Content Intelligence
AI-Powered Insights on Learning Content

Digital learning enables organizations to provide scalable and democratized learning while giving learners flexibility and autonomy to create, share, and access that learning at any time, and anywhere. Most organizations, big or small, invest in one or more content libraries to offer a wide array of digital learning opportunities to their learners.

We are seeing pioneering learning organizations such as BUPA, Cemex, Novartis, Kraft Heinz, and Nordea Bank starting to organize their learning content around business capabilities. Instead of just providing lots of content, these organizations are offering developmental assignments, credentials, certifications, and even networks of people that can share knowledge and information through capability academies.[1]

However, for most organizations, all that content is just a big maze to navigate, and learning and development (L&D) teams don't have any way of knowing what content is useful, relevant, and engaging to their people. In this report, we will reveal a new approach that L&D organizations can leverage to identify digital learning that's most relevant for learners.

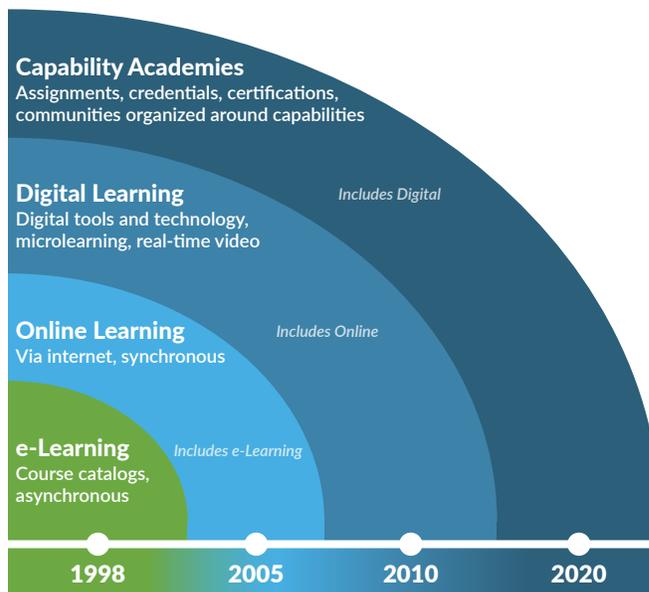# The World of Digital Learning

Learning organizations across the world have come a long way since the bricks versus clicks debate. Since the inception of e-learning back in the nineties, organizations have experimented with and adopted various formats such as micro- and macrolearning, video, mobile, virtual, off-the shelf, customized, and proprietary or employee-authored learning content.

The world of digital learning has evolved over the years (see Figure 1), giving rise to numerous online learning content platforms now on the market such as LinkedIn Learning, Udemy, Coursera, Skillshare, Degreed, Skillsoft, Udacity, and many more. In fact, by 2025, it's projected this market will be worth $325 billion.[2]

Figure 1: The Evolution of the Digital World of Learning

Capability Academies
Assignments, credentials, certifications, communities organized around capabilities

Digital Learning
Digital tools and technology, microlearning, real-time video
Includes Digital

Online Learning
Via internet, synchronous
Includes Online

e-Learning
Course catalogs, asynchronous
Includes e-Learning

1998   2005   2010   2020

Source: The Josh Bersin Company, 2022

A Tsunami of Learning Content

In the 1990s, organizations started to shift to e-learning courses, which were essentially classroom training content re-created for online delivery in the form of "course catalogs and online universities." Vendors like Skillsoft emerged as market leaders to address this need. As the internet grew throughout the 2000s, YouTube, Lynda.com, and MOOCs disrupted the e-learning market.[3] About ten years ago, the idea of making high-quality higher education more accessible caught on, and other content publishers like Coursera, FutureLearn, edX, and Udacity started to surface.

Over the same period, some learning marketplaces like Udemy (B2C-oriented) and OpenSesame (B2B-oriented) arose, and newer incumbents such as LinkedIn Learning (formerly Lynda.com), Pluralsight, TED-Ed, and HBR began challenging traditional providers like Skillsoft. A fast-growing and

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1   "The Capability Academy: Where Corporate Training is Going," joshbersin.com, October 2019.
2   "E Learning Climbing to $325 Billion By 2025 UF Canvas Absorb Schoology Moodle," TJ McCue/*Forbes*, July 2018.

3   "Can MOOCs Solve Your Problem?" Monika Hamori/*Harvard Business Review*, February 2018.

competitive e-learning solution provider market coupled with an increasing appetite for digital learning has now led to the creation of enormous amounts of content for organizations to choose from.

Today, many large organizations spend millions of dollars on content libraries, often without a clear understanding of which content is most relevant for their employees. As a result, learners are inundated with choices—from what is available behind the paywalls of these content providers as well as from what is the free universe on the internet. These multiple sources and assets often offer different viewpoints on similar topics, creating even more chaos rather than a unified and consistent understanding across common topics. Additionally, companies struggle to measure the ROI on the content spend and lack insights to determine which content is most aligned with the skills and capabilities needed for business success.

The Urgent Need for a Learning Data Architecture

Companies make enormous investments in digital content, which typically covers onboarding, technical and professional training, compliance, leadership, and almost every new company initiative. As we discussed, most big companies find that collecting and analyzing the data related to the consumption of all this content can be quite daunting. Could the learning record store (LRS) solve this dilemma?

The LRS is a new breed of a data-management platform that collects learning activity and learning transaction data from any xAPI-enabled learning system. This means data can come from a learning experience platform such as Degreed, EdCast, Percipio, LinkedIn Learning Hub, Microsoft Viva Learning, and Learning Pool. The LRS keeps track of what all the learners are doing. The LRS also ensures data consistency and provides data cleansing, which is key for badging, certifications, and creating a more personalized and adaptive learning experience. As new platforms and technologies are introduced and exchanged, LRSs keep the learning data stored in one place.

The LRS is designed to integrate all the learning activities and technologies throughout an organization, helping to

create a simplified data architecture for learning. It shows companies which content is highly used, which content is rarely, if ever, used, and which sections of courses, articles, and assets are highly valued. Rather than searching for data in the LMS (learning management system), LXP (learning experience platform), and other content systems, the LRS can operate as the single source of utilization data, and this can be tremendously valuable as a company's content investment grows. However, there's one missing link.

While the LRS helps synthesize consumption data and generate insights based on the content and learning experiences with which learners have interacted, these activities come after the investments in these resources have been made. What if there were a way of evaluating good content upfront before investing in these resources? What if companies could do more than just analyze the consumption or utilization of content? What if companies could transform the learning content strategy by analyzing the content itself— does it align with your organization's approach, philosophies, skills and capabilities? Enter "content intelligence."
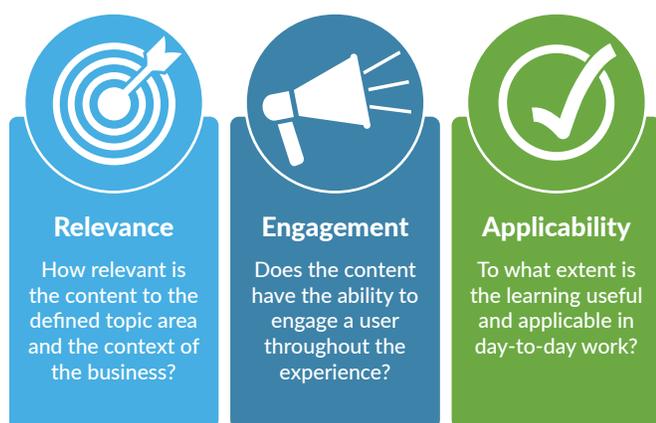
The Missing Link: Content Intelligence

Amid the chaos caused by the proliferation of digital learning content, there is a growing need to move from more to less, from quantity to quality and relevance, and from catalog provision to delightful discovery. Organizations can optimize their learning content strategy by investing in more relevant and higher-quality content, as well as trimming back on the rest. However, truly assessing content relevance is a tough nut to crack.

Most organizations speculate on content relevance and quality by the title of a course—judging the book by its cover so to speak—or by course consumption metrics. However, assessing alignment of content with the company's skills and capabilities as well as vision and philosophy in each topical area can be an impossible feat. Doing this manually would require an army of people and thousands of hours of effort to comb through the content and categorize. That's where AI and technology comes in, and where "content intelligence" solutions can help.

Filtered—a content intelligence solution—uses AI and algorithms to analyze content libraries, assessing the content for relevance, benchmarking against other libraries as well as free resources, and then ranking the content by degree of relevance, thereby providing concrete data to support informed decision-making. Essentially, the platform uses three measures for defining "good" content (see Figure 2).

Figure 2: Three Dimensions of "Good" Learning Content

Relevance	Engagement	Applicability
How relevant is the content to the defined topic area and the context of the business?	Does the content have the ability to engage a user throughout the experience?	To what extent is the learning useful and applicable in day-to-day work?

Source: The Josh Bersin Company, 2022

1. **Relevance.** Alignment to a company's set of skills. Relevance is calculated for each asset, relative to the agreed-on, high-value skills in a company. Relevance is an especially important metric because it can be calculated before putting the content in front of learners, whereas usage and usefulness metrics are determined after learners have already interacted with it.

2. **Engagement.** Completions-per-access. For engagement, the platform can look at the proportion of users that access the content and take the learning experience through to the end as a potential indication of actual usage and the ability of the content to engage a user, rather than just the number of employees accessing or clicking into the content.

3. **Applicability.** Percent of people who find the content useful. For applicability, the platform explicitly solicits user feedback on each learning experience and calibrates it with the insights on relevance and usage.

Insights from Analyzing Over 1 Million Content Assets

Does high-priced custom content outperform general-purpose articles on the web? Does video or instructionally designed content outperform blogs or simple presentations? Does duration impact efficacy of content? What are the takeaways for L&D departments?

We uncovered the following answers to these pertinent questions by running content intelligence algorithms on over a million learning assets from 400 providers and consumption patterns of 50,000 learners at various large companies.

Defining business-critical capabilities is the starting point for evaluating content.

Relevance depends on the industry and company context. Once an organization has established a capabilities framework that makes sense for the near term (two to three years), content intelligence algorithms can be configured to analyze every piece of the company's learning content to determine which individual assets are most aligned to the skills and capabilities needed by role and job type (see Figure 3 on the following page).

In addition, organizations can run analyses on existing and prospective content libraries to determine which libraries offer the most-relevant content for their workforce (see Figure 4 on the following page). Importantly, the cost of each library can be brought in for a direct "cost per relevant asset" comparison. These insights can help L&D teams make informed procurement decisions and optimize spend by directing content investments to what matters most for the business.

Figure 3: Content Insights to Determine Most-Relevant Content
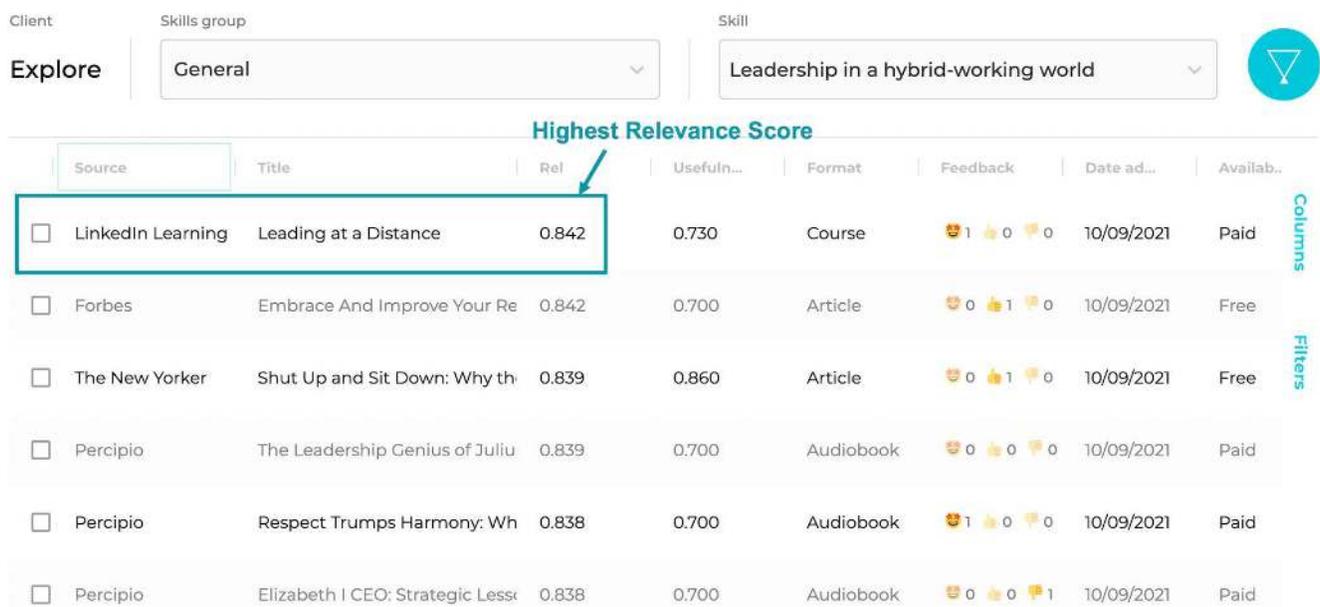
Source: Filtered, 2021

Figure 4: Content Insights to Determine Most Relevant Content Libraries
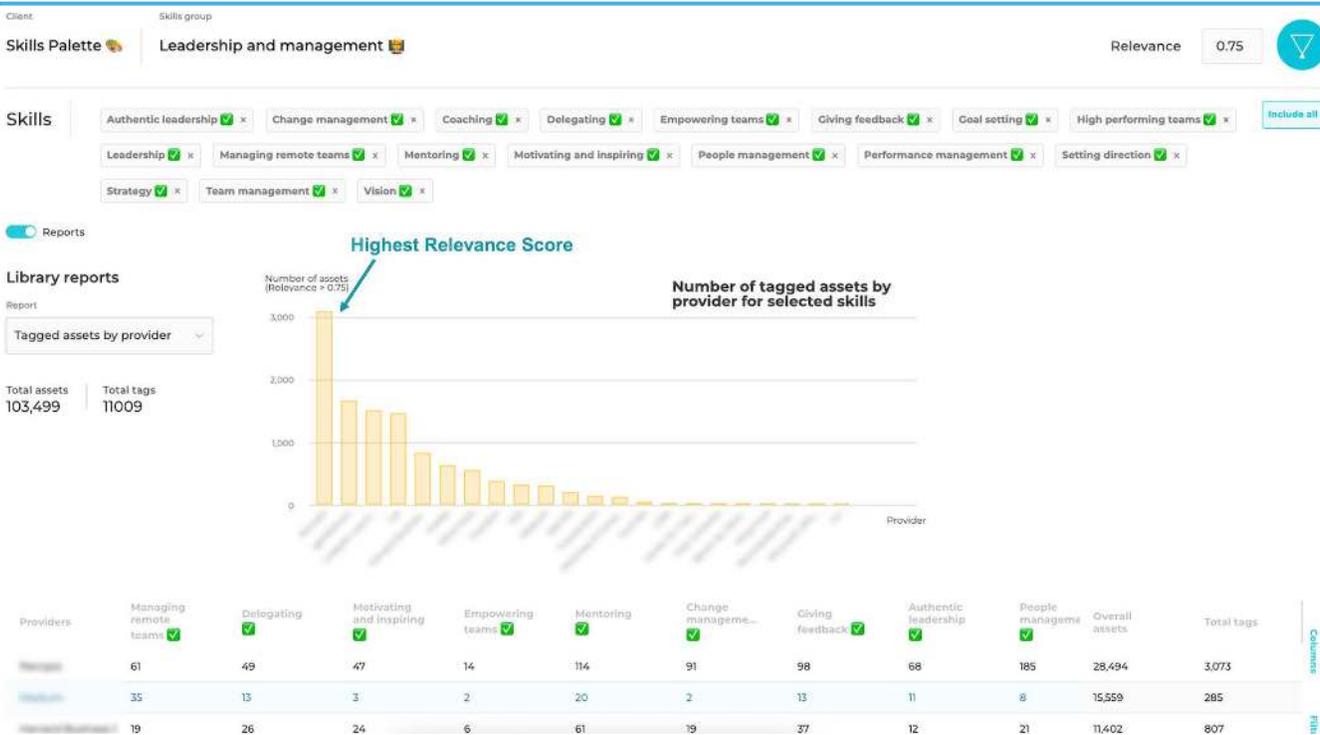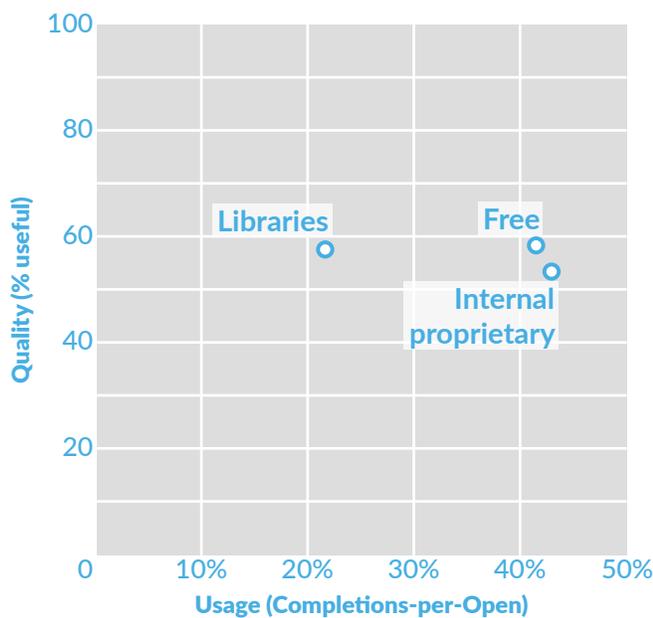

Source: Filtered, 2021

Learners leverage open-source and proprietary content more than vendor libraries.

L&D teams often wonder how content from the web (free) compares with vendor libraries (paid) and proprietary internal content (most expensive). The findings from the Filtered data validate what most L&D leaders know and fear to be true. Most organizations love having the "library" available, but people don't use it that much.

Vendor libraries score lower than free content when it comes to usage (see Figure 5). Indeed, well-curated web-content can provide access to a rich, diverse, and a broad span of materials at no cost. However, this does not necessarily mean vendor libraries should be discarded or that they don't have a place in your company's learning strategy.

Figure 5: Vendor Libraries Score Low in Usage

Source: Filtered, 2021

Vendor libraries can offer broad coverage of content across multiple areas as well as provide a consistent look and feel, which makes the content easier for workers to navigate. Additionally, a centralized and unified source of content helps make data and analyses more meaningful. But rather than writing off vendor libraries, organizations should re-create the "instant and easy access" that web-based searches deliver

and select the right libraries—those that offer learning content most relevant for your workforce.

Figure 5 shows that proprietary content does well, too. The aggregate of all clients' proprietary content ranked number 26 on a long list of 500 providers. Although proprietary and customized content may require a higher spend, this content is likely most aligned with the organization's learning needs and approach, making this content a winner on relative usage and quality. This finding reinforces the importance of relevance as a driver for engagement and applicability of content.

If the content is right, duration is a minor consideration.

Our research validates that today's learner is distracted and overwhelmed and attention spans are shorter. Bite-size, short-form, or microlearnings are more popular. However, the data intriguingly revealed that when the content is high quality and relevant, learning assets that require longer amounts of time from the learners to complete can outperform short-form content. Learners today may be overwhelmed and distracted, but they can be engaged with content that's most relevant for their development needs.

At the end of the day, good content is what matters to learners. Of the 400 providers in the study, in order of rankings, TED, HBR, getAbstract, and LinkedIn Learning scored in the 10th percentile, thereby winning the popular vote on high-quality learning content.

Productivity is top of mind for learners worldwide.

Analyzing consumption patterns of 50,000 learners worldwide points to one clear pattern: Learners want to be more productive. The white hot popularity of this topic is substantiated by a huge appetite for personal productivity-related content, which is understandable considering its impact on work-life balance, mental health, wellness, and holistic wellbeing.

In addition, learners are also looking at digital productivity tips and tools, with the most common search terms on LMSs centering around tips for ubiquitous Microsoft applications. This reflects the everlasting popularity of Excel, PowerPoint, and the rest of the Office suite and the emerging Microsoft Teams.

Conclusion

We're now in a world where the problem is not "finding" content but rather "selecting" or "curating" just the right content for your organization's needs. The definition of right content is contextual and unique for every organization, but a clear understanding of business-critical skills and capabilities, augmented with data-based insights on learning content that best aligns with those skills and capabilities, can help organizations optimize content efficacy.

Content intelligence is a powerful solution for streamlining content, engaging learners with the most relevant content, and maximizing ROI on learning. There is good, effective content out there in all sorts of shapes and sizes: free and paid, short and long, in multiple formats, and across innumerable platforms. The onus is on organizations to separate the wheat from the chaff and put the most relevant content in front of learners: AI-powered content intelligence helps organizations do just that.

AstraZeneca Adopts a Data-Driven Approach to Managing Learning Content

AstraZeneca is a global, science-led, biopharmaceutical company that focuses on the discovery, development, and commercialization of prescription medicines. The organization is headquartered in Cambridge, UK, and operates in more than 100 countries with over 76,000 employees worldwide.[1]

AstraZeneca is implementing a multiyear learning transformation program focused on developing learning agility, a culture of lifelong learning, and the skills and capabilities needed to equip people at AstraZeneca for the future of work. These capabilities include transferable and enduring skills to help the entire workforce do well at their jobs, now and in the future. To help support and advance these capabilities, learning technology and learning content libraries are now managed by global teams for the benefit of the whole enterprise. The following are the five learning capabilities: learning agility; coaching and feedforward[2]; leadership; professional skills; and data, digital, and analytics.

AstraZeneca has a wide array of content libraries that are used across different businesses and teams. Creating a centralized learning system would call for a global learning content strategy to determine which libraries offer the most relevant and highest-quality content for learners across the organization in the five identified enterprise capability areas.

To achieve this outcome, AstraZeneca needed to measure the relevance of all existing and prospective content across libraries in a scalable and time-effective manner. To solve this problem, AstraZeneca partnered with Filtered to gather data-based insights for decision-making, and the process broadly entailed the following steps:

1. **Defining capabilities**. *Define a framework of skills and capabilities most relevant to AstraZeneca.* Capability owners—designated subject-matter experts (SMEs)— for each of the five identified enterprise capability areas

partnered with Filtered to define a framework of 42 nuanced skills underlying each capability.

2. **Mining data**. *Identify most common keywords in content relevant to defined capability areas.* Based on the context, Filtered performed data mining to reveal a list of keywords that repeatedly surfaced in content tied to these capability areas.

3. **Validation and ranking**. *Validate and rank keywords for relevance to the corresponding skills in the context of AstraZeneca.* Capability owners validated and ranked the list of keywords for relevance to the corresponding skills in the context of AstraZeneca. For example, the keyword "curiosity" surfaces in most learning content but is most relevant to "growth mindset" and "design thinking skills."

4. **Relevance analysis**. *Leverage AI to determine relevance of content in each library.* Using this information, Filtered configured its content intelligence algorithms and ran a relevance analysis on 42 skills across 10 content libraries.

5. **Benchmarking**. *Compare libraries based on concrete content intelligence data to make informed decisions about content management.* Filtered analyzed almost 300,000 assets and 10 libraries in a short span of two months and provided detailed benchmarking, along with insights around which libraries provided content most relevant to skills that are most important for AstraZeneca and insights around the uniqueness, similarity, overlap, and concentration of relevant content across different libraries.

AstraZeneca now has a clear understanding of which content libraries provide, or can provide, the most relevant content to the skills and capabilities the organization wants to develop in its workforce. The analysis, for example, helped consolidate learning content libraries with a lot of overlap in capabilities, as well as identify gaps in learning content and figure out which content libraries were most useful for learners. The potential of this approach to improve ROI for any large organization is clear.

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1   *What Science Can Do: AstraZeneca Annual Report and Form 20-F Information 2020*, AstraZeneca PLC.
2   "Feedforward" is the reverse of *feedback*. It is a method for replacing positive or negative feedback with future-oriented solutions.

About the Authors

Josh Bersin

Josh founded Bersin & Associates in 2001 to provide research and advisory services focused on corporate learning. He expanded the company's coverage to encompass HR, talent management, talent acquisition, and leadership and became a recognized expert in the talent market. Josh sold the company to Deloitte in 2012 and was a partner in Bersin by Deloitte up until 2018.

In 2019, Josh founded the Josh Bersin Academy, a professional development academy that has become the "home for HR." In 2020, he put together a team of analysts and advisors who are now working with him to support and guide HR organizations from around the world under the umbrella of The Josh Bersin Company. Recent research covers topics such as hybrid work; HR technology market trends; employee experience; and diversity, equity, and inclusion. He is frequently featured in publications such as Forbes, Harvard Business Review, HR Executive, The Wall Street Journal, *and* CLO Magazine. *He is a popular blogger and has more than 800,000 followers on LinkedIn.*

Nehal Nangia

Nehal is the senior manager for research at The Josh Bersin Company. In this role, Nehal drives empirical research on key workforce-related topics and the development of actionable insights and powerful stories for today's talent executives. Nehal has almost 15 years of professional experience in human capital, with a focus on performance management; employment value proposition; workforce transformation; and diversity, equity, and inclusion (DEI). Prior to joining The Josh Bersin Company, Nehal was a global advisor for clients at Deloitte and published several studies on pertinent topics such as DEI, performance management, and bias. Nehal lives and works in India and has a master's degree in psychology.