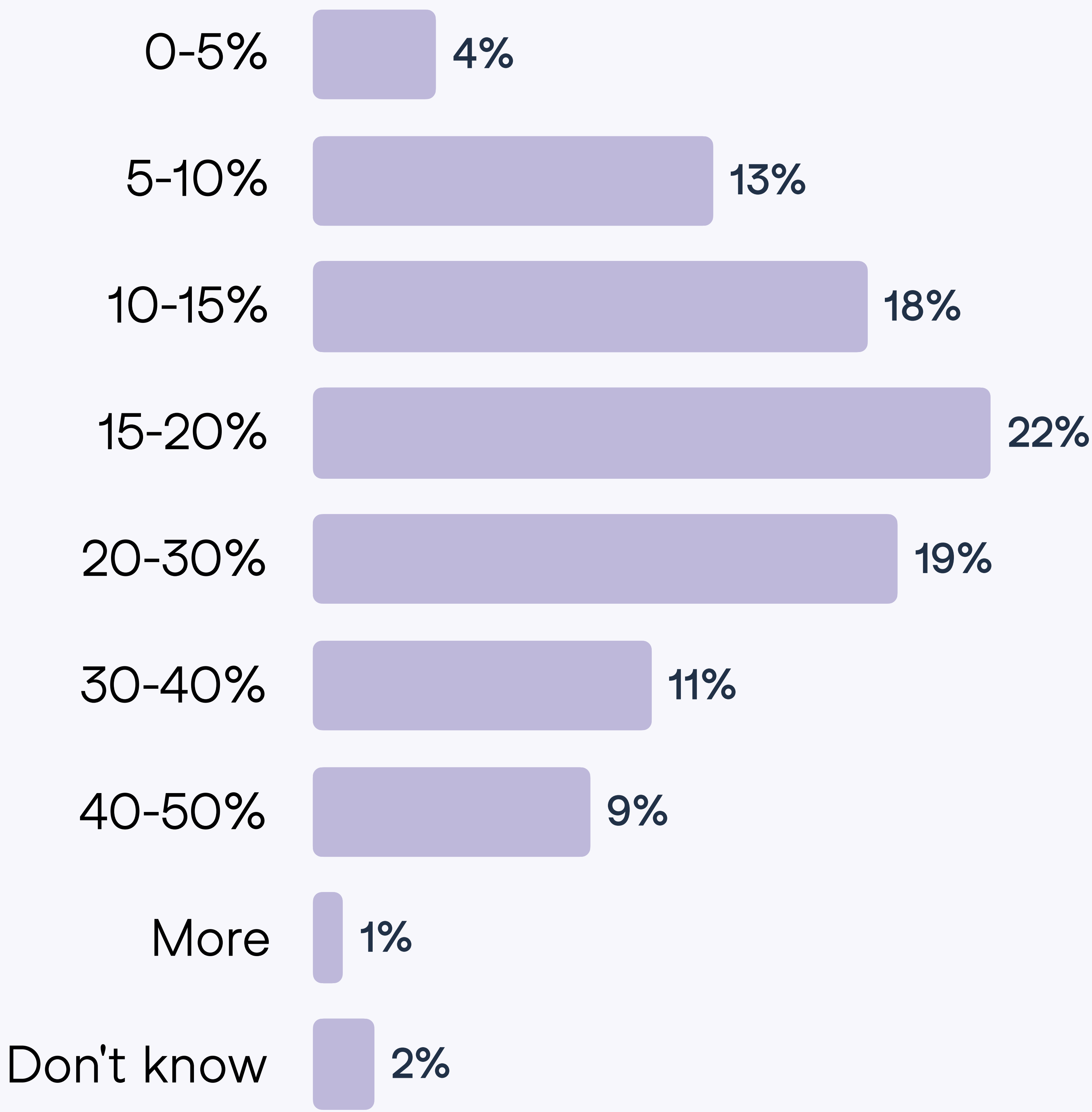


Leaders are willing to pay a higher premium for data skills

Do you agree or disagree with the following statement:
"When hiring someone new, I'm willing to pay a higher salary to a candidate who has good data literacy skills over a candidate who does not."

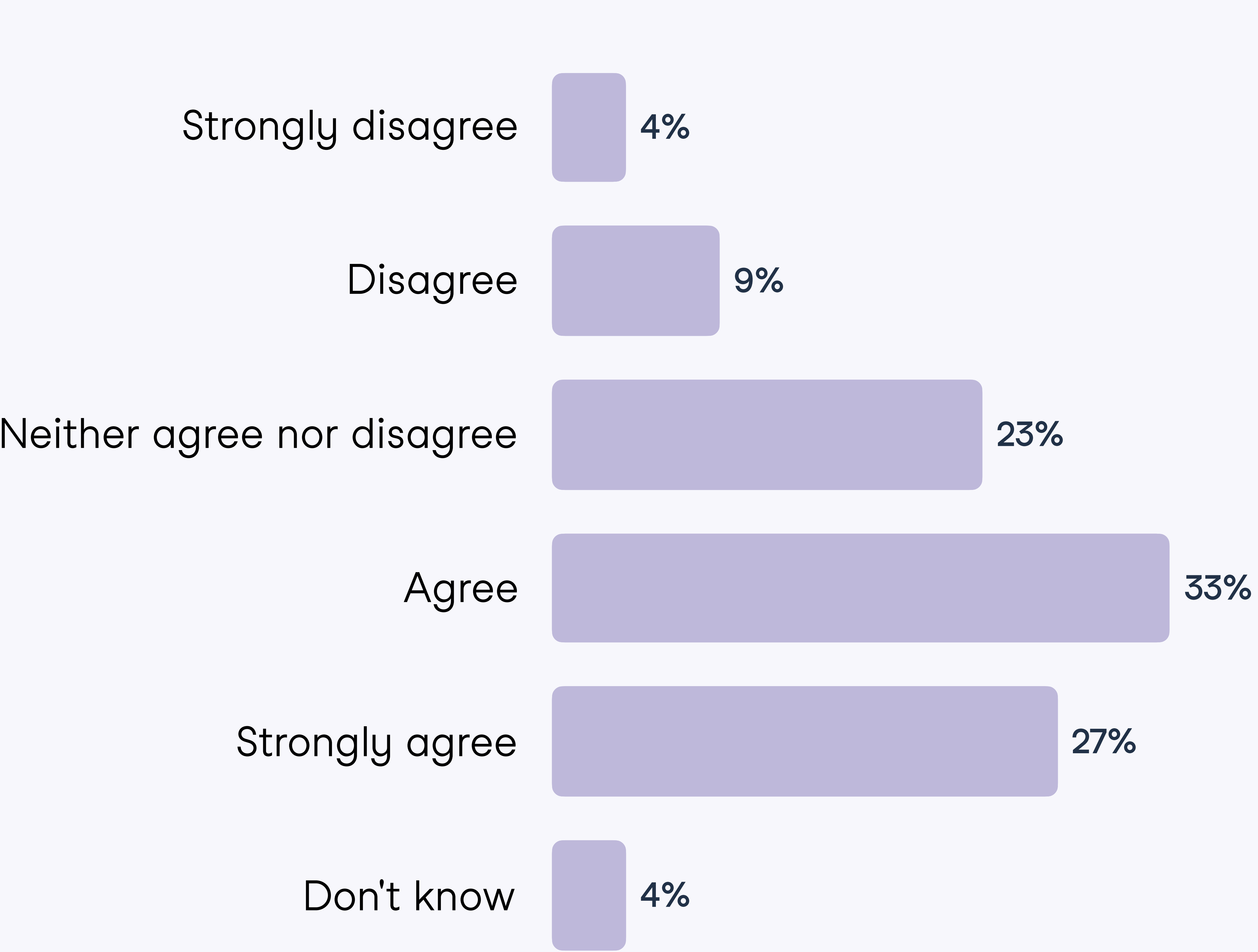


Question asked: *"If you answered yes to the previous question, what salary premium are you willing to pay to a candidate with high data literacy skills?"*

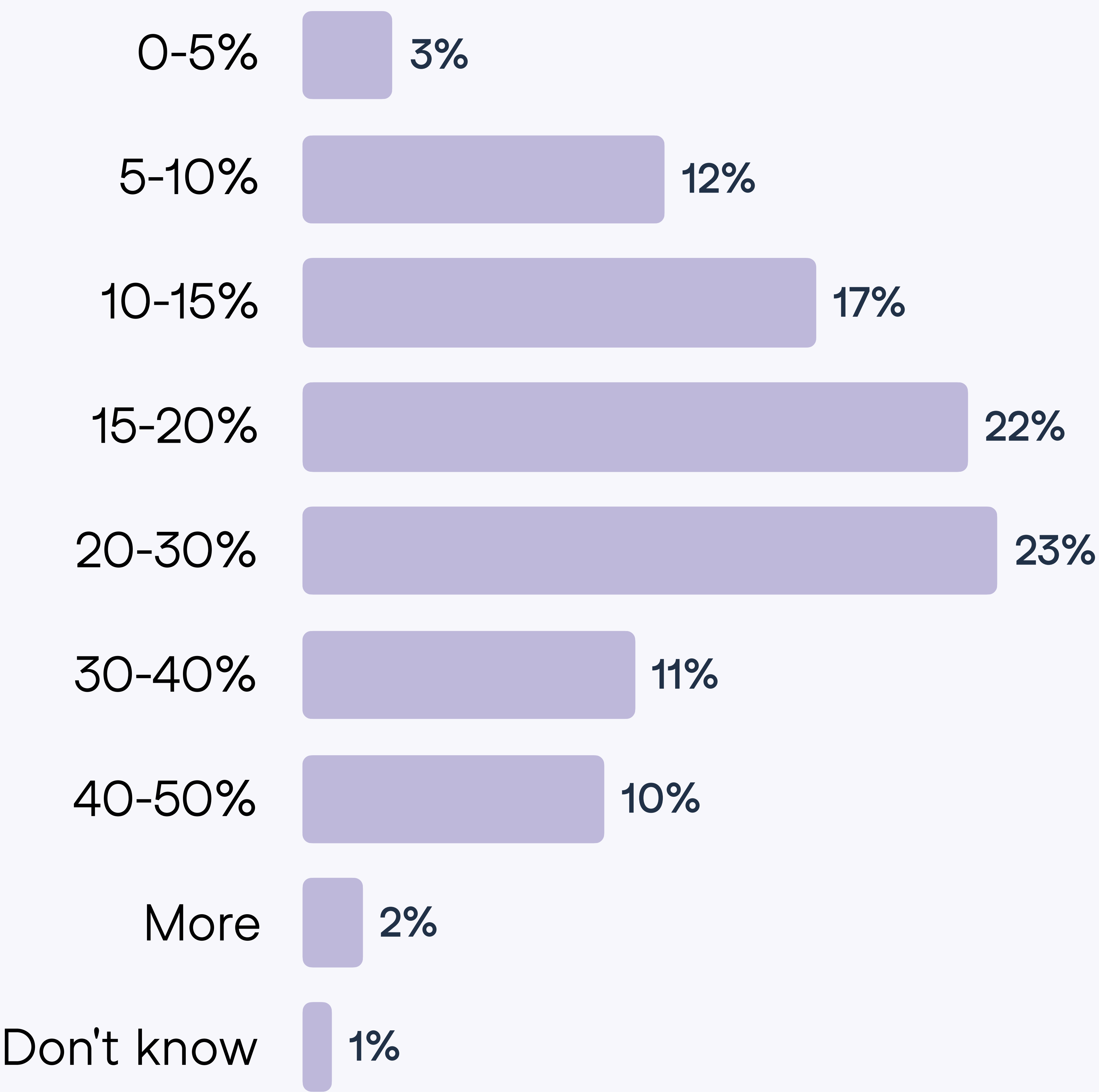


Leaders are willing to pay a higher premium for AI skills

Question asked: “Do you agree or disagree with the following statement: ‘When hiring someone new, I’m willing to pay a higher salary to a candidate who has good AI literacy skills over a candidate who does not.’”



Question asked: “If you answered yes to the previous question, what salary premium are you willing to pay to a candidate with high AI literacy skills?”



The evolving data & AI skill gap

The insights from the previous section bring to light the looming threat of the data and AI skills gap, a challenge that appears to be growing year over year. In 2023, 54% of leaders across the US and the UK acknowledged a data literacy skill gap within their organizations. This year, that perception has slightly increased, with 57% of leaders identifying a gap in data skills among their teams.

This trend is somewhat counterintuitive; as we'll see later, organizations have also increased their focus on upskilling and reskilling. However, it's important to note that **upskilling and reskilling on data literacy is a multi-year journey**. Moreover, as innovation accelerates, the pressure mounts for organizations to adapt, making the data literacy skill gap even more pronounced.

Valerie Logan, CEO of The Data Lodge and inventor of the term “Data Literacy,” put it aptly on a [2023 DataCamp Webinar](#): “We are still in the pioneering phase of data literacy—and the pioneers of the data literacy movement are forging the way and making progress, but I would

imagine we are on year 3 of a 10 year wave at the moment”.

This year, our research also delved into organizations' perceptions of their AI skill gaps, uncovering an even larger disparity. A significant 62% of leaders now recognize an AI literacy skill gap within their organizations. This finding is not surprising. New technology paradigms, especially those as transformative as generative AI, often introduce entirely new skill requirements.

As we stand on the cusp of the generative AI revolution, the AI literacy skill gap will only continue to grow.



“We are still in the pioneering phase of data literacy—and the pioneers of the data literacy movement are forging the way and making progress, but I would imagine we are on year three of a 10-year wave.”

Valerie Logan, CEO of The Data Lodge

 Watch the Webinar

SECTION 2

Upskilling & Reskilling in the AI Era

In the second section, we zero in on the relationship between **AI literacy** and **data literacy**, outlining the specific skills that leaders look for in their teams.

AI literacy as an extension of data literacy

In the previous section, we highlighted how the generative AI revolution has placed AI literacy firmly on the map. This leads us to the following question: **where does data literacy end and AI literacy begin?** Through discussions with DataCamp for Business customers and observations within the broader industry, we've come to view AI literacy as a natural extension of data literacy for several reasons.

AI has always been part of the data literacy agenda

Despite the recent surge in public awareness of AI, it's crucial to recognize that generative AI, which has played a major role in the mainstreaming of AI, represents just one aspect of the broader AI landscape.

In reality, machine learning and predictive modeling have long been integral components of the data skills continuum. It could be argued that the most substantial value drivers for organizations today stem from what might be considered "traditional" machine learning and predictive modeling. More importantly, to truly drive value with AI, business teams and technical teams need to adopt a common data language. [Eric Siegel, founder of Machine Learning Week, former Columbia professor, and best-selling author, underlined this point during an episode of the DataFramed podcast.](#) He mentioned how: "If we can get everyone up to speed when scoping machine learning projects, then business stakeholders and data experts can speak the same language and deeply collaborate. By having everyone involved in a project from start to finish, you're not going to run into the trap of having cold feet before a project is deployed."



Eric Siegel, Founder of Machine Learning Week, Former Columbia Professor

 [Listen to Podcast](#)

Understanding the intricacies of generative AI requires strong data literacy

As we will explore in later sections, understanding basic AI concepts and ensuring the ethical use of AI rank among the top priorities for leaders aiming to enhance their teams' AI literacy skills. However, these skills are unattainable without a solid foundation in data literacy. Identifying biases in algorithms, for instance, necessitates a deep understanding of data collection processes. Similarly, enhancing model performance is closely tied to an intricate knowledge of data governance and quality. [Libby Duane Adams, Co-founder and Chief Advocacy Officer at Alteryx, underscored the importance of data skills for everyone on the DataFramed podcast](#), mentioning, “Data skills in the workplace are a huge asset for people at all ages, all levels, all parts of an organization.”

AI will lower the barrier to data literacy

AI is increasingly becoming a force multiplier across various domains. From writing to design, AI accelerates the time to value and lowers the barrier to entry for anyone. Data work is no different. In fact, use cases like programming, reporting, and analysis are emerging as some of the “killer apps” for generative AI tools such as ChatGPT. Yet, leveraging AI for data tasks demands a nuanced interplay between AI literacy and data literacy. [Kyle Daigle, COO of GitHub, highlighted this synergy](#), remarking: “While all of these tools are extremely helpful, you still have to start with asking the right questions. You have to find a trail of questions and go down that trail. And if you can't find the trailhead, you're not going to get very far on the journey.”

Now that we've established AI literacy as an extension of the data literacy skill set, what are the top data and AI skills leaders are looking for in their teams?



Data skills in the workplace are a huge asset for people at all ages, all levels, all parts of an organization.”



Libby Duane Adams

Co-founder and Chief
Advocacy Officer at Alteryx

 Listen to Podcast



While all of these tools are extremely helpful, you still have to start with asking the right questions. You have to find a trail of questions and go down that trail. And if you can't find the trailhead, you're not going to get very far on the journey.”



Kyle Daigle

COO of GitHub

 Listen to Podcast

Unpacking the data & AI skills leaders are looking to grow in their teams

So far, we've uncovered the dynamics behind the data and AI literacy skill gap and highlighted the growing importance of these skills in the modern workplace. We've also contextualized AI literacy in relation to data literacy. Now, we turn our focus to the specific skills leaders are looking to grow within their teams.

Descriptive analytics remains the top priority data skill for leaders

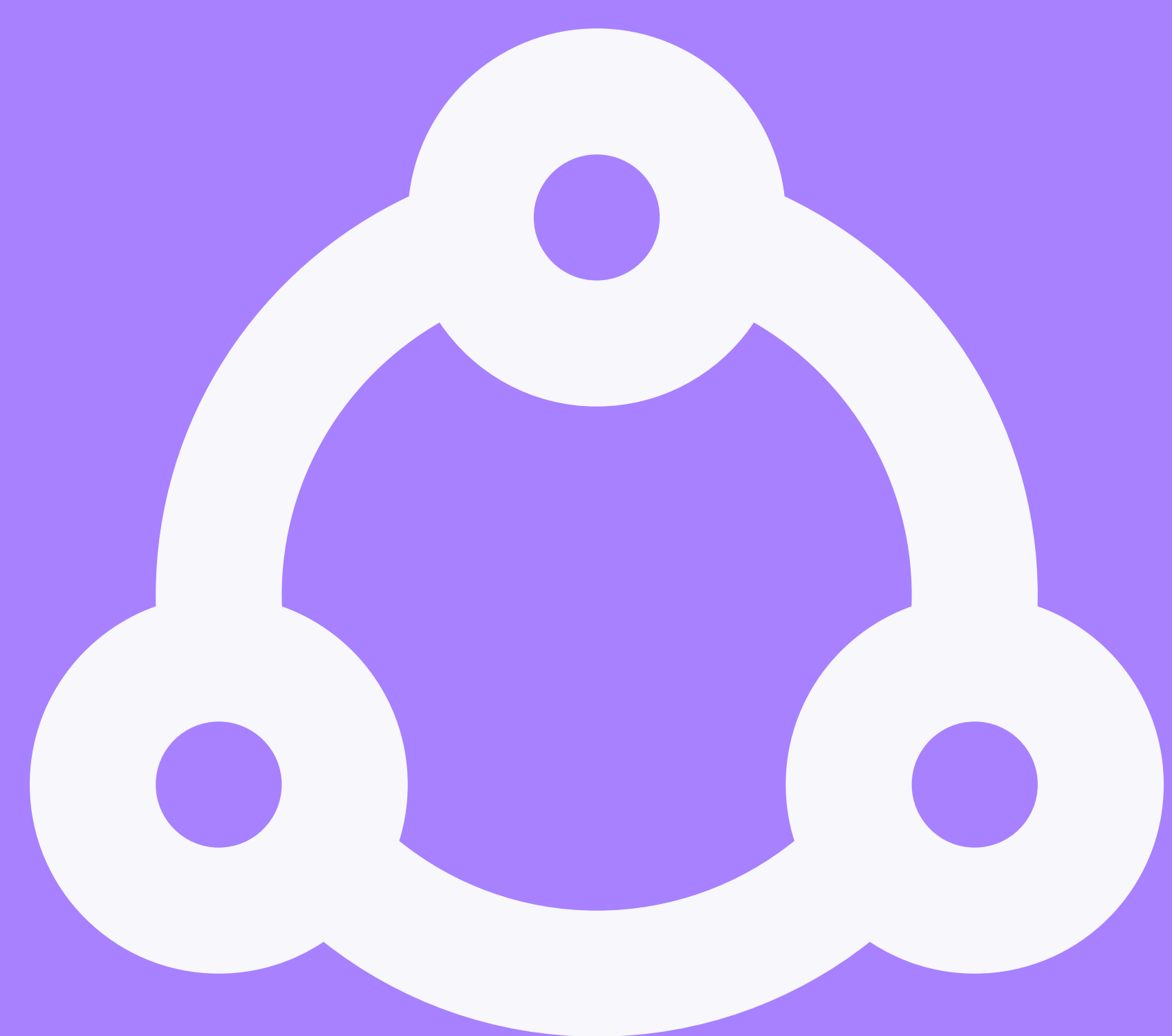
In [last year's State of Data Literacy Report](#), we outlined how one of the biggest drivers of the data literacy skill gap originally came from organizations prioritizing predictive analytics use cases over growing the descriptive analytics chops of their workforce.

As organizations course-correct, it should be no surprise that descriptive analytics are the most important skills leaders are looking to build in their teams. More interestingly, almost every **single data skill grew in importance** in comparison to last year.

We asked leaders to rank the data skills they deem most important for their teams. The results underscore a clear emphasis on data-driven decision-making, and being able to make sense of complex datasets. Leading the pack, **84% of leaders pointed to data-driven decision-making** as the most important skill for their teams (up by 6% since last year). Following closely, **83% of leaders found that the ability to interpret data visualizations and dashboards** (up by 9%) was most important to build. **80% of leaders found data analysis and manipulation skills to be most important** (up by 8%), and **76% of leaders stressed the importance of creating data visualizations and dashboards** (up by 11%) as the most important data skill for their teams.

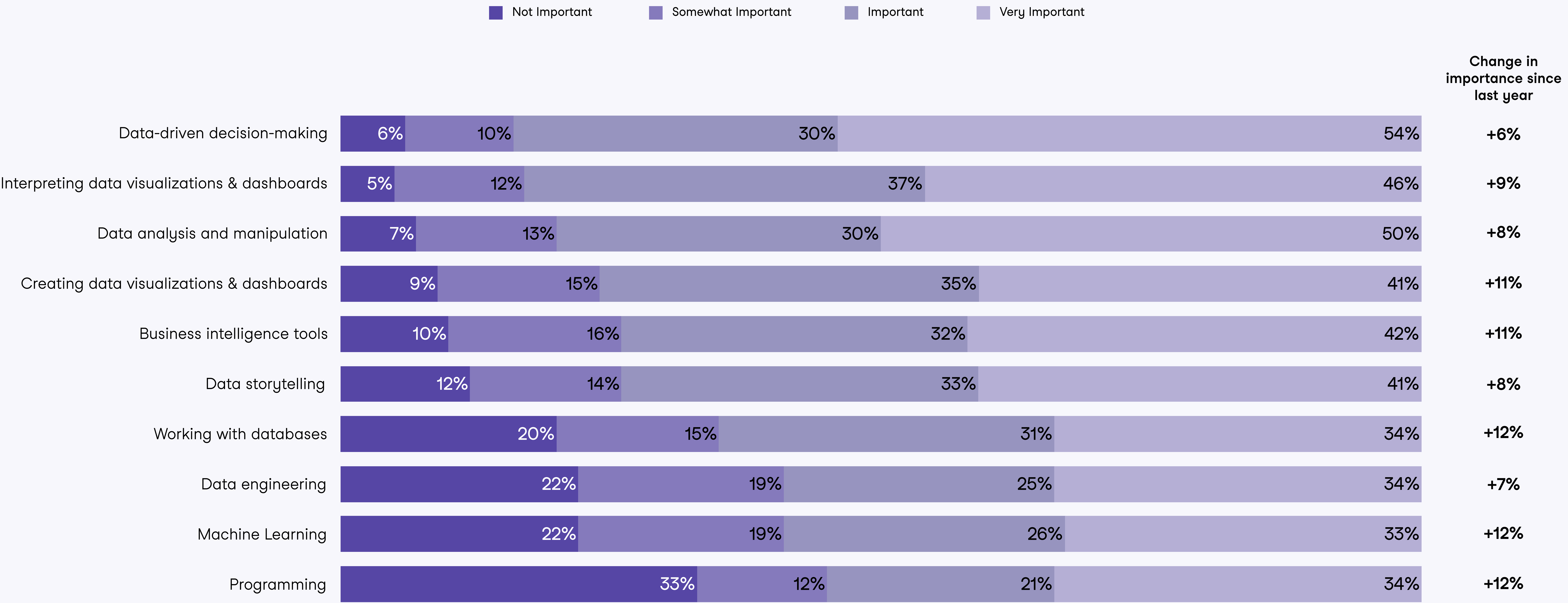
Finally, **74% of leaders identified data storytelling as the most important skill for their teams** (up by 8%).

Not to be overlooked however was knowledge of tools. **74% of leaders pointed to knowledge of Business Intelligence tools** (up by 11%) as the most important data skill their teams needed to know. SQL skills are also deemed a priority, with **65% of leaders** (up by 12%) mentioning database skills as the most important for their teams. A similar story emerges for programming, machine learning, and data engineering skills. **59% of leaders pointed to machine learning and data engineering skills** being the most important for their teams (up by 12% and 7%, respectively), and **54% discussed programming skills in R or Python as the most important** for their teams (up by 12%).



Data skills have grown in importance for leaders, with descriptive analytics being a top skill leaders are looking to grow

Question asked: "How important, if at all, are the following data skills for the day-to-day tasks of employees in your organization?"



Understanding AI concepts and responsible use of AI are top AI skills leaders need from their teams

Expanding this year’s survey to cover AI, we asked leaders to identify the most important AI skills for their teams. Leading the charge, **70% of leaders identified a basic understanding of AI concepts** as most important for their team, emphasizing the necessity for teams to grasp the core principles underlying AI technologies. **AI ethics and responsible AI best practices** closely followed, with **69% of leaders highlighting them as the important AI skills for their teams**. The **application of AI in business** contexts was also a key focus, with **65% of leaders recognizing its importance**.

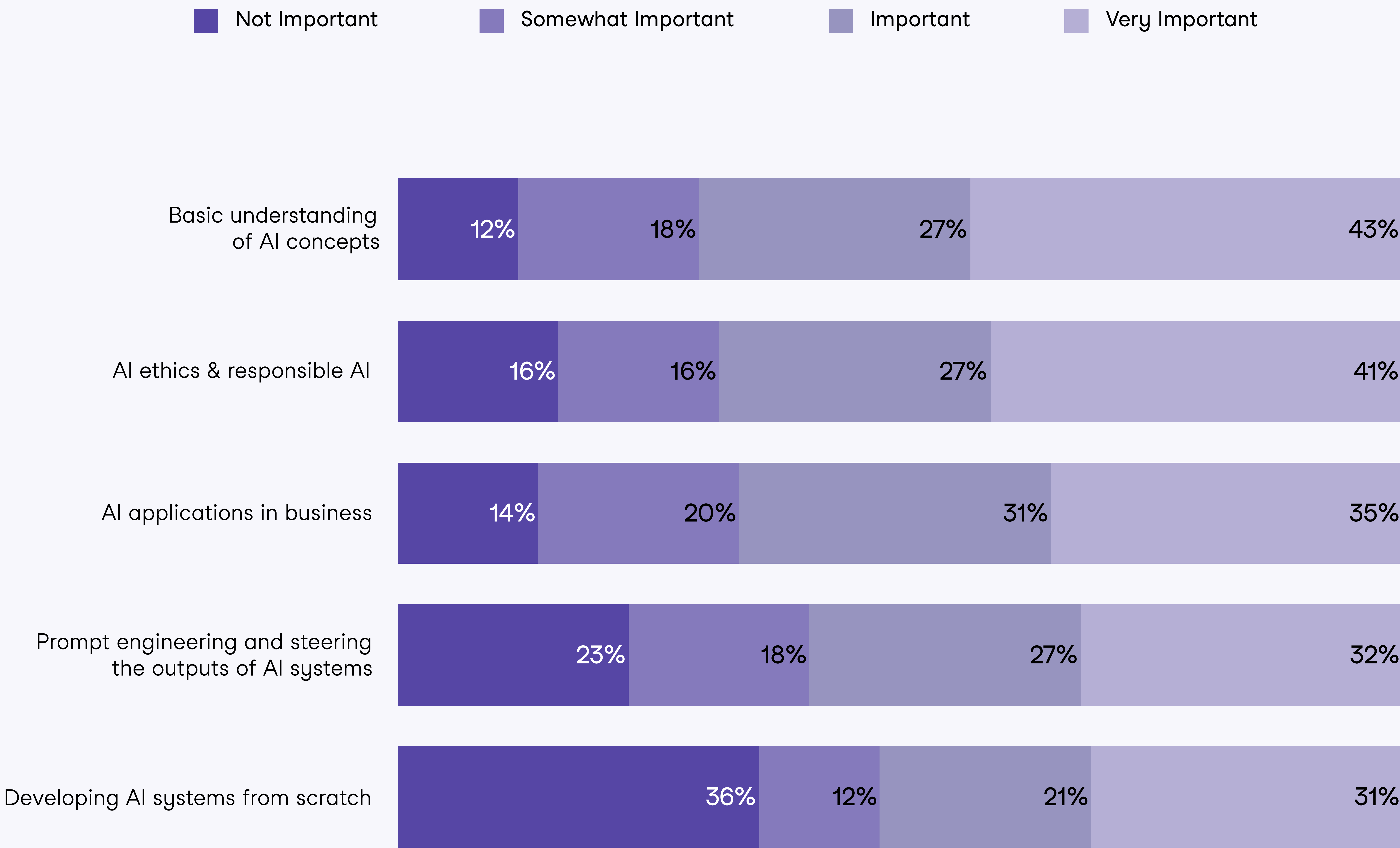
Surprisingly, despite the buzz around generative AI tools like ChatGPT, leaders ranked **prompt engineering and steering the outputs of AI systems** as the fourth most important skill for their team, with **60% of leaders believing it is the most important**.

Developing AI systems from scratch was deemed important by **52% of leaders**, pointing to the need for technical proficiency in AI development within teams. This skill highlights the importance of having in-house capabilities to create and tailor AI solutions.

The ranking of these skills highlights a pressing need for basic AI understanding and ethical AI use in organizations. Leaders are putting a lot of weight on getting the basics of AI right and making sure it's used ethically, showing how important it is to carefully consider AI's potential effects. This approach is crucial not only for making the most of what AI has to offer but also for avoiding the negative impacts and damage to reputation that can happen if AI is used carelessly. While there's recognition for the skills needed to use advanced AI tools like ChatGPT, it's interesting to see these take a backseat to more fundamental and ethical concerns about AI.

Basic understanding of AI concepts and responsible use of AI are the most important skills leaders are looking from their team

Question asked: "How important, if at all, are the following AI skills for the day-to-day tasks of employees in your organization?"

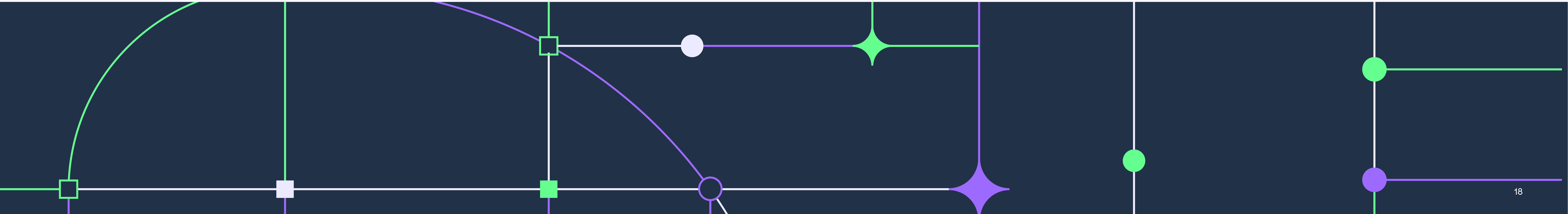
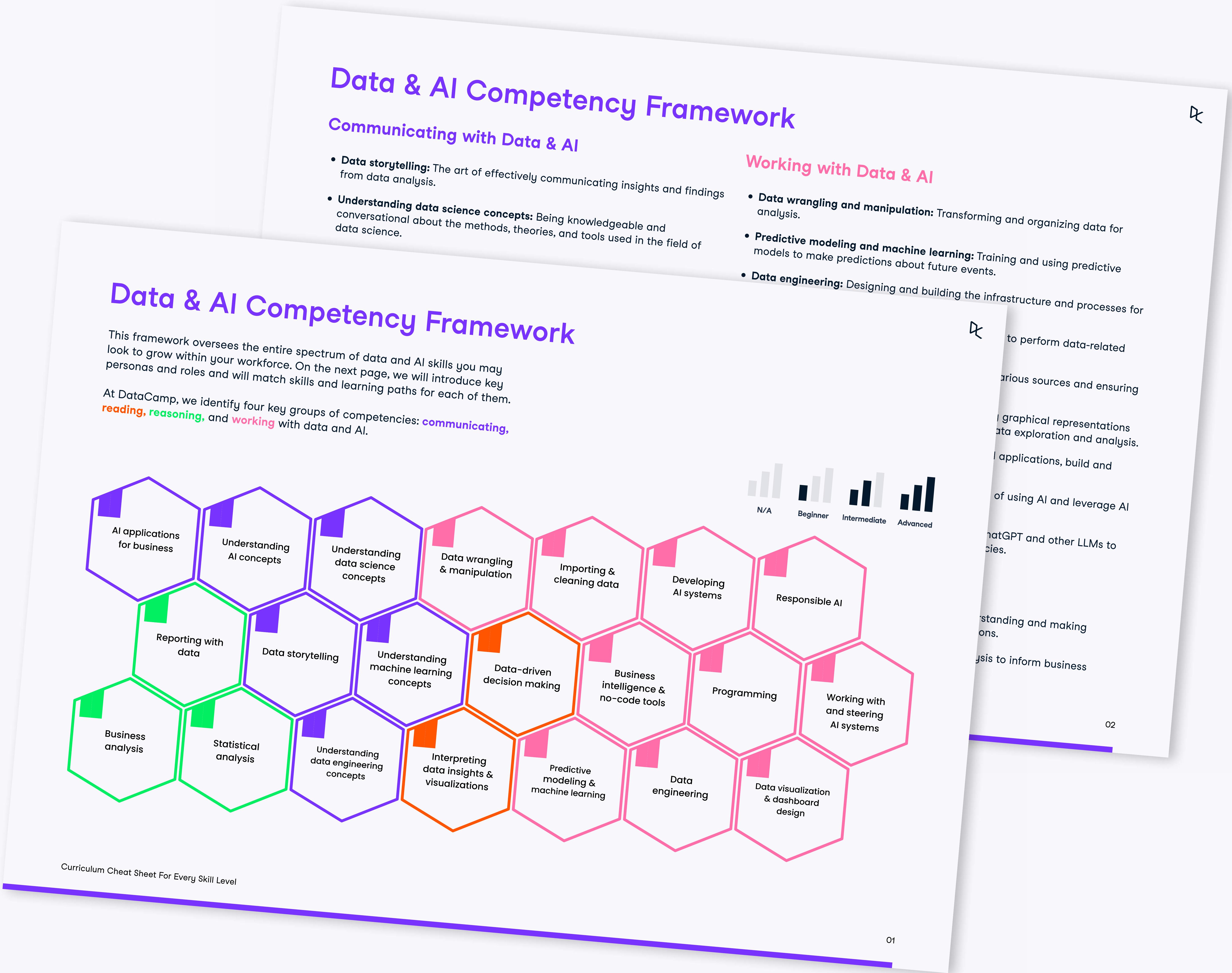


The 2024 Data & AI Competency Framework

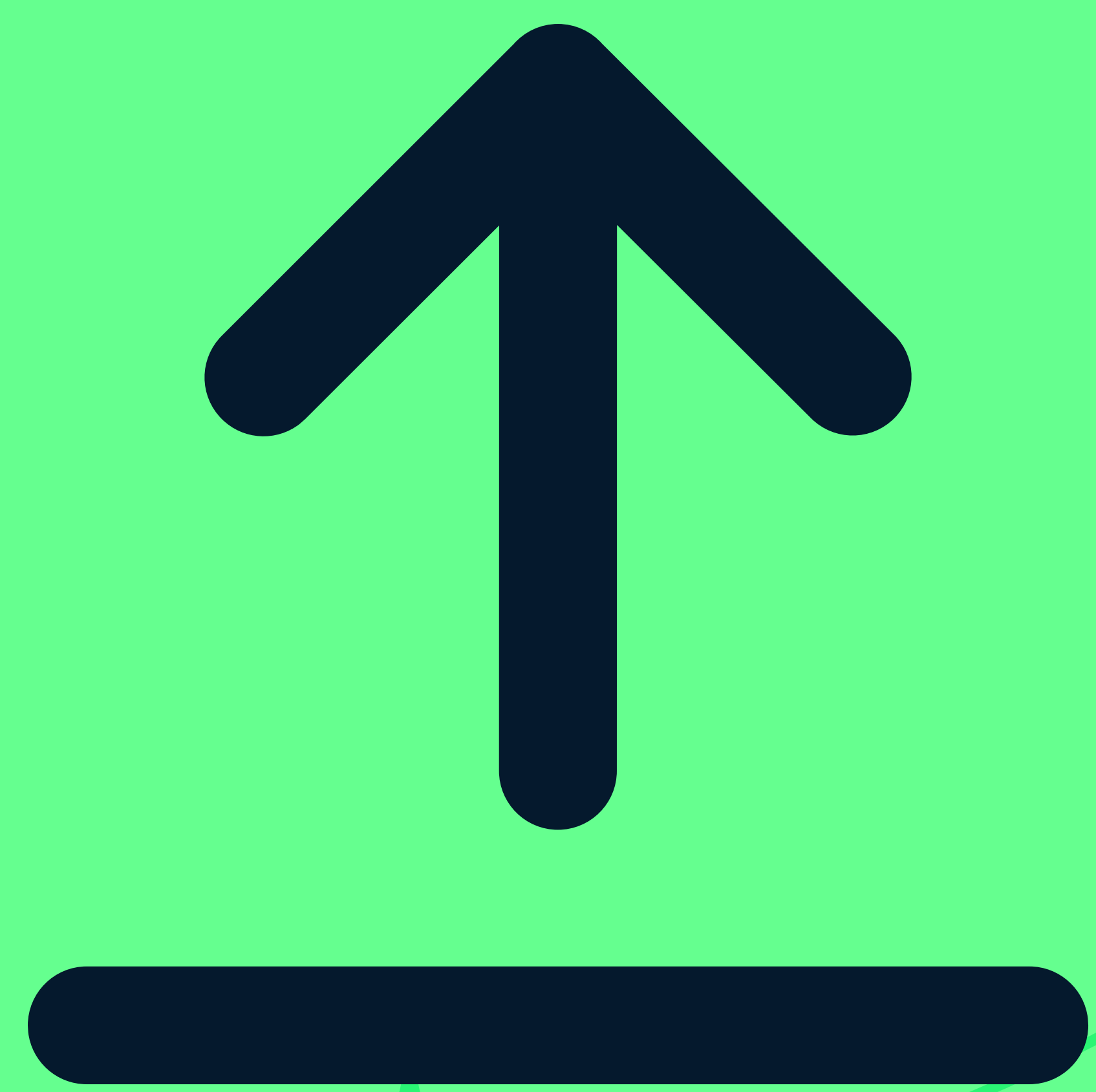
In last year’s State of Data Literacy 2023 Report, we introduced our data competency framework. This framework looked at the entire spectrum of data skills organizations may want to grow within their workforce and has been used by DataCamp for Business customers, data leaders, and learning leaders across the world.

Below you will find an **updated competency framework including key AI literacy skills** covered throughout this report. We highly encourage you to use this when building your data and AI upskilling and reskilling programs.

 [Access The Data Competency Framework](#)



The state of data & AI upskilling & reskilling in 2024



So far, we've explored the data and AI skills leaders are looking to grow in their teams. In this section, we wanted to understand how leaders are approaching filling the data and AI skills gap and what their biggest challenges are when future-proofing their teams' skills

Despite progress, data and AI training remains in its infancy

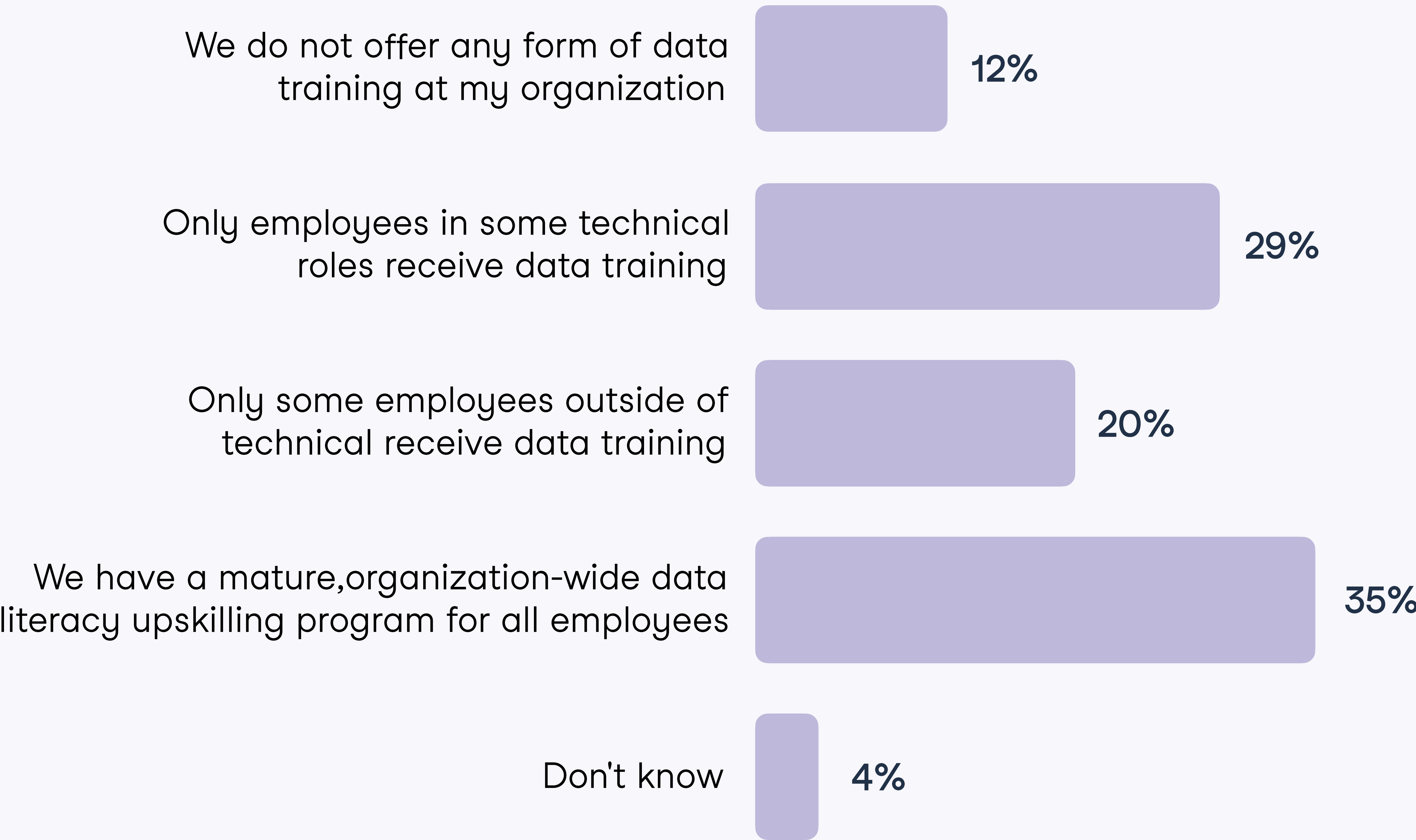
When prompted about the state of data training within their organization, leaders report signs of gradual improvement. Only **12% say they offer no data training**, down from 18% last year. On the flip side, more organizations are **expanding data training to non-technical roles**, increasing from 14% to **20% over the past year**.

More interestingly, there's been a 4% increase in organizations with mature data literacy programs that are available to everyone, with **35% of leaders mentioning data training is available to all, as opposed to 31% in 2023**. Despite the positive signals, there is still much room for growth. The expansion of data upskilling and reskilling programs hasn't kept pace with the increasing demand for data skills.

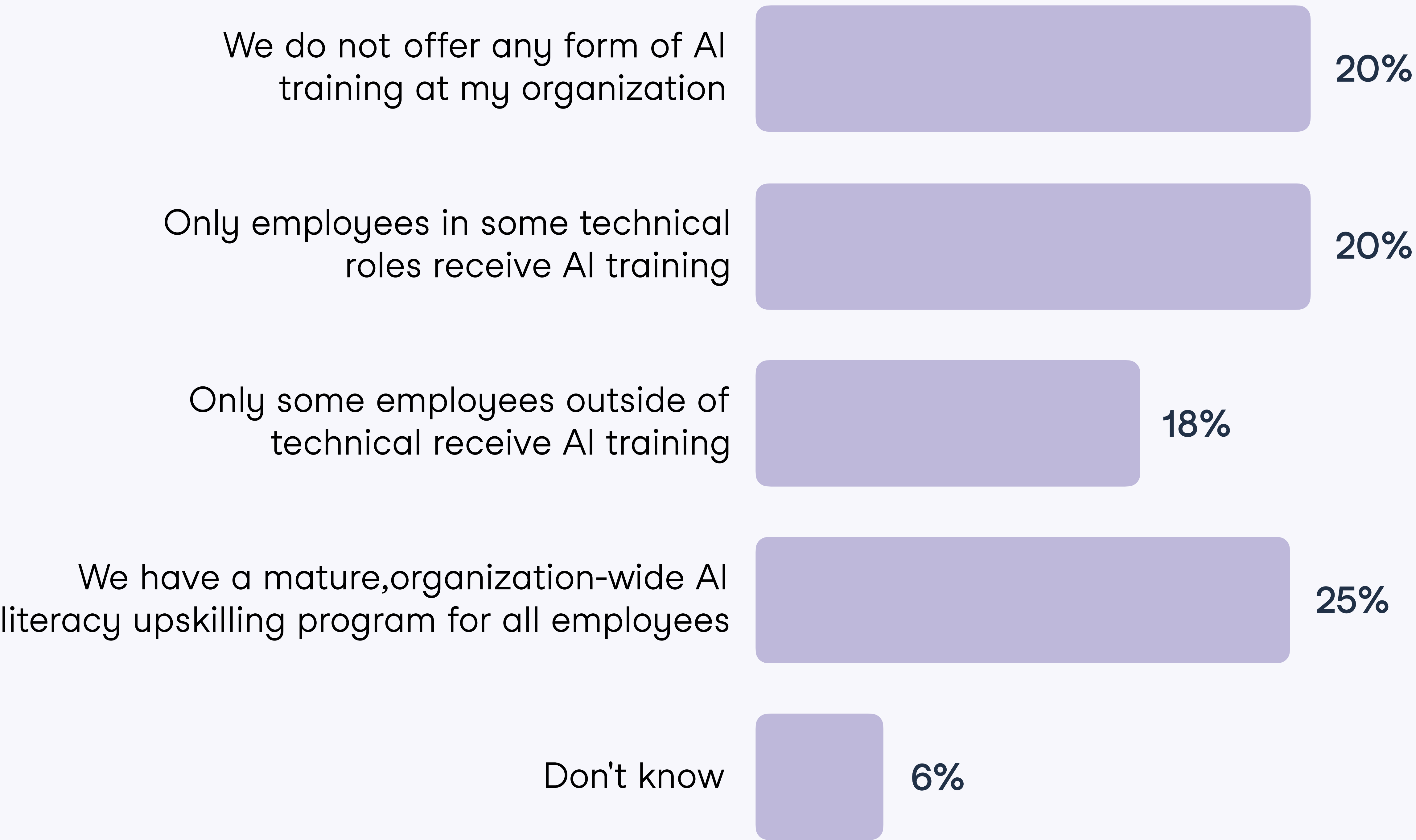
While leaders' approach to data upskilling shows signs of progress, the story changes when examining AI upskilling and reskilling. A concerning **26% of leaders report that they do not offer any form of AI training**. An additional **26% of leaders point to AI training being reserved for technical roles only**, whereas only **18% extend such training to non-technical staff**. Finally, **25% of leaders belong to organizations that have established comprehensive, organization-wide AI literacy programs**. These figures show that AI skills transformation is still in its infancy, as the level of urgency and action taken to address the AI skills gap appear to lag a few years behind those for the data skills gap.

Data and AI training remains nascent in organizations

Question asked: *"What would best describe the state of data training at your organization?"*



Question asked: *"What would best describe the state of AI training at your organization?"*



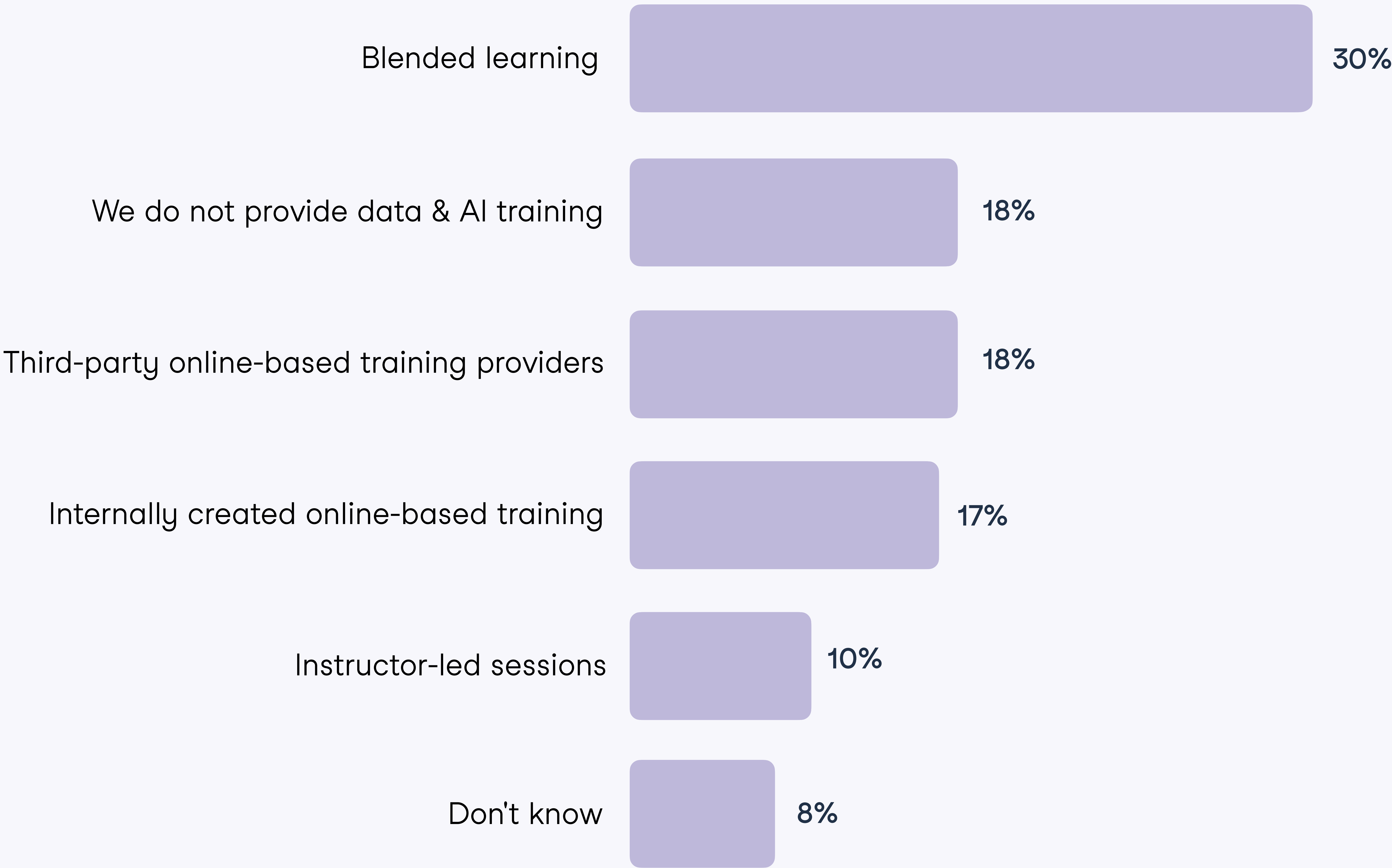
Blended learning: The preferred approach to bridging the data and AI skills gap

When leaders were asked about their preferred methods for training teams in data and AI skills, **30% preferred blended learning as the top choice**. This method combines online learning with conventional instructor-led sessions to effectively close the data and AI skills gap within their teams.

Additionally, **18% rely exclusively on third-party online training**, and **17% develop their own online learning materials**. Furthermore, **10% of leaders emphasized that instructor-led sessions** are the key method for upskilling their teams in data and AI skills, while **18% reported that they do not provide any form of data and AI training**.

Blended learning and online learning are the most popular ways of addressing the data and AI skills gap

Question asked: *"How do you upskill your workforce on data and AI skills?"*



The challenges leaders are facing in filling the skills gap

As we reflect on how leaders are training their teams in data and AI and considering the urgency of filling the skills gap, it's important to also highlight the main challenges leaders face when upskilling and reskilling their teams on data and AI.

Lack of budget and inadequate training resources top the list of challenges

When leaders were asked to identify the top challenges in training their teams, **35% cited a lack of budget as the primary obstacle**. This represents a slight improvement from the 40% reported last year but remains the most significant barrier to the transformation of data and AI skills. Following closely, inadequate training resources emerged as the second major hurdle, highlighted by **33% of leaders who pointed to the quality of learning materials** as a key issue. The third most common challenge, cited by **31% of leaders**, is the difficulty in **knowing where to start with data and AI training**, which impedes the ability to drive meaningful impact.

Other notable challenges are more related to organizational culture, with **28% of leaders reporting employee resistance** and **26% noting a lack of executive support and clear ownership of training programs** as significant obstacles to successful upskilling.

Online learning resources do not provide the needed level of personalization and interactivity

In earlier sections, we learned that at least **65% of leaders utilize online resources for data and AI upskilling and reskilling**.

However, **33% of these leaders indicate that a lack of adequate training materials** is the primary obstacle to achieving success in data and AI skills. What is driving this dissatisfaction?

Lack of budget and inadequate training resources top the list of challenges

Question asked: *"What challenges have you faced or currently facing when improving your workforce's data and AI skills? Please select all that apply."*

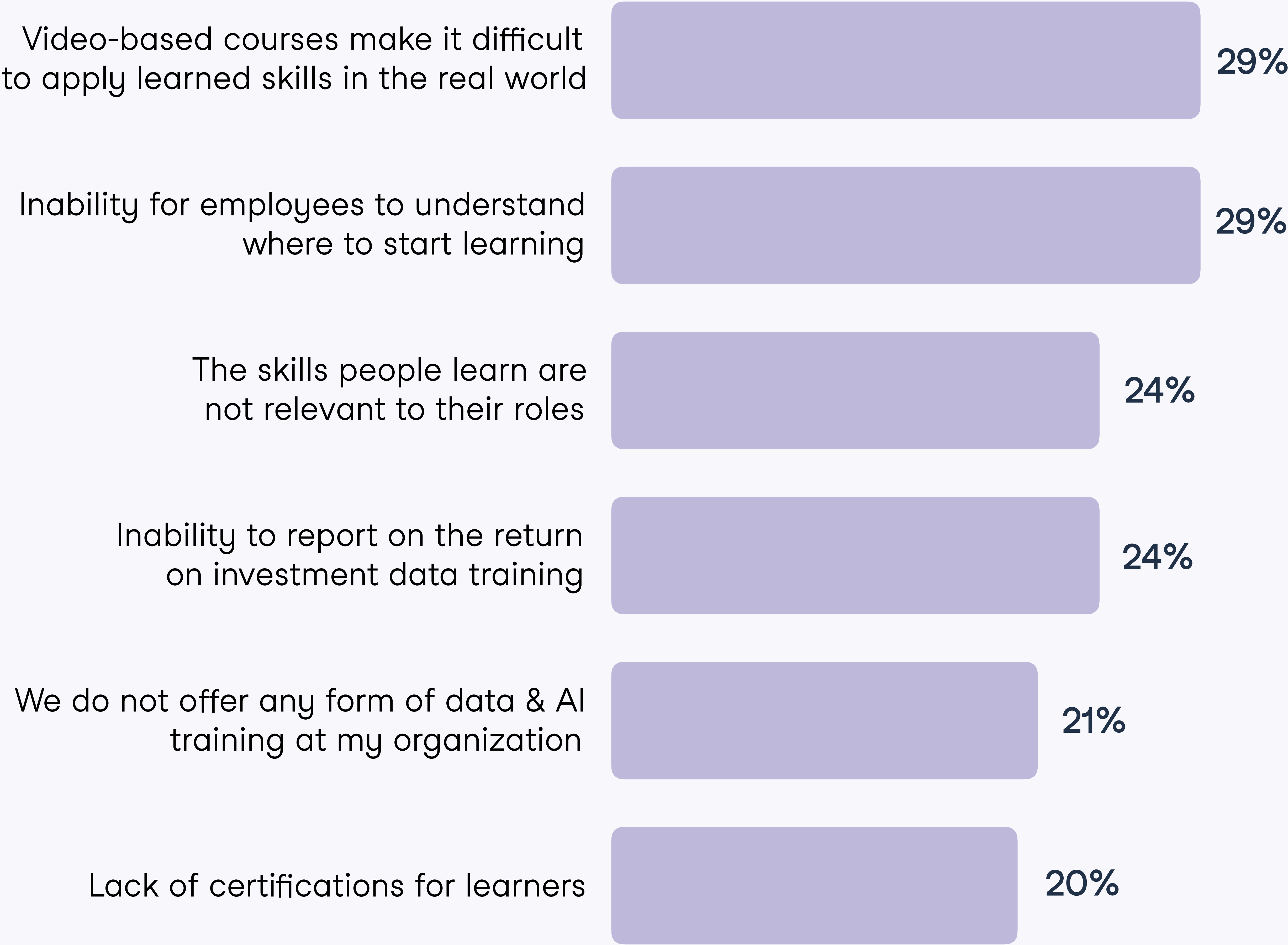


A notable **29% of leaders** find that **video-based courses make it difficult to apply learned skills in the real world**, pointing to lack of interactivity as the biggest challenge with online learning. Similarly, **29% of leaders** point to **employee confusion about where to get started** as the biggest challenge they face with online learning providers. This should come as no surprise, as the majority of today’s online learning platforms opt for a volume over curation approach (for example, Coursera has over 250 near-identical courses providing an introduction to Python, and Udemy has over 3000).

24% of leaders point to **lack of personalization** and **inability to track ROI on data training** as their biggest challenges. More interestingly, 20% of leaders point to **lack of certifications for learners** as the biggest obstacle to driving value with third-party online training providers.

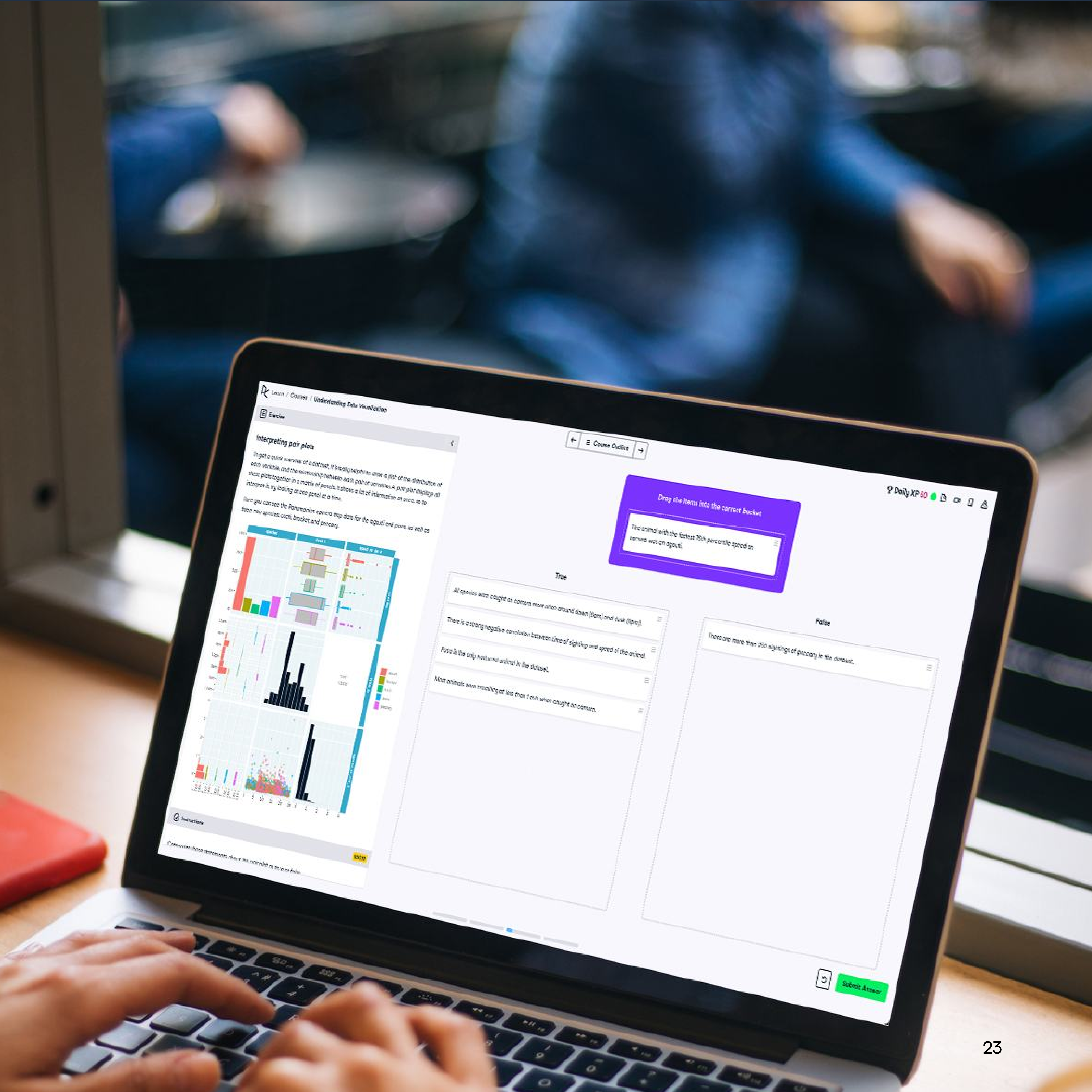
Online learning resources do not provide the needed level of personalization and interactivity

Question asked: "If you use a third-party online training provider, what challenges have you faced? Please select all that apply."



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Whether data literacy for beginners, or machine learning for developers, your teams will put their skills into action with hands-on interactive exercises, right in the browser.



SECTION 3

Five Lessons for Building Your Teams' Data & AI Literacy

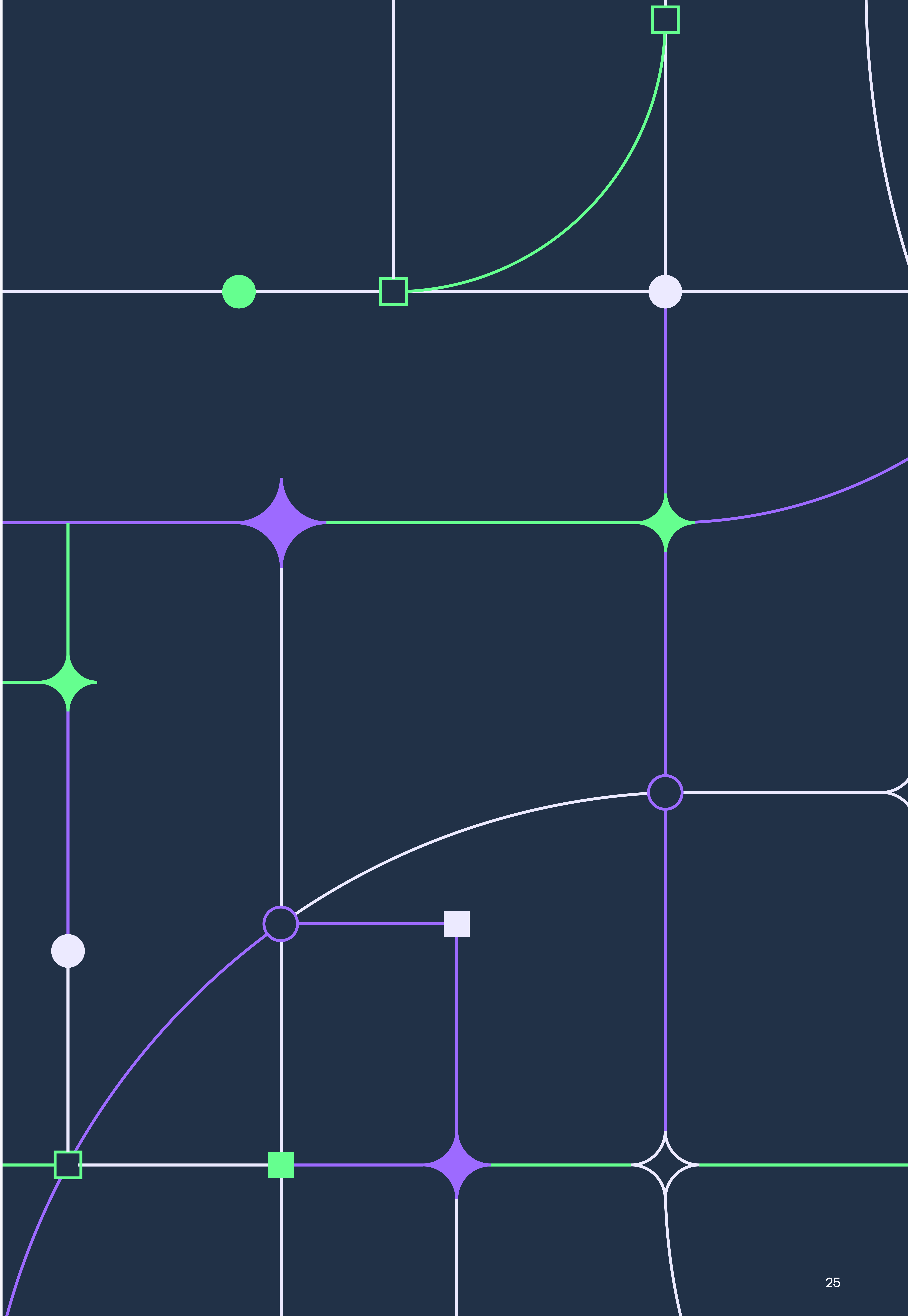
In this third section, we explore how leaders are adapting their upskilling and reskilling programs for the AI era and the best practices you can adopt in your organization.

The transformational impact of data and AI training

Before jumping into the best practices for building your teams’ data and AI skills, let's examine the value leaders with existing data and AI training programs have brought to their organizations. Across the board, leaders highlight numerous positive outcomes resulting from data and AI training initiatives. These benefits cover a wide range of categories, including **faster decision-making (76%), improved decision-making (75%), better innovation (75%), improved customer experience (65%), decreased costs (66%), increased revenue (64%), and better employee retention (62%).**

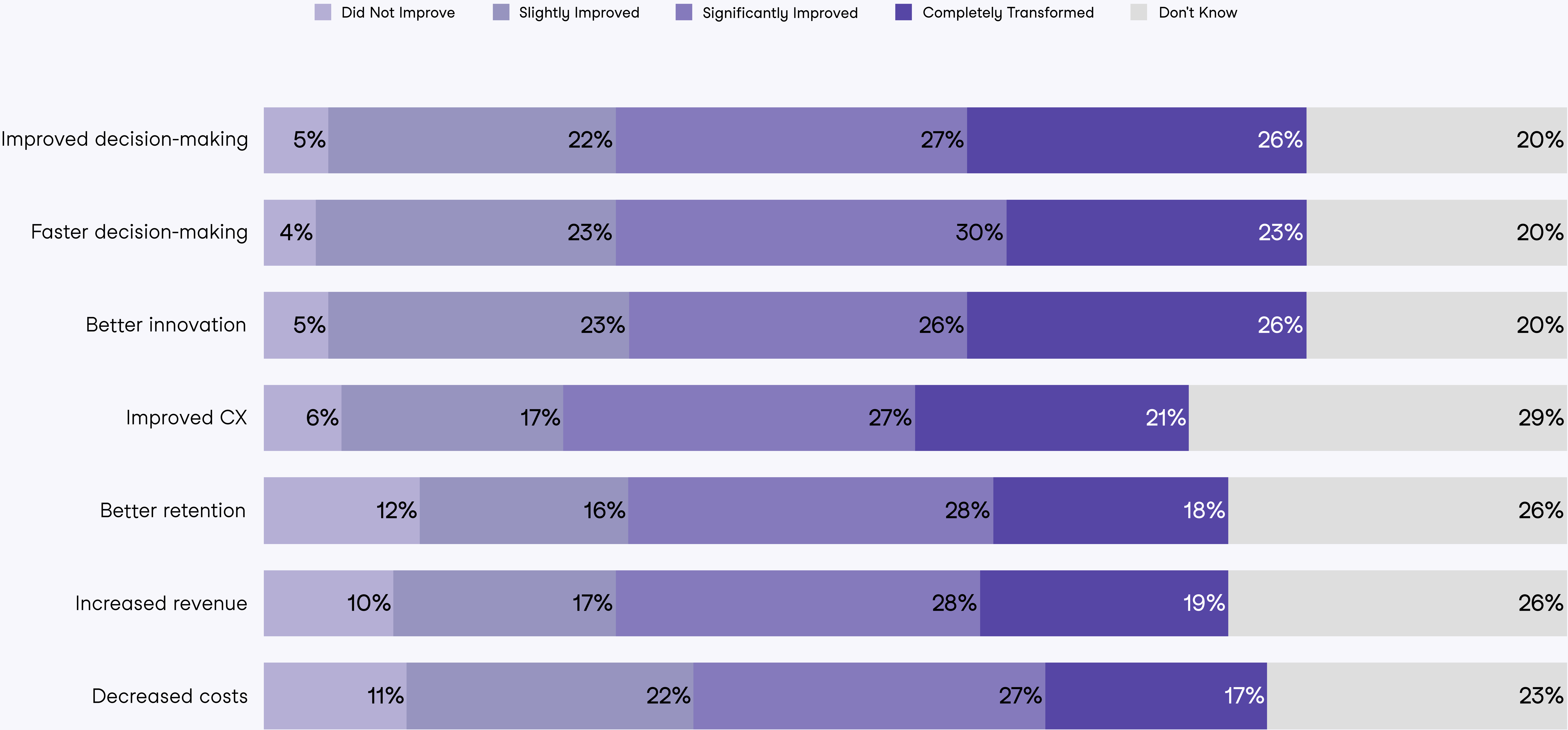
What’s interesting here is that these are aggregate numbers; let’s see what happens when we cross-section the results based on data and AI upskilling program maturity. When looking at results from leaders who have either a **mature organization-wide data literacy program** or a **mature organization-wide AI literacy program**, we can see significant increases in the benefits received from data and AI training. Leaders with either mature data and AI literacy programs report seeing even more benefits in the form of **faster decision-making (90%), improved decision-making (88%), better innovation (87%), improved customer experience (81%), decreased costs (84%), increased revenue (81%), and better employee retention (81%).** More interestingly, the number of leaders pointing to a complete transformation of these competencies as a result of widespread data and AI training has also increased.

The following charts clearly show that while the benefits of data and AI upskilling are visible regardless of the scale of the program, organizations with organization-wide data and AI literacy programs are likely to accrue the most benefit from training.



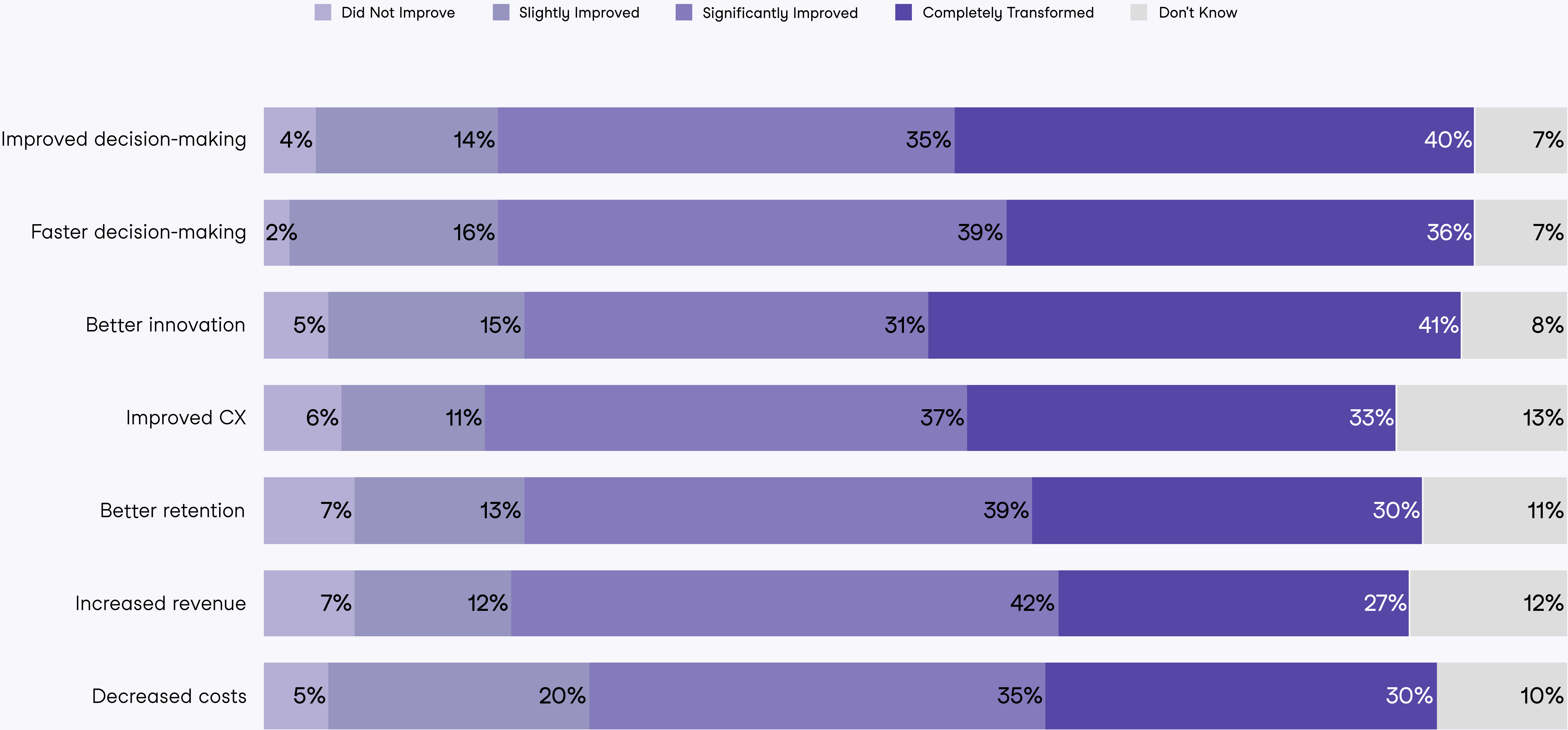
Leaders with data and AI training programs of any size have seen benefits

Question asked: "How has your organization benefited from data and AI training?"



Leaders with mature data and AI training programs have seen the most benefits from data and AI training

Question asked: "How has your organization benefited from data and AI training? (Only mature data and AI training programs)"



Five best practices for succeeding with data and AI upskilling and reskilling

Expand your existing data upskilling program to focus on AI literacy

In the earlier sections of this report, we highlighted the strong connection between AI literacy and data literacy. Additionally, we observed that AI training initiatives lag behind data training initiatives, both in maturity and in scope.

This gap needs to be addressed, and an **easy, practical way of addressing it is by expanding existing data literacy programs to incorporate AI skills**. This not only accelerates the bridging of skills gaps but also enables your workforce to contextualize data and AI literacy as interconnected skill sets. [Jordan Morrow, best-selling author, Senior Vice President of Data and AI Transformation at AgileOne, Godfather of the term “data literacy” and DataCamp Instructor, emphasizes the importance of treating AI literacy like an extension of data literacy](#), stating: “The launch of ChatGPT made AI accessible to the world. However, AI and machine learning have always been a part of the data language. We shouldn’t be distinguishing between AI and data literacy; they are both complimentary skill sets that will help us move forward in a more data-driven and analytical world.”

“

The launch of ChatGPT made AI accessible to the world. However, AI and machine learning have always been a part of the data language. We shouldn’t be distinguishing between AI and data literacy; they are both complimentary skill sets that will help us move forward in a more data-driven and analytical world.”

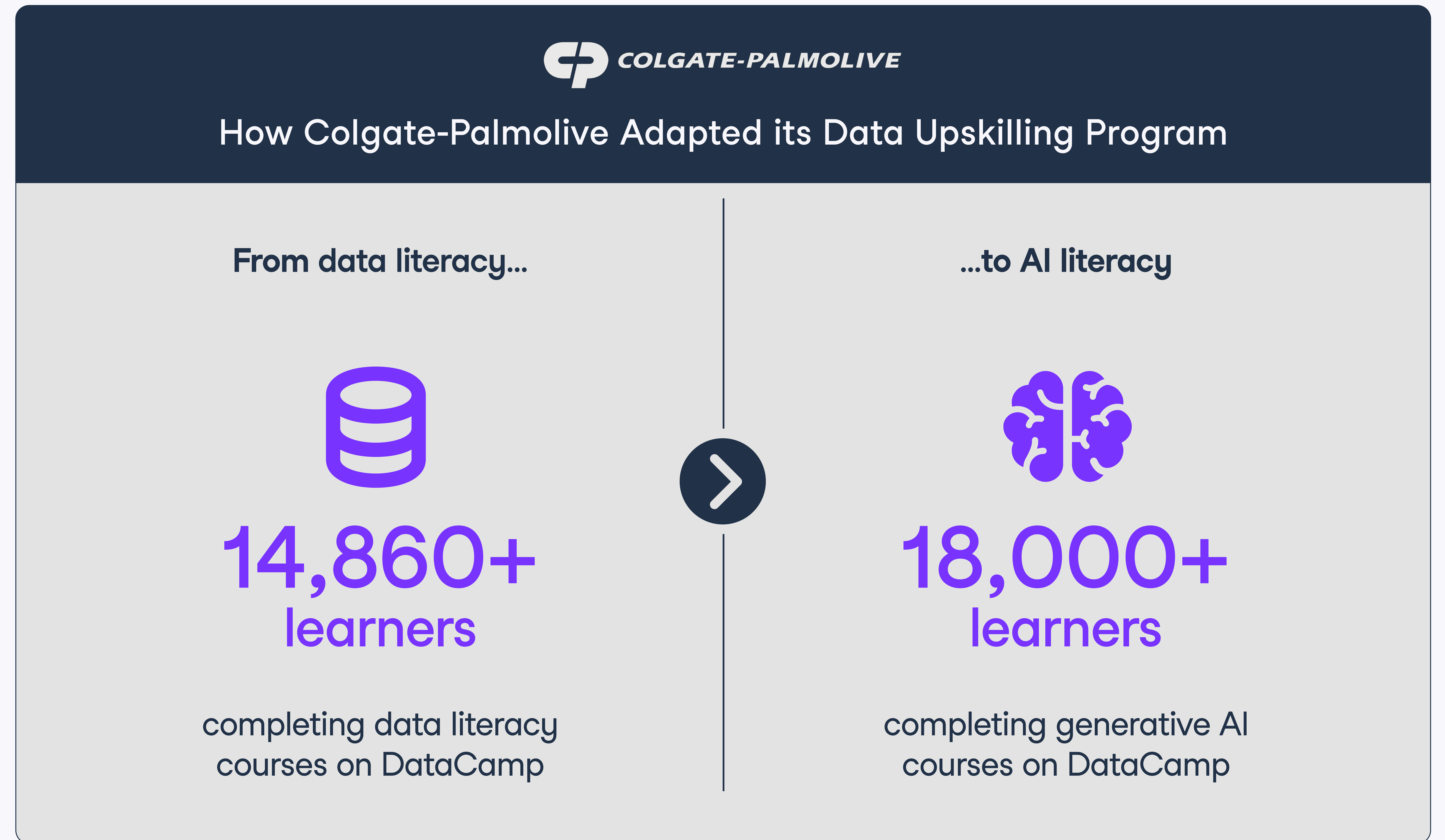


Jordan Morrow

Best-selling author, Godfather of data literacy, SVP of Data & AI Transformation at AgileOne, and DataCamp Instructor

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A compelling example of this approach is demonstrated by [Colgate-Palmolive's upskilling program](#). Colgate partnered with DataCamp for Business and upskilled 14,860+ employees on data literacy as part of its broader Data Literacy and Analytics Academy. The program boasted large success, with 80% of learners applying newly learned skills in real-world settings. However, as it became clear that Generative AI skills will be foundational for Colgate moving forward, they quickly evolved their upskilling program to incorporate AI, and worked with DataCamp on providing 18,000 Colgate learners with access to DataCamp's ChatGPT and Generative AI content.



“I just finished DataCamp’s AI training. One of the great things about it is that it gives us a common understanding and a common language to use in the organization. Not to mention the modules are short, they are easy to integrate into the flow of work.”

Amanda Klemm, World Wide Director, Manual Toothbrushes at Colgate

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If you have an upskilling program in place, it's time to expand it to a wider population

So far, we've showcased the positive correlation between organization-wide upskilling initiatives and improved transformative outcomes coming from upskilling. Therefore, it's only logical that our second best practice involves broadening the scope of these programs to reach a larger audience. This is especially relevant when it comes to AI literacy, where the adoption of tools like [ChatGPT in the workplace has more than doubled in the past year alone](#) and when looking at the AI skills leaders are looking for from their teams. As we saw earlier, leaders are primarily focused on a basic understanding of AI concepts and responsible AI best practices as the most important AI skills their teams need to know today. [Beena Ammanath, Global Head of the Deloitte AI Institute, elaborated on the intersection of AI literacy for all and Responsible AI during her discussion on the DataFramed podcast.](#)

She highlighted in an [external publication](#) the importance of scope and personalization of AI upskilling initiatives, mentioning: “In the C-suite, each business leader contends with issues specific to their role. AI literacy means, in part, understanding how AI functions in the context of their work. What is relevant to the chief marketing officer may not be the same for human resources, accounting, or finance.”

Center interactivity and personalization at the heart of your learning program

So far, our report has highlighted a **lack of personalization** and interactivity as significant challenges in online learning. This is especially the case for technical skill development like programming, knowledge of business intelligence tools, and working with databases, where skills acquired require an active learning method rather than a passive one.

A prime example of how personalization and interactivity can accelerate technical skills development comes from Rolls Royce. [Rolls Royce worked with DataCamp for Business](#) and leveraged the track editor feature to build **tailored learning tracks** comprising **relevant, interactive Python courses** for its engineers. As a result, engineers could swiftly integrate newfound knowledge, accelerating the design process and reducing its duration by a factor of one hundred.



In the C-suite, each business leader contends with issues specific to their role. AI literacy means, in part, understanding how AI functions in the context of their work. What is relevant to the chief marketing officer may not be the same for human resources, accounting, or finance.”

Beena Ammanath

Global Head of the Deloitte AI Institute

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At Rolls-Royce, we're dealing with complex data sets related to airlines and engines. Through DataCamp, our engineers gained valuable experience and learned how to automate multiple data handling processes that previously had to be completed manually.”

Akin Keskin

Chief of Design Systems, Rolls-Royce

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“

We've begun to build a 'ritual' using DataCamp to set fun challenges followed by presentations for our internal data community. So far, we've had around 45 completed challenges. Over time, we'll build an expectation around these challenges, which we're running on an approximately monthly schedule. Using DataCamp's gamification, we're able to generate some real energy for data learning.”



Lorraine Pocklington
Data Community
Manager at Specsavers

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Another good example comes from [Specsavers](#), which leveraged DataCamp's gamification features (learner XP, leaderboards) to drive even more engagement with learners as part of competitions. Specsavers suffered from skill gaps in Power BI and Databricks, and increased dependency on spreadsheets. They worked with DataCamp for Business to address these skill gaps. While they leveraged features like tailored learning paths and advanced reporting, a key highlight of their program was **their use of gamification and leaderboards to drive engagement with learners**. As a result, Specsavers experienced 3-4 hours saved per week per employee upskilled across 115+ individuals.

Given this, if your current online learning platform lacks interactivity and personalization, consider transitioning to a platform like DataCamp. Alternatively, if an immediate switch is not feasible, here are some tactics to quickly embed interactivity and personalization into your program.



Quick tactics for adding interactivity and personalization in your learning program

Quick tactics for better interactivity

- Host instructor-led sessions with internal experts, tasking learners with solving real-world use cases
- Integrate gradable capstone exercises at the end of learning tracks
- Incorporate gamification elements, such as leaderboards, badges, or rewards to make learning engaging

Quick tactics for better personalization

- Establish sub-communities within your learning community (e.g. Marketing Analytics Community)
- Organize lunch-and-learns with functional or departmental leaders
- Incorporate relevant industry or department-focused resources into your upskilling program, such as the [DataFramed podcast](#) or our [weekly webinars](#)

Treat AI literacy like a force multiplier for your data upskilling program

Counterintuitively, tasks central to data, such as analysis and programming, have surprisingly been one of the killer apps of tools like ChatGPT. We've seen this firsthand with the launch of DataLab and its transformative potential of reducing the barrier to entry to meaningful data work. We've also corroborated this notion in our survey. When asked, "Do you agree or disagree with the following statement: "AI will make it easier for my team to work with and draw insights from data""—a notable **73% of leaders agreed.**

[Nick Magnuson, Head of AI at Qlik, further elaborated on this point on the DataFramed podcast](#), highlighting the implications of generative AI on data-related tasks.

He mentioned: "There are three things that generative AI can do. It can summarize text very, very efficiently. It can create content in a very efficient manner. The third way that I've seen it implemented is around code generation or code interpretation."



As such, in line with our first best practice, we recommend you treat building your organization's AI literacy as a force multiplier of your existing data literacy initiatives, as AI skills will enable everyone to accelerate the adoption of newly acquired data skills.

Be proactive about change management and positive reinforcement

The introduction of data and AI technologies into the workplace offers significant potential for better decision-making, innovation, and productivity. However, it would be foolish to ignore the feelings of fear and anxiety they bring to the wider workforce.

According to [Qlik and Accenture](#), **74% of employees report feeling overwhelmed when working with data.** Conversely, [CNBC and SurveyMonkey](#) reports that 4 in 10 workers express concerns about AI automating their roles. Stress and anxiety are common responses to the evolving skills landscape. To address these challenges, being proactive about addressing these concerns is essential. Leaders should cultivate a positive vision for the future and implement effective change management strategies.



"There are three things that generative AI can do. It can summarize text very, very efficiently. It can create content in a very efficient manner. The third way that I've seen it implemented is around code generation or code interpretation."

Nick Magnuson, Head of AI at Qlik

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[Andrew McAfee, Principal Research Scientist at the MIT Sloan School of Management, came on the DataFramed podcast](#) and emphasized the importance of evolving organizational norms and values to create a happy and effective organization. He mentioned that rather than solely focusing on checklist-style training initiatives, leaders should focus on revamping cultural norms and values and proactively celebrating early adopters. He mentions: “A relentless emphasis on winning will tank you over time. The way you make an organization better is not by sending people off to cutting-edge training on data science or AI ethics or whatever else. It’s by getting the right norms in place; then you’ve got community momentum that takes the organization in the direction you want it to take.”

In driving positive change management for the purposes of data and AI transformation, consider adopting five tactics outlined below:

- Clarify and consistently repeat the **“What’s in it for me”** of data and AI upskilling
- **Be proactive about addressing concerns** related to automation and focus on dispelling the notion that data will be used to punish
- **Celebrate early adopters** and ensure that leaders are celebrating cultural change agents
- Leverage early adopters and **build decentralized networks of champions** that advocate for you
- Have leaders lead by example by opening meetings with data or **sharing best practices for the use of AI** at work

“

A relentless emphasis on winning will tank you over time. The way you make an organization better is not by sending people off to cutting-edge training on data science or AI ethics or whatever else. It’s by getting the right norms in place; then you’ve got community momentum that takes the organization in the direction you want it to take.”



Andrew McAfee

Principal Research Scientist at the MIT Sloan School of Management

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SECTION 4

Beyond the Workplace: Data & AI Literacy as Social Safeguards

In this section, we explore the **implications data and AI literacy hold for societal challenges** like misinformation, automation, and bias from AI systems.



In previous sections, we've explored how data and AI literacy can drive positive outcomes for organizations and their workforce. However, beyond the workplace, these competencies are emerging as essential life skills that serve as societal safeguards against humanity's most pressing threats. These threats include online misinformation and disinformation, the potential impact of automation, and the risks associated with the widespread deployment of AI. Let's learn how data and AI literacy can help mitigate these threats.

AI literacy as a safeguard against online misinformation and disinformation

According to the [World Economic Forum Global Risks Report 2024](#), misinformation and disinformation represent the most significant risk facing humanity in the immediate future.

This is especially concerning given that generative AI has the potential to reduce the cost of spreading misinformation and disinformation to zero, particularly during critical election cycles. We asked leaders to comment on the potential impact AI literacy has on protecting us from online misinformation and disinformation. **73% of leaders agree that AI literacy is fundamental for combatting online misinformation.** However, addressing these challenges requires more than just literacy; it necessitates a robust AI governance framework. As discussed by [Ian Bremmer, Political Scientist and Founder and President of Eurasia Group](#), and [Jimena Viveros, Chief of Staff and Head Legal Advisor to Justice Loretta Ortiz at the Mexican Supreme Court](#), on the [DataFramed podcast](#), such a framework is vital for managing the multifaceted implications of AI in society.

They mentioned: “The reason we need a global governance framework is because historically, when new technologies are driven by massive market forces, we are very good at privatizing the gains that come from those and we frequently socialize the losses. That's even true in a great capitalist country like the United States. That means that you get all sorts of negative externalities that no one wants to pay attention to.” Combining Ian and Jimena’s insights with the ones reported by leaders, we realize that AI literacy not only helps mitigate immediate risks like misinformation but also empowers individuals to engage in meaningful dialogues with government institutions and help shape the future of AI regulation.

AI literacy as a safeguard against potential automation

Throughout this report, we've witnessed firsthand the anxiety surrounding the potential impact of generative AI on job security, with [four in 10 workers expressing anxiety about AI potentially displacing their roles](#).

Our survey of leaders reflects a similar sentiment, with **six out of 10 leaders agreeing AI will inevitably lead to some level of job automation within their organizations**. However, amidst these concerns, leaders also identify AI literacy skills as a crucial defense against automation. **57% of leaders believe that employees with AI literacy skills are less susceptible to being impacted by automation**. Moreover, there's a recognition among leaders that organizations and countries bear a responsibility to ensure that individuals are not left behind in the face of technological advancements. In fact, **75% of leaders agreed that countries and organizations bear a responsibility to equip their people with the necessary data and AI skills to remain competitive in today's job market**.

At DataCamp, we share this responsibility to prepare individuals for a digital future. Since last year, [we've upskilled over 1 million people for free](#) with our Donates and Classrooms programs, ensuring they remain competitive in today's AI-driven job market.

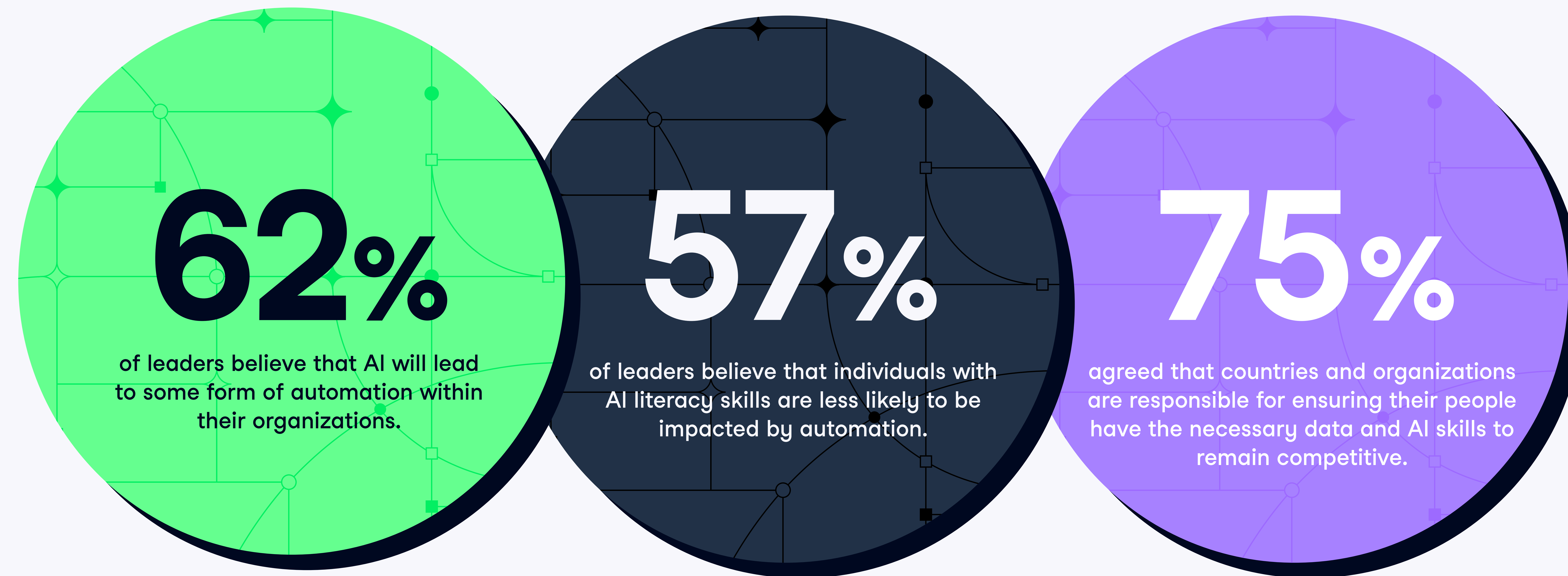
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The reason we need a global governance framework is because historically, when new technologies are driven by massive market forces, we are very good at privatizing the gains that come from those and we frequently socialize the losses. That's even true in a great capitalist country like the United States. That means that you get all sorts of negative externalities that no one wants to pay attention to.”



Ian Bremmer
Political Scientist, Founder and
President of Eurasia Group

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While there's no guaranteed shield against automation risks, [Bernard Marr, AI Advisor, Best-Selling Author, and Futurist](#), [underscores the importance of AI skills as a means to protect ourselves from potential displacement](#). He notes that while some displacement is inevitable, augmentation of current jobs with AI will most likely be the prevailing scenario, and knowing how to leverage AI will be fundamental to succeeding in these newly augmented jobs.



“There will be some job displacement for sure, but the vast majority of jobs will be augmented, and where AI will almost give us a superpower that works alongside us and will make us better and more efficient and hopefully more human in the long run. And what people should be worried about is not AI, but people using AI better than they are in order to become better at their job.”

Bernard Marr, AI Advisor, Best-Selling Author, and Futurist

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“

We're building AI systems involving humans. Language by itself is imbued with so much of our biases. The ways in which we describe certain things like “Policeman” or “Mankind.” What are we inferring with the use of that terminology? There are many things that are embedded in the ways that we speak that we might think is normal, but was actually constructed. Being aware of that allows us to actually build better technical systems because technical systems are never divorced from us.”



Dr. Joy Buolamwini

Artist-in-Chief and President
of The Algorithmic Justice League

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Data and AI literacy as a safeguard against AI harms

As highlighted earlier, the ethical and responsible use of AI stand out as one of the most sought-after skills by leaders for their teams. Going deeper into this, a significant **75% of leaders agreed with the statement**, “The responsible and ethical use of AI should be taught to every employee in my organization.” This sentiment is well-founded, considering the potential for both generative and discriminative AI to inflict significant harm, particularly in terms of bias.

[Dr. Joy Buolamwini, Artist-in-Chief and President of The Algorithmic Justice League, shed light on the pervasive nature of bias in machine learning systems during her discussion on the DataFramed podcast.](#) She emphasized the prevalence of bias in current machine learning models, mentioning: “We're building AI systems involving humans. Language by itself is imbued with so much of our biases.

The ways in which we describe certain things like “Policeman” or “Mankind.” What are we inferring with the use of that terminology? There are many things that are embedded in the ways that we speak that we might think is normal, but was actually constructed. Being aware of that allows us to actually build better technical systems because technical systems are never divorced from us.”

As a result, data and AI literacy emerge not only as essential skills for driving improved business outcomes but also as foundational safeguards against the inadvertent deployment of harmful AI systems.



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Conclusion

The work on this report began in early February 2024. At that time, the world was and continues to grapple with the profound implications of transitioning to an AI-driven landscape. Throughout this report, we've witnessed firsthand the growing importance of the upskilling and reskilling agenda. However, it's clear that this urgency has not matched the pace of the rapidly evolving skill requirements demanded by leaders in this new era.

At DataCamp, we've had the privilege of collaborating with numerous organizations in bridging their data and AI literacy skill gaps. With these partnerships, we'll continue to champion the inspiring stories of leaders at the forefront of driving data and AI literacy initiatives within their teams and organizations. If you're looking to be part of this journey, speak to our team today.

Methodology

This research has been conducted using an online interview administered to members of the YouGov Plc UK and USA panel of individuals who have agreed to take part in surveys. In this research, the survey features the opinions of a sample of 564 business leaders in the UK and the USA. The data was collected between 22.01.24—10.02.24, and all the qualitative interviews referenced with thought leaders in the data and education space were featured from the DataFramed podcast and DataCamp's webinars and RADAR conference series.

Panel of experts



Taylor Anderson
Global Director Insights
Capabilities at Colgate



Valerie Logan
CEO at The Data Lodge



Libby Duane Adams
Co-founder and Chief
Advocacy Officer at Alteryx



Kyle Daigle
COO at GitHub



Eric Siegel
Founder of Machine Learning
Week, Former Columbia
Professor, Best-selling Author



Jordan Morrow
Best-selling author,
Godfather of data literacy,
and DataCamp Instructor



Beena Ammanath
Global Head at
Deloitte AI Institute



Akin Keskin
Chief of Design Systems
at Rolls-Royce



Lorraine Pocklington
Data Community
Manager at Specsavers



Nick Magnuson
Head of AI at Qlik



Andrew McAfee
Principal Research Scientist
at the MIT Sloan School of
Management



Ian Bremmer
Political Scientist & Founder
& President of Eurasia Group



Dr. Joy Buolamwini
Artist-in-Chief and President
of The Algorithmic Justice
League



Bernard Marr
AI Advisor, Best-Selling
Author, and Futurist



Jimena Viveros
Chief of Staff and Head Legal
Advisor to Justice Loretta Ortiz
at the Mexican Supreme Court

Empower your business with world-class data and AI skills

DataCamp is the go-to data and AI transformation platform. Equip your workforce with the skills and tools to work with data and AI at scale.



Make data-driven decisions—at scale

Empower your workforce to make faster and better decisions with data.



Drive technology adoption

Drive technology ROI by equipping your workforce with the necessary skills to work with modern data and AI tools.



Accelerate growth and innovation

Drive and sustain innovation and enable your workforce with a common data and AI language.



Retain and attract talent effectively

Make skills the key to retaining and attracting top talent with tools to easily drive learner engagement.

The DataCamp Edge

Learn why 14M+ learners and 4,000+ organizations prefer DataCamp for data and AI upskilling. With DataCamp, build everyone’s data and AI skills, from busy executives to front-line workers.

A comprehensive data and AI curriculum

Build your team data skills with a top-tier curriculum focused only on data and AI skills, spanning introductory data literacy skills to advanced machine learning.

A hands-on interactive learning experience that works

Whether conceptual or coding courses, your team will put their skills into action with short videos and hands-on interactive exercises.

Learner reporting and analytics

Visualize skill growth across your organization and seamlessly integrate learning data into your reporting tools.

World-class support and guidance

Guarantee learning success with support from customer success managers on adoption strategies, roll out best practices, SSO, and LMS integrations to tailor learning paths that fit your organization perfectly.

You’re in great company

More than 4,000 organizations use DataCamp to transform how their teams use data and AI.



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